



## **SUSTAINABLE & ENVIRONMENT-FRIENDLY INDUSTRIAL PRODUCTION (SEIP)**

### **Activities in Delhi: Monthly Progress Report – February, 2017**

#### **Introduction**

“Sustainable & Environment-friendly Industrial Production” (SEIP) is a joint project of the Ministry of Environment, Forest and Climate Change (MoEF&CC) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH within the framework of the Indo-German Technical Cooperation. The objective of the SEIP project is to support the Indian public and private stakeholders in jointly implementing strategies for efficient, environment- friendly, and climate-friendly industrial development.

The project works on mitigating selected environmental problems of national importance, with focus on industrial waste water and solid waste management. The project aims at demonstrating solutions on reducing acute environmental pollution and improving resource efficiency in industrial production for which technical solutions and business and management models can be showcased with positive results and direct impact on improving the environmental conditions at the selected sites. Further on, the cases can serve as models to be replicated nationwide subsequently. The project activities are focused to waste water conveyance, treatment, recycle and reuse, waste management, monitoring, process modification in individual industries etc. These will be complemented by training and skills development and by setting up of a virtual platform that offers exchange of best practice technologies.

States selected for this project are Uttarakhand, Gujarat and Delhi. The SEIP project has a duration of March 2015 to February 2018 (likely to be extended by upto 1 year) and a budget of 6.5 million EUR. A brief overview of the SEIP Project is given at Annexure 1.

## Activities for Delhi

### The major activities identified for Delhi are:

- Solutions for CETP upgradation/modernisation, recycle/reuse of treated wastewater
- Planning of CETP/STPs for Patparganj Industrial Area
- Demonstration of improvements in up to 50 individual industries
- Demonstration of improvement in 10 ETPs and replication
- Improvement in storm water drainage systems
- Improvements through cross learning and facilitation – cleaner production, wastewater management
- Improvements through environment drives and participatory approaches
- Action plans for control of industrial pollution in Delhi to River Yamuna
- Environmental drives, workshops, meetings, conferences

Brief description of the above activities is given at Annexure 2.

### The priority activities identified for Delhi (Patparganj industrial estate) include:

- Removal of waste dumps in the industrial estate
- Repair/maintenance of sewage/conveyance system
- Repair/maintenance of storm water drainage systems, implementation of rain water harvesting system
- Replication successful demonstrated case studies/best practices of improved production processes and resource efficiency in individual industries - electroplating industries, automobile service stations etc.
- Replication successful demonstrated case studies/best practices of improved waste water management, including recycle/reuse in individual industries, automobile service stations etc.
- Plantation in buffer zone along the drains and in open spaces.

### The complementary activities of the SEIP project that are relevant for all sites in Delhi are:

- Technology platform - industry led platform will be established on a viable business model
- Green rating and certification system for industrial areas
- Recommend new measures for pollution control and resource efficiency under policies/plans/programmes of the government
- Upscaling/replication of successful models in upto 10 industrial areas
- Solutions for online monitoring system for ETPs/CETPs

Brief description of the above complementary activities is given at Annexure 3.

### Selection of other industrial areas within Delhi:

Under SEIP it was decided that GIZ will take up two more industrial areas/CETPs in Delhi other than Patparganj Industrial Estate to provide technical cooperation for sustainable industrial production and waste water management. To discuss and decide anonymously on the selection of two CETPs, DSIIDC and GIZ had organised a meeting in DSIIDC, Connaught Place office on 14th December, 2016. Representative from 13 CETP societies along with representatives from Confederation of Delhi Industries & CETP Societies, Office of the Commissioner of Industries, Ministry of Environment, forest and Climate change were invited in the meeting. As a result, Okhla CETP and Lawrence Road CETP were selected as two more sites for technical cooperation in Delhi. (Refer Annexure 4 - Minutes of the meeting with stakeholders on identification of CETPs in Delhi for further details).

