Disclaimer:
The Annual Report aims to provide overview of the activities and achievements of UNIDO’s activities in India during 2019, covering ongoing technical cooperation projects, new project developments, engagement with government, business and other stakeholders. However, it does not intend to provide any official data or information concerning project implementation and financial details. The views expressed in this publication are those of the contributors and do not necessarily reflect the views of UNIDO or Government of India or its funding agencies. UNIDO or Govt. of India or its funding agencies do not warrant or assume any legal liability or responsibility for the accuracy, completeness or usefulness of any information contained in this publication.
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The year 2019 has been an exciting one for UNIDO in India, with the Organization building on past strengths, while driving for change in line with the India Country Programme (CP) 2018-2022. The Country Programme is structured in four key results areas, respectively: productivity and resilience of MSMEs; solutions for climate, resources and environment; inclusive and responsible value chains and business; and strategic policy for industrial transformation.

The Annual Report 2019 showcases UNIDO’s diverse portfolio of services in line with the thematic priorities, as well as with a focus on national perspectives, cross-cutting priorities and service functions. As of December 2019, UNIDO has 13 projects ongoing with government entities and total project expenditures in India mounted up to USD12.4 million in 2019, contributing to different aspects of inclusive and sustainable industrial development, such as energy efficiency and renewable energy, environmentally sound management of waste and chemicals, cleantech innovation, productivity and appropriate technology. Each project involves a strong partnership with a national line ministry and relevant state, business and other entities.

2019 witnessed transition and strategic reorientation in the UNIDO India portfolio. The International Centre for Inclusive and Sustainable Industrial Development (IC-ISID), jointly established by the Department for Promotion of Industry and Internal Trade (DPIIT) and UNIDO in 2015, completed its project support on productivity in bicycle sector, which delivered extensive training and capacity building on topics as diverse as bike design, e-bikes and entrepreneurship and expanded the testing facilities at the Research and Development Centre for Bicycles and Sewing Machines. IC-ISID also started the project for firm level demonstration of appropriate technologies in pulp and paper sector, in collaboration with Central Pulp and Paper Research Institute.

In the energy domain, UNIDO expanded its energy efficiency support to a further 11 MSME clusters, bringing the total to 33. The 12th Energy Monitoring Cell was inaugurated in Sikkim, and first two energy efficiency technologies demonstrated in Surat textile cluster using innovative procurement and financing model, provided through Energy Efficiency Services Limited (EESL). 13 innovators were supported to deploy innovative energy solutions in practice in diverse sectors, including milk chilling, cold chain distribution, water pumping and cement manufacturing. An international study tour was organised on bio-methanation technologies and applications in Europe. Roadmap for deployment of concentrated solar thermal technologies in India was launched at national workshop.

In the chemicals and waste area, Central Power Research Institute (CPRI) destructed 105-ton transformer oils contaminated with hazardous Poly Chlorinated Biphenyls (PCB) using the mobile unit established by UNIDO. UNIDO also completed installation of 20 microwave systems for on-site disinfection of biomedical waste and continued training on biomedical waste management. At HIL (Rasayani) a manufacturing unit was set up for Long Lasting Insecticidal Nets (LLIN) to provide a practical alternative to terminate the use of DTT for control of vector borne diseases.

As new project initiatives mature and are expected to start in 2020, UNIDO is confident it can continue its successful knowledge-based and action-oriented partnership with India to support industrial development that works for markets, for people and for the environment and climate.

Dr. René Van Berkel
UNIDO Representative
Regional Office in India
UNIDO IN INDIA
AT A GLANCE

1966
Set up
The United Nations Industrial Development Organization

1985
Became
specialized agency of the United Nations
dealing exclusively with industrial development

2013
June 2013, General Conference
Mr. Li Yong from People’s Republic of China
elected as the new Director-General

UNIDO focuses its resources and expertise on
Supporting developing countries and economies → Sustainable industrial development

UNIDO designs and implements programmes focused on
Thematic priorities, which directly respond to Global development priorities

Through these thematic priorities, UNIDO addresses:

MANDATE

The United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability.

UNIDO’s mission is to promote and accelerate inclusive and sustainable industrial development (ISID), as included in Sustainable Development Goal 9 (SDG9) in its 170 Member States.

India is a founding member of UNIDO, and benefits from its technical services in India and also contributes to the funding for the organization.

UNIDO REPRESENTATION IN INDIA

Delhi
UNIDO Regional Office
1st January, 2000
Set up date

Covers directly India, Bhutan, Maldives, Nepal and Sri Lanka and coordinates country offices in Afghanistan and Bangladesh.

The core elements of UNIDO’s delivery of technical co-operation services in this region are:

- Focus its activities in harmony with national policy priorities and development strategies
- Build strong and long-term partnerships with donors
- Increase UNIDO’s visibility and image in the region
- Support countries achieving globally agreed 2030 Sustainable Development Goals

It acts as a focal point to mobilize and disseminate knowledge, information, skills and technology for fostering industrial development by applying best practices and approaches to common problems of the region.

UNIDO has been delivering technical cooperation services in India since its establishment in 1966, with an ongoing focus on development of small and medium industry sector in terms of productivity, quality and use of appropriate technologies and best practices.

From the mid 1990’s, UNIDO has taken on a more prominent role in energy and environment domain, with promotion of clean technologies, energy efficiency and renewable energy. Most recently UNIDO is focusing on innovation and startups, including in cleantech and for Industry 4.0.
The Lima Declaration, adopted by UNIDO’s Member States in December 2013, sets the foundation for a new vision of Inclusive and Sustainable Industrial Development (ISID) and highlighted the role of industrialization as a driver for development.

The Department for Promotion of Industry and Internal Trade (DPIIT) and UNIDO established in 2015 on a project basis the joint International Centre for Inclusive and Sustainable Industrial Development (IC-ISID) which has been working to facilitate best practices and appropriate technologies in Indian sectors.

INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT

The Lima Declaration, adopted by UNIDO’s Member States in December 2013, sets the foundation for a new vision of Inclusive and Sustainable Industrial Development (ISID) and highlighted the role of industrialization as a driver for development.

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SUSTAINABLE

Addresses the need to decouple the prosperity generated from industrial activities from excessive natural resource use and negative environmental impacts.

INCLUSIVE

In this context means that industrial development must include all countries and all peoples, as well as the private sector, civil society organizations, multinational development institutions, and all parts of the UN system, and offer equal opportunities and an equitable distribution of the benefits of industrialization to all stakeholders.

ISID therefore implies that no one is left behind and all parts of society benefit from industrial progress, which also provides the means for tackling critical social and humanitarian needs.

ISID aims at:

- Safeguarding environment
- Advancing economic competitiveness
- Creating shared prosperity

Facilitated by strategic policies
Implemented by strong & knowledge-rich institutions

It requires an industrial transformation to ‘factories fit for the future that were basically already urgently needed yesterday’. Such factories produce quality products that are sought after by markets in competitive manner, provide a decent reward to all involved in and affected by industrial production and have conservation of environment, resources and climate engrained in their business DNA.
In 2019, IC-ISID started implementing two new projects:

1. **PAPER (PHASE 2)**
   - Building on the achievements of the previous Paper project and expanding the scope to include pilot demonstrations of technologies (black liquour heat treatment and membrane separation)
   - 4 clusters in India
   - Supported by DPIIT
   - Started in August 2019

2. **INDIA INNOVATION AND INNOVATION SYSTEMS SURVEY**
   - Assisting the Department of Science and Technology to map innovation activity and formulate policy and strategy for enhancing effectiveness and efficiency of innovation ecosystem
   - Supported by DST
   - Started in December 2019

IC-ISID has contributed significantly to various advocacy, outreach and research initiatives of UNIDO and is supporting UNIDO Regional Office and DPIIT in various new initiatives and developing projects pipeline, including with line Ministries/Departments (e.g. DST, MoFPI, MeitY) and State Governments (e.g. Andhra Pradesh, Manipur, Meghalaya, Mizoram and Sikkim).

**INCLUSIVE & SUSTAINABLE INDUSTRIAL DEVELOPMENT**

The primary objective is the promotion of Inclusive & Sustainable Industrial Development in developing countries and economies in transition.

