



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org



GLOBAL CLEANTECH INNOVATION Programme for SME's in INDIA



FICCI REPORT



Contents

Launch	2
1st Steering Committee and Stakeholders Meeting	4
India International Cleantech Summit 2013	6
Matrix for Energy Efficiency	7
Project Management Unit	7
Benchmarking for Awareness Generation in Energy Efficiency	7
Energy Audit Report	7
Timeline	8
Sustainable Energy Leadership Programme	9
Social Networking/Awareness Generation Tool	10
Facebook	10
LinkedIn profile	11
Workshops	12
Vadodara Workshop	12
Ludhiana Workshop	13
Kolkata Workshop	13
Chennai Workshop	14
Indore Workshop	15
Call for Entries & Mentors	16
Screening Committee Meeting	16
Criteria for Screening	17
Qualified Applicants	18
List of Rejected Applicants with Rationales	20
Mentors	25
Mentor Matching	26
Physical Verification of SME's	28
Mentor-SME Interactive Session	29
Annexure 1 Details of Project (Executive Summaries of Semi-Finalists)	30
Annexure 2 Applicant Mentors (GCIP 2014)	89
Annexure 3 Applicants GCIP 2014 India	119

Launch



(L to R: Mr. Kevin Braithwaite, Executive Director, Cleantech Open, Mr. Amarendra Sinha, Additional Secretary & Development Commissioner, Ministry of MSME, Ms. Ayumi Fujino, Director UNIDO India, Mr. Madhav Lal, Secretary, Ministry of MSME, Ms. Noko Ishii CEO, GEF, Mr. Arbind Prasad, Director General, FICCI, Mr. Shashi Shekhar, Additional Secretary, Ministry of MoEF & GEF Focal Point India, Mr. Pradeep Monga, Director, Energy and Climate, UNIDO.)

In line with the commitments made by India regarding promotion of clean technology and thereby reducing the carbon footprint a Cleantech project has been launched by the Ministry of MSME in partnership with UNIDO and GEF for promoting innovations in clean technology in the Indian SMEs. The project was



launched on **3rd May, 2013** in the presence of Madhav Lal, Secretary, Ministry of Micro, Small and Medium Enterprises and Noko Ishii. FICCI has been identified as a national implementing partner. The project aims at creating an ecosystem, which will act as a catalyst, for fulfilling the vision that all SMEs in India should be energy efficient and must adopt cleaner technologies by 2025. The idea is to promote sustainable development and reduce carbon footprint by introduction of new technology and innovation. The project will help to promote SMEs

that can innovate and develop commercially viable clean low carbon technologies to reduce GHG emissions.

The project aims at promoting clean energy technology innovations and entrepreneurship in selected SMEs in India through Cleantech innovation platform and entrepreneurship acceleration programme. A competition based approach will

be used to identify the most promising entrepreneurs across the nation. Sh. Amarendra Sinha, Additional Secretary & Development Commissioner is the Project Director for the India Cleantech project and Mr. Pankaj Garg, Joint Development Commissioner, Ministry of Micro, Small and Medium Enterprises was appointed as the National Project Coordinator.

To begin with, the Cleantech Project will focus on linking innovators to investors in four Key areas:

- Energy Efficiency
- Waste to Energy
- Renewable Energy
- Water Efficiency

Main SME sectors identified under the project are as follows:

- Foundry
- Glass
- Food processing
- Pharmaceuticals
- Ceramic
- Chemicals
- Textiles
- Leather
- Forging
- Motors and Pumps
- Auto components

1st Steering Committee and Stakeholders Meeting

After the launch besides National implementing agency FICCI, other partner agencies like PCRA, PHD Chamber of Commerce were identified to join hands and make this project a success. Also stakeholders working in the field of clean energy technology were identified and the first steering committee and stakeholders meeting took place in O/o Development Commissioner, Ministry of MSME on November 27, 2013 where an overview of the project was given to participants. The major deliverables under the project were flagged and emphasis was laid on promoting clean technology



innovations in selected Small and Medium Enterprises (SME) through the project.