## Monthly Progress of Activities for Delhi

### 1. Solutions for CETP upgradation/modernization, recycle/reuse of treated wastewater

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#### About the activity:

Delhi has 13 CETPs and 29 industrial areas and most of the CETPs are suffering from low effluent supply due to the gap between installed & operational capacity (sometimes 1/10 of the installed capacity). The CETPs are not able to function properly due to obsolete technology, conveyance problem in connected industrial area, change in type of industries in connected industrial area, existing business and management models. CETP's in Delhi need urgent upgradation to cope up with the CPCB/DPCC standards. Under the SEIP project, GIZ will provide technical support to DSIIDC for modernization of two CETPs as a pilot. (Refer Annexure 2, point no 1 for more details about the activity)

To identify two CETPs in the project, a meeting chaired by CE, DSIIDC was conducted on 14th December 2016 at Conference Hall DSIIDC, Connaught place where all CETP societies and Confederation of CETP societies were represented. In this meeting, CETP at Lawrence road (connected to Lawrence road industrial area and Keshavpuram industrial area) and CETP at Okhla (connected with Okhla Industrial Area Phase I and Phase II) were selected anonymously by all participants. (Refer Annexure 4 for details)

#### Summary of progress so far:

GIZ team followed up with the two CETP societies asking for relevant data. Secondary data collection started from NPC report, DPCC website and other reports available online. GIZ team collected data on industries from National productivity Council (NPC), New Delhi. The decision of selection of two CETPs (Lawrence road and Okhla) has been finalised from GIZ and DSIIDC end though no representative from Okhla CETP society showed up in any of the meeting arranged by DSIIDC and GIZ.

Data collection on waste water from individual industries was started. Data collection on conveyance system for Lawrence Road industrial area and Okhla Industrial Area (drawings of sewer lines and storm water drainage) from DSIIDC and DJB were completed. A reconnaissance survey was conducted in Lawrence Road industrial area to understand the situation of storm water drainage, sewer system and solid waste management.

#### Progress for the current month:

- The list of industries in Lawrence road industrial area was verified with the CETP society. The list of operational industries has been finalised. Cross checking on the field and data collection on waste water will be started in March.
- Team from consultants from Hydroplan have been engaged and they have started work for SEIP project sites in Delhi.
- Conveyance system for Lawrence Road industrial area and Okhla Industrial Area (drawings of sewer lines and Storm water drainage) collected from DSIIDC and DJB were shared with Hydroplan team.
- GIZ team is following up with two CETPs for their co-operation.

### 2. Demonstration of improvement in ETPs and planning of CETP for Patparganj industrial estate

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#### About the activity:

There are seven electroplating units (as identified in the PFEA directory 2013) in Patparganj industrial estate which generates seriously polluting effluent as per DPCC reports. These units have installed individual ETPs. Along with these electroplating industries there are unorganised/ not associated with PFEA electroplating industries, a few service stations are also there which causes serious water

pollution as per PFEA. However, Patparganj industrial estate does not have a common effluent treatment plant (CETP). The industrialists consider this as a cause of major concern.

#### **Summary of progress so far:**

- Seven electroplating units have been identified and a meeting was held on 20th October to discuss specific problems faced by these units. In the meeting it was concluded that there is a serious need for centralised / decentralised CETP/STP within the industrial area for which a detail level survey on water usage, waste water generation etc. is required (Refer Annexure 5).
- To assess the requirement of CETP, type of treatment required etc., it was decided that GIZ will engage international experts to conduct a prefeasibility study and suggest viable measures to DSIIDC.
- Questionnaire for data collection on waste water usage in industries for pre-feasibility study was circulated during the month of November.
- Reconnaissance survey in the industries to understand present scenario of ETP and ZLD application has been done by GIZ during the month of November.
- A survey was conducted by GIZ all the seven electroplating units, service stations, and printing and packaging units to understand present status of the ETPs installed in them during the month of December.
- Data collection through questionnaires from 21 industries which have installed ETP has been completed by GIZ.

#### **Progress for the current month:**

- Data collection through questionnaires from 51 industries which have installed ETP has been completed by GIZ.
- Hydroplan team started working with GIZ, Delhi team. Data collected by GIZ Delhi team has been shared with Hydroplan.

### **3. Improvement in storm water drainage and waste water conveyance systems in Patparganj Industrial Estate**

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#### **About the activity:**

During the planning workshop conducted at Patparganj industrial estate on September 1<sup>st</sup>, 2016, the association expressed concerns about the existing waste water conveyance system. The association and the industrialists showed their concern about the rain water harvesting due to ground water depletion within the industrial area. The storm water collected in the industrial area drains out through surface drains (partially open) to Ghazipur drain. This causes choking in of drains due to solid waste dumps in the open drains during the dry season. Based on the existing situation, measures towards effective storm water management will be proposed to DSIIDC and PFEA under the technical cooperation with GIZ. (Refer Annexure 5)

#### **Summary of progress so far:**

Base mapping of the existing land use, circulation network and green areas was completed by GIZ during May-June 2016. To further strengthen this data, GIZ team collected PFEA data on the existing sewage/conveyance system and storm water drainage from DSIIDC and PFEA. A layout map with details about sewer line, water supply line, location of fire hydrants (proposed at that time) has been obtained from PFEA, however it is old (last signed in 1989). GIZ has shortlisted an international company to work on detailed problem analysis on the above aspects and provide conceptual solutions. The experts are expected to start their work in January 2017.