- Safeguarding The Environment
- Advancing Economic Competitiveness
- Strengthening Knowledge & Institutions
- Creating Shared Prosperity
- **ISID**

As illustrated in the Figure above, the critical role of inclusive and sustainable industrial development (ISID) to assist Member States achieving the Sustainable Development Goals, as universally agreed in the 2030 Agenda for Sustainable Development, particularly SDG 9 and others related to industry and business. UNIDO has been working relentlessly to achieve these goals with cutting edge advisory and technical supports to government agencies, organising high-level events, such as the Manufacturing @75 in India and the Conference of Parties of UNCCD, implementing climate change and environment management projects in MSME sector. UNIDO shares knowledge and expertise at a range of important events, bringing together relevant stakeholders and providing a platform for discussion. The Organization further contributes on the global level by publishing statistics and other knowledge products that advance ISID. UNIDO works closely with its partners to address the complex challenges of today.
KEY AREAS OF CO-OPERATION

UNIDO’s linkages into the flagship programmes of the Government of India

<table>
<thead>
<tr>
<th>PROMOTING THE INCLUSIVE SUSTAINABLE INDUSTRIAL DEVELOPMENT IN INDIA</th>
<th>Lima Declaration</th>
<th>2030 Agenda for Sustainable Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIO - ECONOMIC DEVELOPMENT FRAME WORK OF THE GOI</td>
<td>Make in India Programme</td>
<td>100 Smart Cities Programme</td>
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<td></td>
<td>Swacch Bharat Mission</td>
<td>Skill India Programme</td>
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<td></td>
<td>Start-up India Initiative</td>
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<tr>
<td>ADVANCING ENVIRONMENTAL STEWARDSHIP THROUGH MULTILATERAL ENVIRONMENTAL AGREEMENTS</td>
<td>Stockholm Convention on Persistent Organic Pollutants [POPs]</td>
<td>UN Framework Convention on Climate Change</td>
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<td></td>
<td>Paris Climate Agreement</td>
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UNIDO COUNTRY PROGRAMME

This annual report highlights key activities and achievements of UNIDO projects in India during 2019. These projects are implemented within the framework of UNIDO India Country Programme (CP), as agreed between the Government of India, through the Department of Industrial Policy and Promotion (DIPP) and UNIDO. 2019 marked a transitional year, as the 2013-17 CP had been completed, whilst the new 2018-22 CP was SIGNED and operationalized. UNIDO implements its projects in close partnership with diverse central government agencies, particularly DPIIT, DHI, DST, MoMSME, MNRE, MoEFCC, MNRE, MoHUA and BEE, industry associations and sector institutions.

From 2018 UNIDO has been working under its 2018-2022 Country Programme, which was signed by UNIDO and DPIIT in July 2019. The Country Programme is structured in four key results areas, respectively: productivity and resilience of MSMEs; solutions for climate, resources and environment; inclusive and responsible value chains and business; and strategic policy for industrial transformation. As of December 2019, UNIDO has 13 projects ongoing and two preparatory assistances, with total of 8 central government entities (DPIIT, DHI, DST, MoMSME, MNRE, MoEFCC, MoHUA and BEE).

Total project expenditures in India mounted up to USD12.4 million in 2019.
### UNIDO INDIA COUNTRY PROGRAMME FOR INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT-PROJECT LIST

#### STATUS DECEMBER, 2019

<table>
<thead>
<tr>
<th>TITLE [DONOR – LINE MINISTRY]</th>
<th>START</th>
<th>END</th>
<th>TOTAL BUDGET (INCL. PSC)</th>
<th>EXECUTED IN 2019</th>
<th>BUDGET TO BE EXECUTED IN 2020 AND BEYOND</th>
</tr>
</thead>
</table>

**KEY RESULTS AREA: PRODUCTIVE AND RESILIENT MSMES**

- **Development and adoption of appropriate technologies for enhancing productivity in the Indian bicycle and bicycle parts [DPIIT-DPIIT]**
  - Jan 2017 to Nov 2019
  - Total Budget: $18,42,465
  - Executed in 2019: $5,35,592
  - Budget to be executed in 2020 and beyond: $-

- **Supporting productivity and innovation in automotive components manufacturing sector [DHI-DHI]**
  - Jan 2019 to Dec 2021
  - Total Budget: $19,68,008
  - Executed in 2019: $2,92,338
  - Budget to be executed in 2020 and beyond: $16,75,670

- **Firm Level demonstrations of appropriate technology and productivity methods in paper industry [IC-ISID] [DPIIT-DPIIT]**
  - Aug 2019 to Jul 2022
  - Total Budget: $14,95,781
  - Executed in 2019: $1,00,694
  - Budget to be executed in 2020 and beyond: $13,95,087

**KEY RESULTS AREA: SOLUTIONS FOR CLIMATE, RESOURCES AND ENVIRONMENT**

- **Environmentally sound management of medical wastes in India [GEF-MoEFCC]**
  - Nov 2011 to Oct 2020
  - Total Budget: $1,10,00,000
  - Executed in 2019: $9,84,811
  - Budget to be executed in 2020 and beyond: $13,41,577

- **Environmentally sound management and final disposal of PCBs in India [GEF-MoEFCC]**
  - Jan 2010 to Dec 2020
  - Total Budget: $1,55,10,000
  - Executed in 2019: $3,30,616
  - Budget to be executed in 2020 and beyond: $12,42,058

- **Development and promotion of non-POPs alternatives to DDT [GEF-MoEFCC]**
  - Aug 2015 to July 2020
  - Total Budget: $91,30,000
  - Executed in 2019: $13,05,102
  - Budget to be executed in 2020 and beyond: $41,40,558

- **Promoting energy efficiency and renewable energy in selected micro, small and medium enterprises (MSME) clusters in India [GEF – BEE]**
  - April 2011 to June 2021
  - Total Budget: $78,89,308
  - Executed in 2019: $22,47,495
  - Budget to be executed in 2020 and beyond: $13,35,399

- **Facility for Low Carbon Technology Deployment [GEF – BEE]**
  - Feb 2016 to Feb 2021
  - Total Budget: $95,39,999
  - Executed in 2019: $6,88,412
  - Budget to be executed in 2020 and beyond: $69,58,470

- **Promoting market transformation for energy efficiency in micro, small & medium enterprises [GEF-MSME]**
  - Feb 2016 to Oct 2020
  - Total Budget: $49,12,001
  - Executed in 2019: $90,552
  - Budget to be executed in 2020 and beyond: $14,59,268

- **Promoting business models for increasing penetration and scaling up of solar energy [GEF-MNRE]**
  - Feb 2014 to Jan 2020
  - Total Budget: $48,01,691
  - Executed in 2019: $2,08,534
  - Budget to be executed in 2020 and beyond: $10,32,502
<table>
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<tr>
<th>TITLE [DONOR – LINE MINISTRY]</th>
<th>START</th>
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<th>TOTAL BUDGET (INCL. PSC)</th>
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<tbody>
<tr>
<td><strong>KEY RESULTS AREA: SOLUTIONS FOR CLIMATE, RESOURCES AND ENVIRONMENT</strong></td>
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<tr>
<td>Organic waste streams for industrial renewable energy applications in India [GEF-MNRE]</td>
<td>June 2015</td>
<td>May 2020</td>
<td>$36,66,300</td>
<td>$21,10,059</td>
<td>$10,86,832</td>
</tr>
<tr>
<td>Sustainable cities, integrated approach pilot in India [GEF-MoHUA]</td>
<td>Mar 2017</td>
<td>Feb 2022</td>
<td>$1,32,00,000</td>
<td>$37,20,950</td>
<td>$89,82,942</td>
</tr>
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<td><strong>KEY RESULTS AREA: STRATEGIC POLICY FOR INDUSTRIAL TRANSFORMATION</strong></td>
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<tr>
<td>International Centre for Inclusive and Sustainable Industrial Development [IC-ISID] [DPIIT-DPIIT]</td>
<td>May 2015</td>
<td>April 2020</td>
<td>$10,35,853</td>
<td>$1,85,596</td>
<td>$1,65,151</td>
</tr>
<tr>
<td>National innovation and systems survey [IC-ISID] [DST-DST]</td>
<td>Dec 2019</td>
<td>Jul 2022</td>
<td>$13,41,875</td>
<td>-</td>
<td>$13,41,875</td>
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<tr>
<td><strong>PREPARATORY ASSISTANCES</strong></td>
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<tr>
<td>Modernization and Greening of Small and Medium Industries in India [UNIDO-MSME]</td>
<td>Oct 2018</td>
<td>June 2020</td>
<td>$20,736</td>
<td>$1,601</td>
<td>$13,432</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td>$8,25,48,354</td>
<td>$1,24,09,319</td>
<td>$2,77,58,189</td>
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</table>
Following the reform of the United Nations Development System, effective from 1 January 2019, all UNIDO projects and activities have been aligned to contribute to the UN India Sustainable Development Framework (UNSDF), signed between all UN agencies and Government of India. Among the seven results areas under this UNSDF, UNIDO contributes to three, respectively on poverty and urbanization; climate change, clean energy and disaster resilience; and skilling, entrepreneurship and job creation.