Participating Organizations included FICCI, SIDBI, GEF, European Union, GIZ, TERI, Energy Efficiency Services Limited (EESL), European Business and Technology center, KfW, MSME Foundation etc.

The details about the project were presented by Mr. Pradeep Monga, Director UNIDO and Mr. Pankaj Garg, NPC to all the stakeholders. The work plan and budget lines for the year 2013-14 were also presented. Dr. Pradeep Monga shared the vision of making the project self sustainable after the completion of first phase and preparing a Global SME innovation Index which could act as an awareness generation tool for SMEs and entrepreneurs and help in building Key Performance Index (KPI). It was explained that the project will adopt an inter disciplinary approach involving SME clusters, national ministries, academia, industrial associations, state governments, partner agencies and autonomous research centres in the country and abroad to promote innovative clean technologies in selected SME clusters across the country. The vision of the project is to make all SMEs in India adopt clean energy technologies by 2025.

India International Cleantech Summit 2013

In India International Cleantech Summit held in October, 2013 a session was held on 10th October chaired by Dr. Pradeep Monga Director, Energy and Climate for the Cleantech project where member countries representatives from Armenia, Pakistan, Malaysia and Mr. Kevin Braithwaite Executive Director, Cleantech Open participated in the event.



From INDIA Mr. Pankaj Garg (second from left), National Project Coordinator, UNIDO GEF MSME Cleantech Open Programme participated.



Matrix for Energy Efficiency

In the 1st steering committee meeting a matrix on energy efficiency defining the awareness generation activities, capacity building activities and energy audits was circulated to all the stakeholders. After collating information on energy efficiency from all members the matrix was prepared. It gives description of activities stated above that have been performed by these organizations in various clusters of Indian SME industry.

Project Management Unit

In the beginning project management unit of the Cleantech programme got setup in the O/o DC MSME. On 10th March, 2014 the PMU was shifted to FICCI Federation House for better coordination with the implementing agency.

Benchmarking for Awareness Generation in Energy Efficiency

As per the directions of the Programme Director a comprehensive report has been prepared for benchmarking various facets of energy efficiency. The report includes issues related to energy efficiency and major challenges faced by SME's in Indian scenario for adoption of cleaner technologies. Also the cleantech programme linkage with various energy management systems like TEQUP scheme of National Manufacturing Competitiveness Programme, QMS/QT scheme of NMCP programme and ISO standards have been defined.

Several meetings were held with GIZ, PCRA, SIDBI, DFID, TERI and other stakeholders for compilation of the reports. The copy of these reports is also attached.