GIZ team conducted a reconnaissance survey to understand the ground reality of existing conveyance system and storm water drainage in the month of November which was discussed in earlier report. After the reconnaissance survey last month GIZ team concluded the conveyance of storm water is a minor issue in Patparganj industrial estate thus it will not be regarded as an immediate priority but may be considered as a part of cleanliness drive. Draft baseline report on conveyance system is prepared by Ms. Sonal Jain, Consultant, GIZ along with the Delhi SEIP team and submitted to GIZ.

#### **Progress for the current month:**

- International consultant Hydroplan started working with GIZ Delhi team for improving conveyance system in three sites identified under SEIP in Delhi. Collected base data was already shared with Hydroplane Team.

## **4. Improvement through environment drives and participatory approaches**

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### **4. a. Cleaning of public spaces and streets**

#### **About the activity:**

Patparganj industrial estate is amongst the developed estates of Delhi in terms of infrastructure as well as commerce but as far as environment is concerned there is a lot of scope for the improvement. Solid waste management is a major concern within the estate. The industries association – PFEA (Patparganj F.I.E entrepreneurs association) has assigned the waste management task to a private body which is responsible for collection, storage, transportation and disposal of waste. The East Delhi Municipal Corporation collects the waste once in a week through waste collection vehicles from the estate and then dumps it into the dumping grounds of Ghazipur. For lack of designated waste disposal facility within the industrial estate, the waste often dumped in the open areas like vacant plots, parking lots, etc. PFEA has started door to door waste collection system.

#### **Summary of progress so far:**

- PFEA conducted a cleanliness drive during October 2016. As a result, almost 300 tons of garbage was removed from the industrial area through street cleaning and sweeping.

#### **Progress for the current month:**

- During the month of February the work on environmental improvement in the industrial area was paused. It is planned to be resumed during March 2017.

### **4.b. Plantation in the industrial estate**

#### **About the activity:**

Patparganj industrial area is within a close vicinity to ISBT, Anand Vihar. As per PFEA ISBT causes too much traffic within the area causing serious air pollution within the Patparganj Industrial Area. Also the toxic gases generated in the Ghazipur Drain reacts with the surfaces of electronic appliances in the surroundings and damages them. The buffer zone at one of the edge of the Patparganj industrial estate is still lying under-developed which would have helped in bringing down the effect of air pollution within the industrial area and its surroundings. PFEA is keen to improve the aesthetics and hygiene of the industrial areas and hence have started taking steps towards it.

#### **Summary of progress so far:**

- PFEA conducted a plantation drive in an open space during June 2016-September 2016 the support of DSIIDC and GIZ. This resulted in transformation of park once lying as a junkyard into a green lung space for the industrial estate. (Refer Monthly progress report November 2016).
- At the “Planning workshop” held on September 1, 2016, PFEA expressed interest in developing more green areas within the industrial area and also in the buffer zone along the drain. (Refer Annexure 5)
- Following this, GIZ team had a discussion with CE, DSIIDC along with SE (Environment), DSIIDC regarding the same on 16<sup>th</sup> November meeting at DSIIDC, Connaught Place office. The final decision is awaited. (Refer Annexure 7)

#### **Progress for the current month:**

- During the month of February, the work on environmental improvement in the industrial area was paused. It is planned to be resumed during March 2017.



- Proposal preparation by GIZ for another environment improvement drive is under process.

## **5. Improvements through cross-learning and facilitation – cleaner production and waste water management**

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### **About the activity:**

This is a platform for discussion and demonstration of best practices from industries. GIZ team also involves field experts (both within and outside GIZ), organisations like DSIIDC, DPCC to educate the industrialists about available best practices in the field. Through these meetings the industrialists themselves educate/guide each other about available best practices.

### **Summary of progress so far:**

GIZ team had organised first Delhi Stakeholder Meeting (Patparganj) along with DSIIDC on 5<sup>th</sup> December, 2016 but it was postponed by PFEA due to some unavoidable reason.