**SEVEN MAJOR PRIORITIES AND OUTCOMES IDENTIFIED BY KEY STAKEHOLDERS**

**Poverty and Urbanisation**
By 2022, institutions are strengthened to progressively deliver universal access to basic services, employment, and sustainable livelihoods in poor and excluded rural and urban areas.

**Health, Water and Sanitation**
By 2022, there is improved and more equitable access to, and utilization of, quality, affordable health, water, and sanitation services.

**Education and Employability**
By 2022, more children, young people, and adults, especially those from vulnerable groups, enjoy access to quality learning for all levels of education.

**Nutrition and Food Security**
By 2022, all children enjoy essential nutrition services and rural smallholders and other vulnerable groups have improved livelihoods and greater access to a nutritionally adequate food basket.

**Climate Change, Clean Energy and Disaster Resilience**
By 2022, environmental and natural resource management (NRM) is strengthened and communities have increased access to clean energy and are more resilient to climate change and disaster risks.

**Skilling, Entrepreneurship, and Job Creation**
By 2022, people vulnerable to social, economic and environmental exclusion, have increased opportunities for productive employment through decent jobs and entrepreneurship.

**Gender Equality and Youth Development**
By 2022, women, children, and young people have improved access to equal opportunities and an enabling environment, to advance their social, economic and political rights.
In 2019, UNIDO achieved steady progress in implementation of its ongoing projects contributing in the main to three of the key results area of the 2018-22 Country Programme, respectively: solutions for climate, resources and environment; productivity and resilience of MSMEs; and strategic policy for industrial transformation. During 2019, UNIDO applied its long-standing expertise in industrial development and manufacturing to helping SMEs create jobs and raise productivity and incomes. UNIDO also intensified and strengthened its engagement with the business and industry sector, in its role as advocate and knowledge partner for inclusive and sustainable industrialization, in particular in accordance with the Sustainable Development Goal-9 (SDG9).

This special emphasis for ‘Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation’ under Sustainable Development Goal 9 (SDG9) in the 2030 Agenda for Sustainable Development validated UNIDO’s mandate in the international development framework. The other SDGs also have specific industry-related targets highlighting the multiple links between industrialisation (SDG9) and related thematic areas of water and sanitation (SDG6), sustainable energy (SDG7), decent work (SDG8), sustainable cities (SDG11), sustainable consumption and production (SDG12) and climate action (SDG13).

During 2019, UNIDO emerged as a thought leader and driving force in supporting government with effective policy recommendations and advices in the domain of Industry 4.0. Particularly, UNIDO in partnership with the Department for Promotion of Industry and Internal Trade (DPIIT), a central government department under the Ministry of Commerce and Industry, strengthen the Industry 4.0 agenda of government of India with a series of thought pieces (OP-ED), published in prestigious daily newspapers and periodicals.
HIGHLIGHTS

IC-ISID completed its project support on productivity in bicycle sector, which delivered extensive training and capacity building on topics as diverse as bike design, e-bikes and entrepreneurship and expanded the testing facilities at the Research and Development Centre for Bicycles and Sewing Machines.

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FMC MSME CLUSTER BMO CONCLAVE

The Foundation for MSME Clusters (FMC) in partnership with UNIDO and GIZ and Ministry of MSME organized a ‘Cluster Conclave and 5th Responsible BMO Award: Innovate to lead’ in February 2019. On the occasion, Minister of State (IC), Ministry of MSME, Government of India, Giriraj Singh launched the web portal and brochure for promoting market transformation for energy efficiency in MSMEs. Addressing the gathering, MSME Minister emphasized on indigenous cluster and smart industries for the growth and development of country.

In the opening remarks, Dr. Rene Van Berkel, UNIDO Representative in India stated that “Cluster is not only a medium of technology but also a medium of marketing. Linking technology with cluster makes its more competitive and marketable.” Dr. Berkel further stated that Smart Manufacturing requires bringing efficiency in manufacturing and it can be done when Micro and small units compete with medium enterprises; medium compete with large enterprises and large enterprises to compete with imported products entering in market.

CONTRIBUTING TO PAGE (PARTNERSHIP FOR ACTION ON GREEN ECONOMY)

CONSULTATIONS

PAGE in India has set out – as one of its inception activities – to undertake a comprehensive stocktaking study in order to establish a baseline as well as to identify and elaborate priority areas for PAGE to support, taking into account potential synergies with existing initiatives that are key to the transition towards inclusive green economy in India.

UNIDO contributed to these activities of the inception phase of PAGE in India and led in developing different perspectives on inclusive green economy opportunities and challenges in India.
ECONOMIC TIMES PANEL DISCUSSION: NOT JUST FINANCIAL NUANCES, MANAGERIAL CAPABILITIES OF MSMES ALSO MATTER

On the occasion of the World MSME Day, an exclusive Economic Times panel discussion centered on ‘Kick-Starting the MSME Growth Engine,’ juggled a multitude of issues between the various panelists from leading industry organisations such as United Nations Industrial Development Org. (UNIDO), Confederation of Indian Industry (CII) and Carpet Export Promotion Council (CEPC). Rene Van Berkel, India Representative at UNIDO emphasized the need to look for productivity and profitability of the enterprise and how the enterprise capabilities can be enhanced to ease access to financing and capital.

INTERNATIONAL SME CONVENTION ON JUNE, 2019

Ministry of Micro, Small and Medium Enterprise, India SME Forum, and UNIDO organized the International SME Convention on June, 2019. Nitin Gadkari, Union Minister for Micro Small and Medium Enterprises (MSME) inaugurated the MSME Day 2019 celebrations and the second International SME Convention. Speaking on the occasion he said that Prime Minister Narendra Modi’s dream of making India a 5 Trillion Dollar economy can only be fulfilled by ensuring the growth of the MSME sector in the county. Speaking in the event, Dr. Rene’ Van Berkel, Regional Representative of UNIDO in India stated that the MSME sector is the backbone of the country’s economy. He said the sector is changing very fast. With the coming of GST, many micro and small enterprises have come into the fold of the formal economy, which is a very good sign.

JOINT UN ASSISTANCE MISSION ON AIR POLLUTION IN INDIA

United Nations in India commissioned a strategic study on Air Pollution in India and UNIDO contributed into this joint mission of UN. As part of this mission, team of UNIDO visited various parts of Indian cities to assess the air pollution levels to enable a future action program to address the issue. A series of stakeholder engagement activities were also carried out.
CII GREENCO SUMMIT–2019

As many as 38 companies have been awarded with environmental best practice award for their excellent performance in resource conservation and environmental management at the annual GreenCo Summit held on 4 July 2019 in New Delhi, jointly organized by Confederation of Indian Industry (CII) in partnership with UNIDO. The GreenCo Rating System assesses companies on its environmental performance and suggests the way forward in addressing the climate change concerns. GreenCo-rated companies have reported saving of up to Rs 1,257 crores with an average payback period of 21 months, apart from environmental benefits, including a reduction in greenhouse gas emissions, annual savings of 256 million units of energy, and conservation of up to 183 million kilolitres of water.

14TH CONFERENCE OF PARTIES (COP14) OF THE UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION (UNCCD)

On the sidelines of the 14th Conference of Parties (COP14) of the United Nations Convention to Combat Desertification (UNCCD), hosted by the Government of India, the United Nations Industrial Development Organization (UNIDO) convened for the United Nations Country Team in India a panel discussion on innovations in the Water Energy Food (WEF) nexus, with participation of UNCCD, Food and Agriculture Organization (FAO), United Nations Development Programme (UNDP), International Solar Alliance (ISA) and select knowledge institutions and innovators.