Energy Audit Report

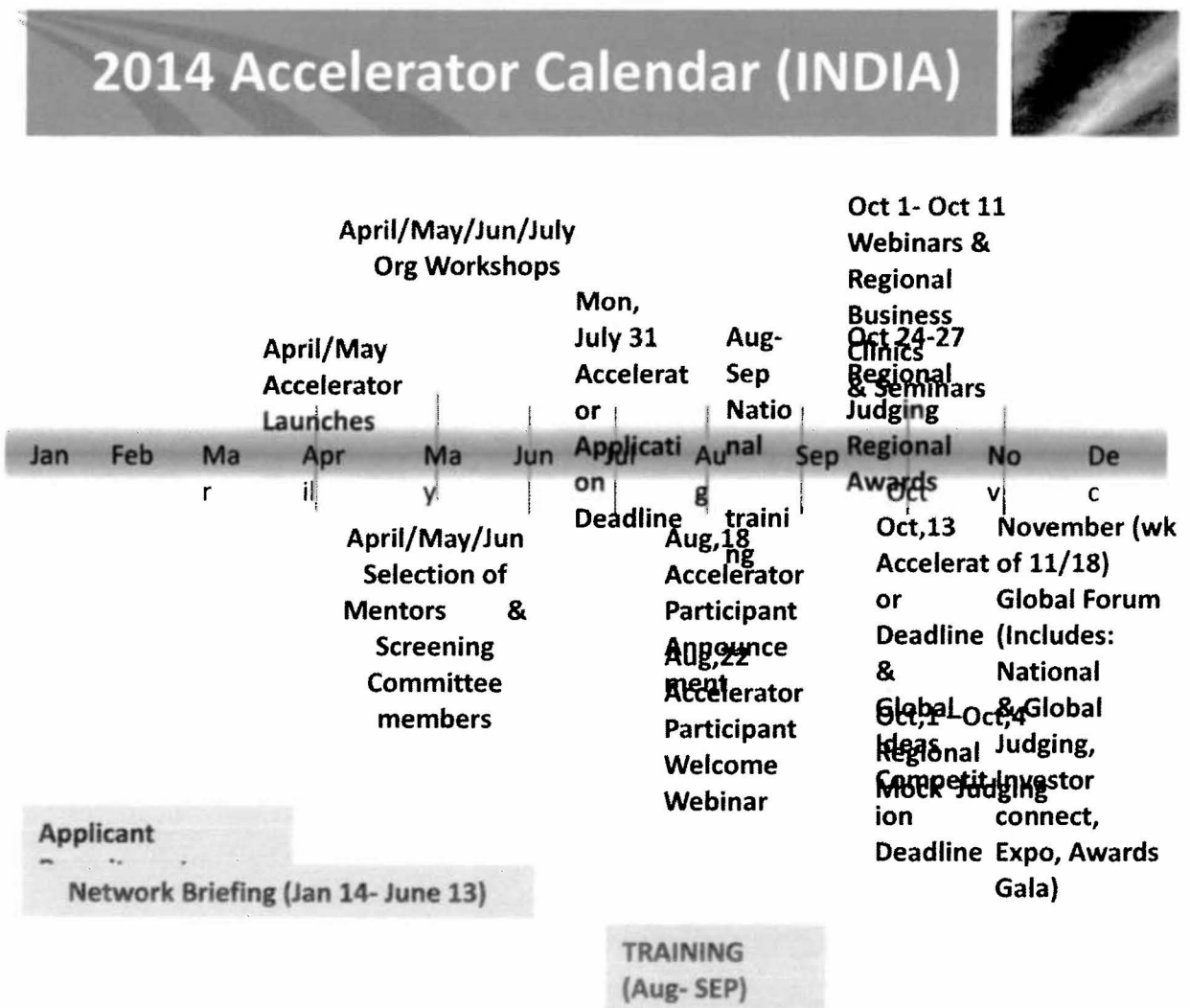
Further, a report for energy audit methodology has been prepared in detail highlighting the concepts of energy audit reporting. The audit worksheets for various types of equipments used in energy audit have been listed in detail.

Besides the above two, three more reports have been prepared defining the methodology to be adopted for energy audits in ceramics, food processing unit, and foundry sector. Energy consumption profile of different manufacturing processes involved in these three different sectors has also been described. These reports are as follow:

1. Energy conservation Measures in **Ceramic** Industry
2. Energy conservation Measures in **Food processing** Industry
3. Energy conservation Measures in **Foundry** Sector

Timeline

Regular conference calls with Mr. Kevin Braithwaite, Global Programs Director, Cleantech Open were held to decide on the timelines for the year 2014. Also the budget lines for the year 2014 has been prepared which describes activities to be performed and there expected outcomes and outputs.



Sustainable Energy Leadership Programme

The TERI University conducted a two week training programme titled, 'Sustainable Energy Leadership' for policy-makers, middle-level managers, and experts from emerging and developing countries associated with the design and implementation of energy policies, projects, and programmes. The training programme had 23 participants from different parts of the global South - developing and emerging countries.

NPC shared the idea of cleantech accelerator in a meeting with participants of Sustainable Energy Leadership Programme (SELP) 2014.



Social Networking/Awareness Generation Tool

To spread mass awareness about this program help has been taken from social media tools like Facebook, LinkedIn etc.

Facebook



(Link: <http://www.facebook.com/indiacleantech>)

In order to spread awareness about the programme among the SME's and entrepreneurs various activities have been performed. One such example is connecting to the people through social networking site **FACEBOOK**. Cleantech programme joined facebook on 29thSeptember, 2013.