### **Progress for the current month:**

- During the month of February, improvements through cross learning and facilitation in the industrial area were paused. It is planned to be resumed during March 2017.
- Adelphi was awarded the contract for the activity as the international consultant in Delhi. Their representative had already started discussion with the GIZ Delhi team. They expressed their willingness to help industries in cross learning. They are looking forward to share their experience in other medium and small scale industries so that the industrialists from Patparganj can try those measures for cleaner production and resource efficiency.

## **6. Other activities:**

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### **6. a Meeting with CMD, DSIIDC with all stakeholders on 6<sup>th</sup> February at DSIIDC, CP Office:**

GIZ Delhi team initiated a meeting at DSIIDC Connaught Place office chaired by CMD, DSIIDC with all stakeholders to seek support from the industrial associations of Patparganj, Lawrence road CETP and Okhla CETP for SEIP Project and also to prepare an action plan for data collection and develop implementable solutions.

(For Details refer Annexure 8).



**Pic: Meeting with CMD, DSIIDC with all stakeholders on 6th February at DSIIDC, CP office.**

## 6.b. Management structures for industrial areas

### About the activity:

The objective of this activity is to understand the current situation, intentions and expectations of developing management structure for industrial areas of Delhi and advice upon possible changes by benchmarking the same with German and International industrial parks. (For detail refer Annexure 9).

### Summary of progress so far:

Data on management structure from PFEA was collected from the president and shared with our international consultant.

### Progress for the current month:

- Dr. Michael Weber from Weber Consulting, Germany, visited Patparganj, Lawrence Road and Okhla (Phase I and Phase II) industrial areas and also met with DSIIDC officials for the same.
- He interacted with the industries associations and CETP society to understand the situation.
- A half day workshop with all stakeholders in Delhi in DSIIDC Connaught place was held on 16<sup>th</sup> February, 2017 at DSIIDC head office, Connaught Place and presented his feedback from site visits. (For detail refer Annexure 9).



**Pic: Dr. Webers Meeting with PFEA, Patparganj Industrial Estate.**



**Pic: Dr. Webers Meeting with DSIIDC**



**Pic: Dr. Webers Meeting with Lawrence Road CETP Society**



**Pic: Dr. Webers Meeting with Okhla CETP Society**



**Pic: Workshop on management structure on 16<sup>th</sup> February at DSIIDC, CP Office.**

## 6.c Management of solid waste from industrial area and CETP sludge as a part of Indo-Norwegian project on co-processing under SEIP

### About the activity:

GIZ and SINTEF are putting efforts together to provide technical support and capacity building for sustainable management of industrial wastes and sewage sludge, and for cleaning up of critically polluted areas in the three selected industrial sites.

### Progress for the current month:

- Mr. Palash Kumar Saha, Scientist, SINTEF visited Patparganj industrial area and Lawrence Road CETP to understand if there is any scope for co-processing in energy intensive industries.
- He also met DSIIDC and DPCC to understand about already taken initiative by them for utilisation of CETP sludge from Delhi.
- DPCC shared minutes of their meeting with the cement industries for utilisation of CETP sludge, which will be used as the baseline by SINTEF.



**Pic: Solid waste collection point in an open plot near PFEA office for segregation- Visit by SINTEF consultant**



**Pic: CETP Sludge storage in Lawrence Road CETP- Visit by SINTEF consultant**



## 7. Annexures

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Annexure 1: SEIP Project Overview

Annexure 2: Brief description of various activities for (Delhi)

Annexure 3: Brief description of SEIP project level complementary activities

Annexure 4: MOM-DSIIDC\_GIZ\_CETP Societies on identification of CETPs in Delhi

Annexure 5: Patparganj Planning Workshop Report

Annexure 6: MOM- Patparganj First monthly meeting

Annexure 7: MOM- DSIIDC\_GIZ -Discussion on finalisation of the co-operation agreement

Annexure 8: MOM SEIP-Delhi stakeholders meeting

Annexure 9: MOM DSIIDC\_GIZ\_PFEA\_OKHLA\_KESPIA

## Annexure 1: SEIP Project Overview

**Objective:** The SEIP project has focus on efficient, and environment and climate-friendly industrial development. The objective of the project is: “Private and public stakeholders jointly implement strategies for efficient, and environmental and climate-friendly industrial development.”

**Duration:** The project has a duration of 3 years from March 2015 to February 2018. The project is likely to be extended by about 8 to 10 months.

**Budget:** The total budget available for the duration of the project is 5 million EUR. An additional budget of 1.5 million EUR has been committed by the German for augmenting the activities for controlling industrial pollution to River Ganga.