In his keynote remarks, Pradeep Monga, Deputy Executive Secretary, UNCCD stated that land connects water, energy and food systems. While land is finite it is imperative to increase food production by some 70% and freshwater by some 40-50% to meet the needs of a 10 billion global population by mid-century. “Investing in land restoration makes economic sense, as studies consistently show a return of USD5-7 per every USD 1 invested in land restoration and 10 ha restored land creates at least two direct jobs and possible indirect jobs”. Moreover, he emphasized that the present COP14 marks the 25th anniversary of the Convention and is set to elaborate further on synergies with the other two Rio Conventions, respectively United Nations Framework Convention on Climate Change (UNFCC) and United Nations Convention on Biodiversity (UNCBD).
BEE MSME ENERGY SUMMIT -2019

On September 2019, United Nations Industrial Development Organization (UNIDO) and the Bureau of Energy Efficiency co-organized a two-day National Conclave on Enhancing Energy Efficiency in Micro, Small and Medium Enterprise (MSME) sector, which was jointly inaugurated by Minister for MSME, Road Transport and Highways Nitin Gadkari and Minister of State for Power and New and Renewable Energy R.K. Singh, with Gadkari stressing the importance of energy efficiency and biomass, and Singh suggesting further work on energy benchmarking and labelling.

“Many good examples of energy efficiency in both small and large industries exist, such as the transformational change enabled for the Thangadh ceramic cluster under the UNIDO-BEE project on energy efficiency and renewable energy that is supported by the Global Environment Facility”, said UNIDO Representative for India Rene Van Berkel. “Energy efficiency needs greater focus, speed and scale to reduce energy use, costs and import dependency; to improve productivity to be able to compete in domestic and international markets; and to secure a liveable climate in decades to come”.

Awards were presented to energy innovators, including three winners under the Facility for Low Carbon Technology Deployment Programme – another UNIDO-BEE project funded by GEF: Inficold demonstrated an innovative energy storage based instant milk chiller, which improves milk quality while avoiding investment and use of diesel generators; Promethean Energy proofed innovative system to capture waste heat for production of hot water for use in cleaning in place systems in milk chilling centres; and Shakti Pumps demonstrated innovation in pump and motor design to significantly reduce power consumption in water pumping.
UNIDO with InvestIndia and the Department for Promotion of Industry and Internal Trade, Government of India, organized a roundtable dialogue on November 2019 on the topic of “Manufacturing for India@75”. The roundtable brought together Ministers of State, senior government officials and captains of industry to reflect on strategies and challenges towards creating a USD1 trillion Indian manufacturing sector.

Mr Philippe Scholtes, UNIDO Managing Director (Programme Development and Technical Cooperation), shared findings of UNIDO’s most recent flagship report Industrialising in digital age. “UNIDO’s findings put India in group of immediate followers for adopting Industry 4.0, along with others like Australia, Canada, Italy and Spain”.

During the Ministerial Segment, Honorable Arjun Meghal, Minister of State for Heavy Industry and Public Enterprises, addressed the challenges for Industry 4.0 and highlighted the importance of unlocking potential at local level through One District One Product development model. Honorable Rameswar Teli, Minister of State for Food Processing Industry, stressed on the importance to develop food processing sector at all scales – through mega food processing parks as well as village based production clusters to facilitate regional development, improve nutrition and reduce wastage. Honorable Som Parkash, Minister of State for Commerce and Industry, stressed that accelerated manufacturing sector growth will require a focus on quality, costs and supply chains, enabled by skilled workforce and robust industrial and logistics infrastructure.

UNIDO participated in the high level panel of Bengal Business Conclave 2019, organized in December 2019 in Digha, West Bengal.

Speaking at Bengal Business Conclave, an investor summit, in the coastal town of Digha, Dr. Rene Van Berkel, UNIDO representative in India said the Eastern part of India and Bengal in particular, has potential to reduce unemployment through promoting MSME sector. The two-day conclave was attended by delegates from 28 countries like Bangladesh, Bhutan, UK, Poland, US, Australia, Thailand, Russia, Italy and China among others. Industrialists like Harsh Neotia, Y K Modi, Rudra Chatterjee, Mayank Jalan, Sanjay Budhia and others also attended the conclave.
PROJECT ACTIVITY SUMMARIES

UNIDO had 14 active projects in India in 2019. 12 continued from 2018, of which one was concluded in 2019, and two new projects were started, with total of 8 central government entities (DPIIT, DHI, DST, MoMSME, MNRE, MoEFCC, MoHUA and BEE). UNIDO worked with these government partners, state governments along with non-state actors such as industries associations and contributed in building the below three pronged impacts in India.

Firstly, UNIDO partnered with DPIIT and DHI for building ‘Productive and Resilient MSMEs’. As part of its commitment to the SDGs 9, 7, 13; UNIDO also partnered with MOEFCC, MNRE, BEE, MoHUA and provided solutions for climate, environment and resource efficiency. Further, UNIDO provided strategic policy support and advisory for ensuring industrial transformation in the country (See Figure below).

- Firm level demonstrations of appropriate technology and productivity methods in paper sector (DPIIT)
- UDAY PRIDE Productivity & innovation in automotive components sector (DHI)
- Development and adoption of appropriate technologies for enhancing productivity in the Indian bicycle and bicycle parts sector
- Energy efficiency in MSME Clusters (BEE)
- Market transformation energy efficiency (MSME)
- Facility for low carbon technology deployment (BEE)
- Solar thermal for process heat (MNRE)
- Organic waste to energy (MNRE)
- PCB management and destruction (MoEFCC)
- Biomedical waste management (MoEFCC)
- Alternatives to DDT (MoEFCC)
- Sustainable cities (MoHUA)

The following summarizes the main UNIDO engagements in the country with government, business, industry and civil society during the year. This is complimented by project specific activity summaries.
KEY RESULTS AREA: PRODUCTIVE AND RESILIENT MSMEs
FIRM LEVEL DEMONSTRATIONS OF APPROPRIATE TECHNOLOGY AND PRODUCTIVITY METHODS IN PAPER INDUSTRY

The primary beneficiaries of the project are pulp and paper mills, spread across the country.

ACHIEVEMENTS IN 2019

Project commencement meetings were organized with the senior management of the Central Pulp & Paper Research Institute (CPPRI) and the national-level industry associations. Preliminary technical specifications of the two pilot demonstration units were prepared in consultation with CPPRI and national and international technology experts. Also, development of industry specific audit tool to assess selected mills was started. This will be used to identify and implement the PEMs in paper mills.

4 sensitization workshops were conducted, covering the 4 major paper industry clusters, in Kolkata, Ludhiana, Vapi and Coimbatore in October 2019 with participation from various stakeholders of the Indian paper industry.

A mission to Sweden and Finland was organized (in November 2019) for detailed consultations with international technical institutions and technology suppliers, such as RISE Innventia(Sweden), IVL Swedish Environmental Research Institute, Valmet Technologies (Finland) and the Tampere University of Technology (Finland), to seek inputs towards the technology demonstration units and productivity enhancement measures.

PROJECT SUMMARY

The project aims to contribute to enhancing the productivity and competitiveness of the Indian pulp and paper industry. The project approach comprises primarily two types of interventions at the firm-level:

- Process optimization through productivity enhancement measures (PEMs): implementation and demonstration of shop-floor interventions in paper mills to enhance productivity and production efficiency through: optimization of process parameters pertaining to technical aspects of paper production and; adoption of advanced manufacturing and productivity methods and tools.

- Demonstration of innovative technologies: pilot-level demonstration of two technologies at paper mills: Membrane filtration- to facilitate maximum recycling of treated process water by treating paper mill effluents and; Black liquor heat treatment- to improve the energy efficiency of the chemical recovery system.

The primary beneficiaries of the project are pulp and paper mills, spread across the country.

Sensitization workshops held in Kolkata (October 2019)

Visit to pilot facility of IVL Swedish Environmental Research Institute (Nov 2019)
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 (PHASE II)

More than 85 companies (in 15 clusters) all over India participated in the programme in 2019.