LinkedIn profile

INDIA CLEANTECH PROGRAMME
UNIDO GEF MSME Cleantech Open programme at UNIDO
New Delhi Area, India Renewables & Environment

Complete your profile Edit

0 connections

in.linkedin.com/pub/india-cleantech-programme/94/7a5/674/ Edit Contact info

Background

Summary

The MSME (Micro, Small and Medium Enterprises) sector plays a vital role in the Indian economy. It contributes around 45% of manufacturing output, 40% of exports, and employs more than 69 million people. Most of the small scale units are concentrated in around 400 geographical clusters across the country. Out of these, there are a large number of energy-intensive MSME clusters in the manufacturing sector (around 178 cluster manufacturing about 15 product categories), which require urgent energy efficiency measures for economic and environmental sustainability. Realizing the importance of this segment of industry, the NAPCC and the recent five year plans of the Indian Government, through MSME, GEF, UNIDO, etc., have been supporting the MSME sector in various ways.

LinkedIn profile for the programme was created to get connected with mentors and organizations.

Profile Name- **INDIA CLEANTECH PROGRAAMME**

Workshops

After the identification of clusters it was decided to hold 3 to 5 workshops under the first phase of Cleantech open for awareness generation among the Indian SME's. On 28th Feb 2014 a meeting was held with NK Ranganath, Managing Director, Grundfos to get an abstract idea about various clusters in south. Henceforth it was decided that the first workshop will take place in Vadodara, Gujarat on 2nd April, 2014 followed by Ludhiana, Punjab On 8th May, 2014. The third workshop will take place in Kolkata in first week of June and the last two in Chennai and Indore respectively.

All the workshops were well supported by MSME- Development Institutes present in the respective regions. The detailed reports for each workshop were also prepared. The sessions in these workshops consisted of presentations based on Case Studies on Cleantech Innovations in different industrial sectors, Financing options and Legal Perspective on Patenting.

Vadodara Workshop

The first regional workshop for Clean Technology Innovation in SMEs was organized by FICCI on April 2, 2014 at Hotel Surya Palace, Vadodara. The workshop was well supported by three regional chamber members of FICCI, namely Vadodara Chamber of Commerce & Industry (VCCI), Federation of Small Scale Industries (FSSI) and Federation of Gujarat Industries (FGI). About 12 experts addressed the



workshop, which was attended by close to 150 delegates representing SMEs from the western region.

Ludhiana Workshop

The second regional was organized by FICCI on May 8th, 2014 at Hotel Park Plaza, Ludhiana. The workshop was well supported by MSME- Development Institute, Ludhiana. The workshop was attended by close to 125 delegates representing SMEs from the northern region. The workshop also drew support from six industry associations and experts from these associations addressed the workshop.



L-R : Mr. Vinod Vashisht (President, All India Steel Re-Rollers Association), Mr. Vinod Thapar (Chairman, Knitwear Club), Mr. Pankaj Garg (National Project Coordinator, Global Cleantech Innovation Programme), Dr. Arbind Prasad, Mr. S.S. Dhillon (Director, MSME-Development Institute, Ludhiana), Mr. Joginder Kumar (Chairman, United cycle Parts Manufacturing Association), Mr. G.S. Khalon (President, Auto Parts Manufacturing Association), Mr. Gurmeet Kullar (President, Federation of Industrial & commercialization Organization), Ms. Mridula Jain (Chairman, Shawl Club)

Kolkata Workshop

The third regional workshop for Clean Technology Innovation in SMEs under the aegis of MSME GEF UNIDO Cleantech Programme was organized on June 3rd, 2014 at Hotel Hindustan International, Kolkata. The workshop was well supported by MSME- Development Institute, Kolkata and Bengal National Chamber of Commerce and Industry, which was attended by close to 80 delegates representing SMEs from the eastern region.