Digitization of Ongoing Business Process & Data Archival of Clusters via Uday Pride web Portal is completed.

Uday-Pride consultation workshop was organized on 15 November 2019 in the august presence of Mr. Pravin Agrawal, Joint Secretary, DHI. The full day consultation workshop aimed to assess the project’s progress, gathering feedback from National and International experts to ensure maximum impact.

The objective of this project is to facilitate the building of competency and capability of automotive component manufacturers. The expected outcome of this project is improved productivity and innovation of automotive component manufacturers through application of world class techniques in selected manufacturers and improvement of the industry’s business support ecosystem.

The project supports small and medium-sized manufacturers in the automotive component industry in India and enable them to achieve the following inter-related outputs:

- Increase the availability and applicability of productivity improvement and innovation enhancement methods and tools and capacity of ACMA counsellors for automotive component manufacturers.
- Improve productivity of selected supplier companies through adoption of continuous improvement techniques through counselling (target 225 component manufacturers) and skills development through e-learning (50 component manufacturers).
- Improve the sector ecosystem for better delivering innovation and business support to the automotive sector for automotive supply chain development and innovation.

PROJECT SUMMARY

BUDGET
USD 1,968,008

PROJECT PERIOD
Jan 2019 - Dec 2021

STATUS
Ongoing

DONOR
Department of Heavy Industry, Government of India

LINE MINISTRY
Department of Heavy Industry, Government of India

ACHIEVEMENTS IN 2019

- More than 85 companies (in 15 clusters) all over India participated in the programme in 2019.
- Digitization of Ongoing Business Process & Data Archival of Clusters via Uday Pride web Portal is completed.
- Uday-Pride consultation workshop was organized on 15 November 2019 in the august presence of Mr. Pravin Agrawal, Joint Secretary, DHI. The full day consultation workshop aimed to assess the project’s progress, gathering feedback from National and International experts to ensure maximum impact.
DEVELOPMENT AND ADOPTION OF APPROPRIATE TECHNOLOGIES FOR ENHANCING PRODUCTIVITY IN THE INDIAN BICYCLE AND BICYCLE PARTS SECTOR

The project aimed to strengthen the capacity and capability of the Research and Development Centre for Bicycle and Sewing Machine (RDCBSM), the All India Cycle Manufacturers’ Association (AICMA) and the United Cycle & Parts Manufactures Association (UCPMA) to provide management and technical support to the Indian bicycle sector with a view to strengthen its global competitive position. The modalities of implementation included comprehensive upgrading of capabilities of the R&D Centre and the industry associations through both, soft interventions (technical workshops, fellowship training, study tours, twinning) and hard interventions (procurement of equipment for the testing facility of RDCBSM).

All the interviewed stakeholders emphasized the high relevance of the project, for the bicycle sector. The project was designed to address some crucial issues which the bicycle and bicycle parts industry is faced with and met the needs of the target group, and was consistent with the country’s, and therefore donor’s priorities and in line with the National Manufacturing Policy (2011).

- Ms. Suman Lederer, International Evaluation Consultant

**ACHIEVEMENTS IN 2019**

Following capacity building interventions were implemented: 3 technical workshops (topics- Material behaviour and failure analysis; Finite element analysis and; Entrepreneurial competencies), 1 hands-on training programme (topic- Bicycle assembly), 2 fellowship training programmes (topics- Bicycle testing (conducted at EFBE Pruftechnik GmbH, Germany for 3 officials from RDCBSM) and E-bikes (conducted by the Light Electric Vehicle Association (LEVA), USA for 10 officials from RDCBSM and 4 representatives from industry units).

Twinning of RDCBSM and industry associations were facilitated for increased institutional linkages with leading international organizations. Towards this, the following joint declarations were signed: RDCBSM and the EFBE Pruftechnik GmbH (Germany); RDCBSM and the Light Electric Vehicle Association (USA); RDCBSM and the Kunshan Products Safety Inspection Institute (China); RDCBSM, AICMA and the National Association of Two Wheelers Industries, Hardware, Furniture and Related Products (Portugal); AICMA, UCPMA and Confederation of the European Bicycle Industries; AICMA and the European Cyclists’ Federation (Belgium).

Operationalization of facilities for testing as per RoHS (Restriction of Hazardous Substances)/ REACH (Registration, Evaluation, Authorization and restriction of Chemicals) directives at RDCBSM. This facility will support manufacturers in meeting compliance requirements for exports to the European markets. It included procurement, installation and commissioning of an Optical Emission direct-reading Spectrometer. Further, a 3D printer was procured and installed at RDCBSM for enhanced prototyping support to manufacturers.

A final evaluation of the project was conducted, which highlighted that the project was considered highly relevant by all stakeholders interviewed and that the project’s interventions were a highly relevant step for the growth and development of the Indian bicycle industry. The project was operationally completed on 30 November 2019.
Through the project, we have been able to interact with experts from USA, Germany, Portugal, Belgium, Italy, China and Japan. [...] The test labs, associations, companies and other organizations we have interacted with provided us comparable examples of how these entities are supporting the industry in their respective countries and how this could be adapted in the Indian context. In addition, the project has also resulted in new services offered and revenue generation channels for RDCBSM.

The project trained RDCBSM and industry personnel in the main aspects and components of e-bikes, certified selected personnel to deliver e-bike training programmes to industry personnel and also provided some basic e-bike testing tools. Such support will contribute towards producing and assembling quality e-bikes in India.

- Mr. H.S. Bains, General Manager, RDCBSM

Setting up of testing equipment during the LEVA fellowship training on e-bikes (February 2019)

Workshop with EMPRETEC on entrepreneurship in bicycle sector
KEY RESULTS AREA: SOLUTIONS FOR CLIMATE, RESOURCES & ENVIRONMENT
ORGANIC WASTE STREAMS FOR INDUSTRIAL RENEWABLE ENERGY APPLICATIONS IN INDIA

The consultation workshop of key project stakeholders was held to deliberate and identify specific areas of innovations in biogas waste-to-energy which are cutting-edge, sustainable, replicable and have maximum GHG emission reduction potential.

The International Training cum Study Tour to the biogas and waste-to-energy plants in Europe (Austria, Czech Republic, Germany and Sweden) 14 to 21 July 2019 organized by UNIDO was completed successfully. The delegation of members from the Ministry of New and Renewable Energy (MNRE), the State Nodal Agency (SNA), the Indian Renewable Energy Development Agency (IREDA) and representatives of Indian biogas industries gained insight of how issues relating to technology feasibility (overcoming technological barriers), sustainable operations and monitoring of the installed systems (O&M issues) and financial arrangements to make the bio-methane technologies for conversion of organic wastes to energy attractive to industry.

The Indian Renewable Energy Development Agency, a Mini Ratna (Category – I) Government of India Enterprise under the administrative control of Ministry of New and Renewable Energy (MNRE), is appointed as fund manager by UNIDO to manage 1.7 million US dollar fund exclusively allocated for providing loan interest subvention to the selected innovative waste-to-energy demonstration projects.

PROJECT SUMMARY

The project aims to contribute to reduction of Greenhouse Gas (GHG) emissions by promoting investment in renewable energy technologies that transform the market for using organic waste for industrial energy applications in MSMEs in India. The project focuses on the application of bio-methanation technology (also known as biogas or anaerobic digestion), which can cater to a wide range of applications like power generation, fuel for heating and automobiles and generates potentially valuable by-products such as organic manure/fertilizer, sulphur, carbon dioxide etc. The project works towards:

- Strengthening policy and institutional framework
- Demonstration of most relevant financially feasible technologies in selected sectors
- Increase use of technologies in organic waste to energy applications in industry
- Capacity building of private and public stakeholders

BUDGET
USD 3,663,000

PROJECT PERIOD
Apr 2015 - Apr 2020

STATUS
Ongoing

DONOR
Global Environment Facility (GEF)

LINE MINISTRY
Ministry of New and Renewable Energy (MNRE), Government of India

ACHIEVEMENTS IN 2019

Impressions from study tour in Europe

Site visit to the Biomass Power Generation Sites in Germany

UNIDO Operations in India | Annual Report 2019
ENVIRONMENTALLY SOUND MANAGEMENT AND FINAL DISPOSAL OF PCBS IN INDIA