(L-R: Ms. Rita Roy Choudhury, Senior Director, Climate Change and Renewable Energy, FICCI, Mr. Debyendu Basu, President, Bengal National Chamber of Commerce & Industry, Mr. Pankaj Garg, NPC, UNIDO GEF MSME Programme, N.N.Debnath, Director, MSME-Development Institute, Kolkata)

Chennai Workshop



(R-L: Mr. Nandakumar, Convener, Energy panel, FICCI TNSC, Mr. Basha, Sr. Vice President, the Industrial Estate Manufacturers Association, Mr. Sivagnanam S, Additional Industrial Advisor, MSME-DI, Chennai, Mr. P. Murari IAS (Retd), Advisor to FICCI President (on the podium), Mr. Pankaj Garg, NPC, UNIDO GEF MSME Cleantech Open

Programme, Mr. V K Parthasarathy, President, Ambattur Industrial Estate Manufacturer's Association, Ms. Rita Roy Choudhury, FICCI, Senior Director-Environment, Climate Change, Renewable Energy, FICCI)

The fourth regional was held on July 2nd, 2014 at Hotel Hyatt Regency, Chennai. The workshop was well supported by MSME - Development Institute, Chennai, which was attended by close to 60 delegates representing SMEs from the southern region.

Indore Workshop

The fifth regional workshop for Clean Technology Innovation in SMEs under the aegis of MSME GEF UNIDO Cleantech Programme was organized by FICCI on July 18th, 2014 at Hotel Fortune Landmark, Indore. The workshop was well supported by MSME- Development Institute, Indore, which was attended by close to 100 delegates representing SMEs from the central region.



(L-R: Mr. Hemant Mehtani, President, AIMP Indore, Dr. Arbind Prasad, Director General, FICCI, Mr. Pankaj Garg, NPC, UNIDO GEF MSME Cleantech Open Programme, Mr. D.S. Mandloi, Director, MSME Development Institute, Indore.)

Call for Entries & Mentors

The programme was launched for SME's and mentors on 15th May, 2014. SME's had the benefit of submitting the application through online platform created by Cleantech Open and also through hard copies. Hard Copies were acceptable as there is less penetration of IT industry in Indian SME sector. The registration deadlines were postponed for a week as the SME's and mentors showed their interest in linking up with the programme.

After the deadlines i.e. 8th August, 2014 total number of applications received were 183 in four categories viz. energy efficiency, waste to energy, water efficiency and renewable energy. Further 29 number of applicants applied for the mentoring process in the first year of the programme.

Screening Committee Meeting

The Screening committee meeting under the aegis of UNIDO GEF MSME Cleantech Open Programme took place on 25th -26th August, 2014 in FICCI. The meeting was chaired by Dr. Prodipto Ghosh, member of the Prime Minister's Council on Climate Change. The distinguished panel of the screening committee consisted of Mr. Saurabh Kumar, Managing Director, Energy Efficiency Services Limited (EESL), Mr. K.S. Popli, Chairman and Director, Indian Renewable Energy Development Agency Ltd (IREDA) and Mr. K. Krishnan, Chairman, Malavalli Power Plant. The screening committee was assisted by Mr. Jaspal Singh Aujla – Sr. Manager (Tech), EESL, Mr. Ashish Sharma – Deputy Manager (Tech), EESL, Mr. Vivek Utpal – Program Manager (DSM), EESL, Mr. Karan Arora – Sr. Engineer (Tech), EESL.

Out of 183 applications representing SME's throughout the country 102 applications were found to be relevant with regards to the objectives of the program which were presented to the screening committee for pre screening and selection of top 30 semifinalists.

The members of the committee designed a criteria allocating significant weight age to every module for the screening of the 102 applications wherein the most important aspect was own innovation/invention/first mover. It was decided that the applicant to be selected/distributed marks must be an innovator or inventor or first mover in his particular domain. Once that has been done then only the entry will be considered for further deliberations.

Criteria for Screening

✓ Own Innovation/Invention/First Mover

Primary consideration

S. No.	Modules	Weight age
1.	Significance to Cost/Economic benefit to the organization	25
2.	Readiness for Commercial Application/Replication	10
3.	Creativity of Innovation	15
4.	Significance to Environmental Impact	15
5.	Significance to Economic benefit including energy security to the country	20
6.	Social Significance of Innovation	15

The 102 applicants were further assessed by the committee members on the basis of criteria designed by the screening committee. Out of which only 31 applicants could qualify the first and foremost step. Also it was informed by the chair to provide specific reasons/rationales for rejection/selection of a particular entry.