BUDGET
USD 15,510,000

PROJECT PERIOD
January 2010 – December 2020

STATUS
Ongoing

DONOR
Global Environment Facility (GEF)

LINE MINISTRY
Ministry of Environment Forest, and Climate Change (MoEFCC), Government of India

PROJECT SUMMARY

The project addresses national priorities for improved legislation on POPs chemicals specifically to eliminate PCB-containing equipment, to reduce PCBs (Poly Chlorinated Biphenyl) 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 of PCBs disposal management;
- Removal of 7,700 tons 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

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

ACHIEVEMENTS IN 2019

Mobile PCB treatment plant is fully operational and stocks of low-level PCBs are being treated onsite at power distribution and other transformer locations– 105 MT contaminated oil treated on site

Civil construction of the static PCB treatment facility is completed. Ongoing construction of two static facilities (BSP-SAIL) – civil and engineering works completed, all main equipment now at site

800 samples of transformer oil tested on PCBs. PCB inventory updated with 600 Mt

Awareness raising training programmes organised for the PCBs owners mainly from the power sector (generating and distribution institutions)
DEVELOPMENT AND PROMOTION OF NON-POPS ALTERNATIVES TO DDT

PROJECT SUMMARY

India is the only country remaining that still produces, uses 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 remains effective to combat the mosquitoes menace. Hence, there is an urgent need to develop a phase-out strategy of DDT in the country. This project adopts holistic and country-wide approach to establishing viable alternatives for protection against malaria and other mosquito transferred diseases. The present project attempts to combat mosquitoes at different critically weak points in their life cycle through the introduction of bt-based biopesticides and neem-based botanical pesticides and further reinforcing with Long Lasting Insecticidal Nets (LLIN) impregnated bed nets with synthetic pyrethroids as the final barrier. Through this three-pronged approach, the mosquitoes in its larval stage would be controlled through application of Bt based and neem based biopesticides which are very effective to kill the larvae but safe to other aquatic animals and human beings. Any escape of larvae from the Bt and neem targeted interventions, that result in becoming adult would be checked through the use of LLIN barrier which are impregnated with synthetic pyrethroid chemical pesticides. This application would be synergised with the use of neem-based pesticides against adults and other stages of the mosquitoes life cycle as neem is found effective as adulticide, larvicide, growth regulator resulting in long lasting effect on the mosquitoes population.

ACHIEVEMENTS IN 2019

- **Commercial level manufacturing plant** for Long Lasting Insecticidal Net (LLIN) Plant installed and is being commissioned at HIL(India) Ltd. Rasayani Unit, Maharashtra
- **Five Neem based pesticides** formulations developed and scaled up to pilot level.
- HIL has agreed to **scaling up to commercial level** production of neem-based pesticide through transfer of technology developed by IPFT.
- **Bt based bio-pesticide** formulations developed.
- **Germplasm of Neem** high yielding new cultivars identified and plantation using clonal propagation and tissue culture established at NBRI.

BUDGET

USD 9,130,000

PROJECT PERIOD

Jun 2015 - Jun 2020

STATUS

Ongoing

DONOR

Global Environment Facility (GEF)

LINE MINISTRY

Ministry of Environment Forest, and Climate Change (MoEFCC), Government of India
ENVIRONMENTALLY SOUND MANAGEMENT OF MEDICAL WASTES IN INDIA

The project is aimed at reducing unintentionally produced Dioxins and Furans (ranked as Persistent Organic Pollutants (POPs)) by efficient and environmentally sound management of biomedical waste and assist India in implementing its relevant obligations under the Stockholm Convention. It is being implemented in five states (Maharashtra, Gujarat, Karnataka, Odisha and Punjab). 28 Hospitals (4 large, 8 medium and 16 small) in each state have been taken up for study and capacity building under the project. One model district in each state has been identified for establishment of integrated biomedical waste management system. One Common Biomedical Waste Treatment Facility (CBMWTF) in each of the five model districts has been identified for up-gradation and augmentation for better medical waste treatment. Best Available Technique (BAT) (non-incineration technology) based on micro-waving is being promoted and demonstrated. Medical and paramedical curriculum is being developed and rolled out to incorporate the medical waste management basics.

ACHIEVEMENTS IN 2019

- **Bio-medical Waste Management (BMWM) Rules** was revised and the BMWM (Amendment) Rules, 2018 was implemented.

Creating an enabling healthcare environment: Infrastructure strengthening

- A total of 168 Health Care Facilities have been directly benefitted from the project
- 5402 sets of bins of each Red, Yellow, Blue, White and Green Bins and 778 waste collection trolleys were supplied to the project.

Model districts supported in Nashik (Maharashtra), Ludhiana, (Punjab), Mysore (Karnataka) and Kurda (Odisha).

Completed installation of 20 microwaves

Awareness raising training programmes: In support for proper execution of the waste segregation, collection, transport, storage and treatment, the project developed guidance and training materials, which are accessible online (https://www.biomedicalwastemanagementinindia.in/) and include job specific training packages, (https://www.biomedicalwastemanagementinindia.in/training_manuals.html) and Standard Operating Practices (SOPs) (https://www.biomedicalwastemanagementinindia.in/sops.html) as well as instructional videos (https://www.biomedicalwastemanagementinindia.in/videos.html).
PROMOTING MARKET TRANSFORMATION FOR ENERGY EFFICIENCY IN MICRO-, SMALL- AND MEDIUM ENTERPRISES (MSMES)

A technology dissemination workshop for demonstration of Energy efficiency technologies at Surat textile cluster in partnership with South Gujarat Textile Processors Association was organised on 22nd May 2019. The workshop was attended by more than 80 MSME units.

2 MSME units for demonstration of one approved technology (screw compressor) have been identified in Surat textile cluster.

Project demonstrations were launched during MSME Cluster Conclave in presence of Hon Minister MSME on 6th February 2019, including signature of framework agreements with four cluster associations.

Around 27 technologies are identified in all the clusters out of which 13 were reviewed during 2nd WTG on 26 April 2019, and 9 thereof were endorsed.

More than 709 surveys have been completed in all the identified ten clusters and 74 energy audits have been completed.

Procurement of 500 PLC based automation system for jet dying machine

Two Agreements were signed for implementation of LSU dryer technology for Vellore rice mill cluster.

Workshop was organized in the Ankleshwar chemical cluster on September 2019 for finalizing the technologies for the cluster.
The project aims to develop and promote a market environment for introducing Energy Efficient (EE) technologies and enhancing the use of Renewable Energy (RE) technologies in process applications in 5 sectors (ceramic production, hand tool production, foundries, brass production, and dairy production), currently in 12 MSME clusters. The project further envisions scaling up the activities to a national level (including a further 11 MSME clusters from ceramics, dairy and foundry sectors) in order to reduce energy usage per unit of product, improve the productivity and competitiveness of units, thereby reducing the overall carbon emissions and improving the local environment. The project works at cluster levels, as well as, policy level to achieve its aim with the following components:

- Increase capacity of suppliers of Energy Efficiency/ Renewable Energy product suppliers/ service providers/ finance providers;
- Scale up of the project to a national level;
- Strengthen policy, institutional and decision-making frameworks.

**ACHIEVEMENTS IN 2019**

The project has worked so far to increase the uptake of energy efficient and renewable energy technologies in 12 MSME clusters in India from five sectors, respectively: Brass (Jamnagar); Ceramics (Khurja, Thangadh and Morbi); dairy (Gujarat, Sikkim and Kerala); Foundry (Belgaum, Coimbatore and Indore); and hand tools (Jalandhar and Nagaur).

Outcomes/achievements:

- **300 units** were surveyed in 12 clusters;
- **90 Energy Audits** (EA) have been completed;
- **10 big investment projects** and 400 small-scale energy efficiency improvements have been implemented by industries with the help of cluster leaders;
- **35 workshops** on Best Operating Practices and Common Monitorable Parameters have been completed;
- More than **220 Detailed Project Reports** (DPRs) have been prepared and out of this around 60 DPRs are already implemented and remaining are under implementation;
SUSTAINABLE CITIES INTEGRATED APPROACH PILOT – INDIA

The project aims to integrate sustainability strategies into urban planning and management to create a favourable environment for investment in infrastructure and service delivery, thus building the resilience of pilot cities. The general framework of the project is organized into four components:

- Sustainable Urban Planning and Management (in partnership with UN Habitat)
- Investment Projects and Technology Demonstration
- Partnership and Knowledge Platform
- Monitoring and Evaluation

The project is expected to reduce cities’ greenhouse gas emissions (through investment projects and low-emission and environmentally sound technology demonstration), to increase scope and depth of integrated urban sustainability management policies and processes, including institutionalization within the local governance structure; and facilitate partnerships for implementation of sustainable cities.

The project entails the Indian child-project under the global parent GEF project on Sustainable Cities, implemented in parallel by World Bank and UNIDO in cities in different developing countries, and supported by Global Platform for Sustainable Cities (managed by the World Bank, https://www.thegpsc.org/).

The Indian pilot is implemented by UNIDO with inputs from UN Habitat and covers five pilot cities; Jaipur, Mysore, Vijayawada, Guntur and Bhopal. These represent the diverse urban environment of India, owing to their geographical spread and differences in economic development status.

This project is aligned with Government of India’s programs on waste management, one of which is the Swachh Bharat (Clean India) Mission.

BUDGET
USD 13,200,000

PROJECT PERIOD
April 2017 - April 2022

STATUS
Ongoing

DONOR
Global Environment Facility (GEF)

LINE MINISTRY
Ministry of Housing and Urban Affairs (MoHUA), Government of India

PROJECT SUMMARY

The project entails the Indian child-project under the global parent GEF project on Sustainable Cities, implemented in parallel by World Bank and UNIDO in cities in different developing countries, and supported by Global Platform for Sustainable Cities (managed by the World Bank, https://www.thegpsc.org/).

The Indian pilot is implemented by UNIDO with inputs from UN Habitat and covers five pilot cities; Jaipur, Mysore, Vijayawada, Guntur and Bhopal. These represent the diverse urban environment of India, owing to their geographical spread and differences in economic development status.

This project is aligned with Government of India’s programs on waste management, one of which is the Swachh Bharat (Clean India) Mission.

Zero Waste Management Plant operated in Ward 28 in Mysuru - professor Er. V. Jagannatha presenting waste segregation results to UNIDO representatives

Representative of UNIDO, Mr. Nand Pal Singh addressing the Commissioner and city officer about SCIAP project status and progress at Bhopal

ACHIEVEMENTS IN 2019

Established partnership with the UN-Habitat on sustainable city planning and management. Mapping of relevant stakeholders at city and state level is being carried out for the inclusive decision-making process for every activity in the city. Identification of relevant indicators based on National and International framework for developing sustainable and resilient strategies for pilot cities as well as develop city diagnostic report detailing the current level of city performance against indicators relevant for sustainable city development.
For the technology demonstration project, confirmed Detailed Project Report scopes for organic waste to energy and composting plant. For the sewerage treatment plant with potential usage of biogas generated for productive use in Vijayawada and Jaipur, the DPR is being reviewed for finalizing the scope of work and project elements that would be supported by UNIDO.

Partnership and knowledge management platform focuses on enabling IT services and capacity building. For the IT service, UNIDO has engaged with a private technology service provider to integrate existing web and mobile-based platforms as a result of several interventions of Swachh Bharat Mission. There’s a need to encapsulate all ICT components under one umbrella to strategically align them for monitoring and optimizing the financial resources. This platform will include GHG inventory and monitoring emission levels in various sectors through standardized online forms and measure city sustainability performance against service level benchmark and compare various KPIs with peer cities. This is first-ever national-level knowledge dissemination platform being carried out through UNIDO’s technical and financial assistance.

Partnership agreement with National Institute for Urban Affairs in regard to training and capacity building of urban local bodies.
PROMOTING BUSINESS MODELS FOR INCREASING PENETRATION AND SCALING UP OF SOLAR ENERGY

The project aims to reduce greenhouse gas emissions through the use of Concentrating Solar Thermal (CST) technologies for process heating and cooling applications in industries. It is designed to complement the support programme of the Ministry of New and Renewable Energy (MNRE), Government of India by helping to remove barriers associated with CST technology, its awareness, capacity building, market and financial barriers. In addition, the project aims to provide technology application information packages and standardization of CST system performance measurement.

Reduction of industrial CO2 emissions is a specific challenge, and requires changes to not only provide power from sustainable sources, but often even more so on the heating and cooling needs forming part of the industrial and commercial processes. Despite the potential, the use of Renewable Energy (RE) for heating and cooling applications has remained limited so far in the country.

The heating and cooling demands in the industrial processes can be successfully met through solar energy. A recently prepared Roadmap 2020 for CST in India, UNIDO estimated the total industry technical potential of CSTs is 13.18 GWth. India had 208 CST projects installed till March 2017 covering a collector area of about 80,000 m² (approx. 52 MW of thermal energy) with majority of systems used for community cooking.

The project targets to achieve:
- 45,000 square meter of CST based systems installed through demonstration projects resulting to 39,200 tonnes of Carbon Dioxide emission reduction.
- Knowledge documents & standardisation of performance measurement developed with barriers removed for large scale promotion of CST Technology.

Development of innovative financial model in partnership of Indian Renewable Energy Development Agency (IREDA) and MNRE:
The scheme has been developed jointly with IREDA and MNRE. IREDA has been formally integrated as the fund manager to the project, and supports the beneficiaries by bundling the MNRE’s subsidy and the soft loan, thereby providing upfront access to 75% of CST project cost. The scheme also promotes manufacturing of indigenous CST components.

Awareness campaign (State level workshops) and preparation of pipeline of demo CST projects: The national dissemination workshop on CST was conducted on 23rd August 2019.

The project has conducted 19 workshops and 18 site visits. The workshops were organized in 13 states namely Uttarakhand, Himachal Pradesh, Gujarat, Karnataka, Madhya Pradesh, Tamil Nadu, Maharashtra, West Bengal, Uttar Pradesh Rajasthan, Andhra Pradesh, Punjab and Pondicherry. In The workshops were attended by about 1,700 participants. The campaign helped the PMU build a pipeline of projects that would be supported under the project.

MoU for association with National Institute of Solar Energy (NISE) for capacity building to initiate skill development activities was signed in 2019.
The Facility for Low Carbon Technology Deployment project aims to facilitate the adoption of low-carbon technologies across the Indian industrial sector, in particular for waste heat recovery, space conditioning and (irrigation) pumping. 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. Over 2018 and 2019, the project has identified 30 innovative solutions across the FLCTD technology verticals and has earmarked grant support to the tune of USD 1.73 million.

**ACHIEVEMENTS IN 2019**

- **Completed commissioning** of technology demonstration of 11 innovations identified in 2018 Innovation Challenges at several industrial, agricultural and other field locations.
- FLCTD conducted the **2nd Innovation Challenge** and selected 17 innovative solutions.
- Launched the **FLCTD Accelerator programme** to benefit who have promising innovations but need business mentoring support, with the first cohort that has 15 participants.
- Launched the **Financial due-diligence and Fundraising support programme** for winners who have successfully demonstrated their technologies and are ready to scale-up.

**FLCTD is supporting the technology demonstration of Kethworks portable solar pumps under the 2018 Innovation Challenge. These 0.3 hp pumps run on 320 W solar panels and give up to 15 m head and weigh less than 4 kg. Kethworks expects the pumps to offer smallholding farmers especially in regions with shallow water bodies where grid-access is poor to achieve fuel independence and increased income generation opportunities.**

- *Kethworks, Pune*

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**PROJECT SUMMARY**

- **BUDGET** USD 9,539,999
- **PROJECT PERIOD** February 2016 – February 2021
- **STATUS** Ongoing
- **DONOR** Global Environment Facility (GEF)
- **LINE MINISTRY** Bureau of Energy Efficiency (BEE), Government of India

**FLCTD conducts annual innovation challenges to shortlist promising low carbon technologies in the following 3 thematic areas:**

- Waste Heat Recovery
- Space Conditioning
- Pumps & Pumping Systems
KEY RESULTS AREA: STRATEGIC POLICY FOR INDUSTRIAL TRANSFORMATION
INTERNATIONAL CENTRE FOR INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT (IC-ISID)

**BUDGET**
USD 1,035,853

**PROJECT PERIOD**
2015 - 2020

**STATUS**
To be completed in 2020

**DONOR**
Department for Promotion of Industry and Internal Trade (DPIIT), Government of India

**LINE MINISTRY**
Department for Promotion of Industry and Internal Trade (DPIIT), Government of India

**PROJECT SUMMARY**

The project for an International Centre for Inclusive and Sustainable Industrial Development (IC-ISID) was launched in 2015 and aimed to facilitate and foster progress towards Inclusive and Sustainable Industrial Development (ISID), particularly through enhanced national and international technology partnerships and technology transfer (to, within and from India). During 2015-2019 IC-ISID successfully conducted projects cycle management functions (identification, formulation, stakeholders’ and partner engagements, steering and execution support and post project promotion), for ISID focused technical cooperation projects in particular for paper, cement, leather and bicycle sectors in India and for promoting Indian technology-led solutions.

These projects have also strengthened capacities of technical institutions and industry associations and laid foundation for further international technology transfer and cooperation partnerships.

**ACHIEVEMENTS IN 2019**

In 2019, IC-ISID started implementing two new projects:

i) Paper (phase 2), with the support of DPIIT: building on the achievements of the previous Paper project and expanding the scope to include pilot demonstrations of technologies (black liquour heat treatment and membrane separation) in 4 clusters in India; with the support of DPIIT (started in August 2019)

ii) India Innovation and Innovation Systems Survey, with the support of DST (started in December 2019). This innovation and innovation systems survey to identify practical ways to improve innovation in particular in manufacturing and related industry sectors.

In the advocacy front, IC-ISID organised roundtable dialogue on “Manufacturing for India@75” with Invest India and the Department for Promotion of Industry and Internal Trade, Government of India. The roundtable brought together Ministers of State, senior government officials and captains of industry to reflect on strategies and challenges towards creating a USD1 trillion Indian manufacturing sector.

Under the aegis of IC-ISID, UNIDO also developed technical cooperation projects, specifically for leather and paper sectors and on Industry 4.0 as well as strengthen the current engagement with government and industry on ISID topics, including for example Smart Manufacturing Summit and GreenCo Summit (with Confederation of Indian Industries-CII), Special Economic Zones Summit and Launch of Manufacturing Barometer (with Federation of Indian Chambers of Commerce & Industry-FICCI) and contributed in state investment summits in Gujarat, Punjab and West Bengal.
INDIA INNOVATION AND SYSTEMS SURVEY 2019

**BUDGET**
USD 1,331,705

**PROJECT PERIOD**
November 2019 – June 2022

**STATUS**
Ongoing

**DONOR**
Department of Science and Technology (DST), Government of India

**LINE MINISTRY**
Department of Science and Technology (DST), Government of India

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**PROJECT SUMMARY**

The objective of the project is to assist DST in developing an analytical framework for measuring firm-level innovation and the National System of Innovation (NSI) by collecting data from firms and NSI actors, as a follow up of the first Indian innovation survey conducted by DST in 2011. The expected outcomes are:

- Enhanced understanding of the private sector innovation capabilities and capacities and the innovation support infrastructure (system of innovation)
- Enhanced innovation performance by Indian firms

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As the project commenced in the last month of calendar year 2019, the [preparatory work](#) was undertaken towards 2020 workplan. These include the adaptation (to Indian firm level context) of the UNIDO’s questionnaires for respectively assessing firm level innovation capability and for assessing the system of innovation, as well as establishing necessary databases and sampling frameworks and initial sensitization of partner institutions.

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Launch of the Innovation Survey project by Secretary-DST and MD-UNIDO (Nov 2019)
OUTLOOK AND STRATEGIC DIRECTIONS - 2020

UNIDO COUNTRY PROGRAMME 2018-22

signed by
DPIIT, Ministry of Commerce and Industries
on 30 July 2019

Aim:
Initiate and facilitate the transition towards inclusive and sustainable industrial development in India

IC-ISID PLANS TO:

- Commence a flagship initiative to develop and pilot a district level model for promotion of inclusive and sustainable industrial development (including through One District One Product approach)
- Start implementation of national leather project
- Start readiness project on Industry 4.0 for select manufacturing sectors
- Renew its mandate and funding base by mid-2020

UNIDO PLANS TO:

- Inaugurate Asia’s largest PCB destruction facility (located at Bilhai Steel Plant of SAIL) and release the first Long Lasting Insecticidal Nets.
- Close the project on biomedical waste management, with extensive outreach in particular in the five pilot states (Gujarat, Karnataka, Maharashtra, Odisha and Punjab).

MSME DOMAIN

- UNIDO will work to scale up energy efficiency initiatives at cluster level, and support DC MSME with preparation of an energy security initiative.
- It is also foreseen that the first pilot projects using Concentrating Solar Thermal will become operational in hospital and pharma sectors.

Moreover, UNIDO will support cleantech deployment pilots for a further 17 innovations for space conditioning, pumping and heat recovery, whilst also expanding the initiative to such potential areas as industrial IoT and resource efficiency.
UNIDO REGIONAL OFFICE IN INDIA

The UNIDO Regional Office in India is directly responsible for India, Bhutan, Maldives, Nepal and Sri Lanka and coordinates the UNIDO Country Offices in Afghanistan and Bangladesh. The Regional Office is led by the UNIDO Representative.
## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ACMA</td>
<td>Automotive Component Manufacturers Association of India</td>
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<tr>
<td>BAT</td>
<td>Best Available Techniques</td>
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<tr>
<td>BEE</td>
<td>Bureau of Energy Efficiency</td>
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<tr>
<td>BEP</td>
<td>Best Environmental Practices</td>
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<tr>
<td>BSP</td>
<td>Bhilai Steel Plant</td>
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<td>CBWTF</td>
<td>Common Biomedical Waste Treatment Facilities</td>
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<tr>
<td>CII</td>
<td>Confederation of Indian Industries</td>
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<td>CP</td>
<td>Country Programme</td>
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<td>CPRI</td>
<td>Central Pulp &amp; Paper Research Institute</td>
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<td>CST</td>
<td>Concentrated Solar Thermal</td>
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<td>DC</td>
<td>Development Commissioner</td>
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<td>DDT</td>
<td>Dichloro Diphenyl Trichloroethane</td>
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<td>DG</td>
<td>Director General</td>
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<td>DPIIT</td>
<td>Department for Promotion of Industry and Internal Trade</td>
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<td>EE</td>
<td>Energy Efficiency</td>
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<td>EESL</td>
<td>Energy Efficiency Services Limited</td>
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<td>FICCI</td>
<td>Federation of Indian Chambers of Commerce and Industry</td>
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<td>GEF</td>
<td>Global Environment Facility</td>
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<td>GHG</td>
<td>Greenhouse Gas</td>
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<td>GoI</td>
<td>Government of India</td>
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<td>IC-ISID</td>
<td>International Centre for Inclusive and Sustainable Development</td>
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<td>RE</td>
<td>Renewable Energy</td>
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<td>RENPAP</td>
<td>Regional Network on Pesticides for Asia and the Pacific</td>
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<td>RO</td>
<td>Regional Office</td>
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<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>IREDA</td>
<td>Indian Renewable Energy Development Agency</td>
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<td>JNNSM</td>
<td>Jawaharlal Nehru National Solar Mission</td>
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<td>LDCs</td>
<td>Least Developed Countries</td>
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<td>LLIN</td>
<td>Long Lasting Insecticidal Nets</td>
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<td>MNRE</td>
<td>Ministry of New and Renewable Energy, Government of India</td>
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<td>MoEF&amp;CC</td>
<td>Ministry of Environment, Forests and Climate Change, Government of India</td>
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<td>MoHIPE</td>
<td>Ministry of Heavy Industries and Public Enterprises, Government of India</td>
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<td>MSMEs</td>
<td>Micro, Small and Medium Enterprises</td>
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<td>NBRI</td>
<td>National Botanical Research Institute</td>
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<td>NGO</td>
<td>Non-Government Organisation</td>
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<td>NIP</td>
<td>National Implementation Plan</td>
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<td>PCB</td>
<td>Poly Chlorinated Biphenyls</td>
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<td>PMU</td>
<td>Project Management Unit</td>
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<td>POPs</td>
<td>Persistent Organic Pollutants</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
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<td>UR</td>
<td>UNIDO Representative</td>
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<td>URO</td>
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