**Project Sites:** The project has its focus in selected sites at the Gujarat Industrial Development Corporation’s (GIDC) Industrial Estate at Vapi (Gujarat), Delhi Industrial Infrastructure Development Corporation’s (DSIIDC) industrial areas at Patparganj and Lawrence Road (Delhi), and the Integrated Industrial Estate State Industrial Infrastructure Development Corporation of Uttarakhand Ltd. (SIIDCUL) in Haridwar (Uttarakhand).

**Partners:** The Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India and GIZ are the main project partners. An Implementation Agreement has been signed between MoEF&CC and GIZ on 16<sup>th</sup> June 2016. The Central Pollution Control Board, as a technical arm of MoEF&CC, plays an important role. The key stakeholders for the project site in (Delhi) are:

- Delhi State Industrial and Infrastructure Development Corporation Ltd. (DSIIDC)
- Delhi Pollution Control Committee
- Patparganj F.I.E Entrepreneurs Association (PFEA)
- Okhla CETP Society
- Lawrence Road CETP Society
- Confederation of CETP Society, Delhi

## Approach

The SEIP project works on selected environmental problems of national importance, with the main thematic focus on industrial wastewater and solid waste management. The project aims to showcase solutions on how acute environmental pollution can be reduced and how resource efficiency in industrial production can be improved. Project outputs are grouped into 3 areas:

- Output A: Environment-oriented modernisation of three industrial areas (showcasing solutions),
- Output B: Establishing appropriate framework conditions at the national and state levels, and
- Output C: Knowledge management and dissemination.

To accomplish these outputs, various activities are being taken up at the national level as well project site level. The project activities are focused on wastewater conveyance, treatment, recycle/reuse, waste management, monitoring, process modification in individual industries etc. These will be complemented by training and skills development, and setting up of a technology platform. At the national and state level, the project supports the creation of an enabling framework by suggesting measures for new policies, plans and support programmes to prevent and reduce pollution and improve resource efficiency in industrial zones. Further, the project will create practical examples of management and planning for sustainable industrial zones supporting women. The project will include private stakeholders such as industry associations, operators of industrial sites and companies, and relevant entities in the states and the centre. The public and private sectors will be effectively engaged at various stages of the project.

## Expected Results of SEIP Project

The SEIP project will demonstrate solutions resulting in positive impacts and improved environmental conditions at the selected sites. The successful cases will serve as models that can subsequently be taken up on much larger scales. The key indicators for measuring the results are:

- Decrease in pollution by an average of 20 percent in the surroundings of three industrial sites.
- Launch of development programmes and promotional guidelines that aim at increasing resource efficiency and reducing pollution in selected states.
- Launch of two additional compulsory central government policies, plans and/or programmes, and measures to prevent and reduce pollution as well as improve resource efficiency in industrial zones.
- Adoption of best practices through technology and management methods for an efficient, environment- and climate-friendly industrial development in 10 industrial zones.
- Provision of two additional practical examples regarding management and planning methods of sustainable industrial zones that support women.

## Annexure 2: SEIP Project Activities in Delhi

### MODERNISATION/UPGRADATION OF CETP/ETPs, ZLD, IMPROVEMENT IN CONVEYANCE/DRAINAGE

#### Key issues:

Delhi has 13 CETP's and 29 industrial areas within Delhi Vicinity (As per NPC report submitted to GIZ)

- Physio chemical treatment only
- Industrial effluents and sewage from the industries, banquet halls, slums within industries, sometimes slums in the surrounding areas mixed up while reaching the CETP for treatment causing serious treatment issues for CETP.
- Design based on industrial conditions of the year 2000 or earlier.
- Gap between installed & operational capacity.
- Existing business and management models of CETP need improvement.
- Storm water overflow to CETP adding to carries pollutants and hence requires appropriate measures.

#### Proposed measures:

The proposed measures under the SEIP Project include:

- Up-gradation/modernisation solutions for CETP and ETPs (10 no.)
- Design/redesign retrofitting of wastewater conveyance and storm water drainage
- ZLD solutions - recycle/reuse of treated wastewater
- Improved business and management model for CETP
- Environmental drives for improving compliance and removal of waste dumps

### ENVIRONMENT IMPROVEMENTS IN INDUSTRIES

#### Key issues:

Patparganj industrial estate:

- Patparganj Industrial Estate is among the developed estates of Delhi in terms of infrastructure as well as commerce but as far as environment is concerned there is a lot of scope for the development of the estate. There are 12 seriously polluting and 70 polluting industries, which are producing thousands of liters of waste water every day. This waste water is disposed in the drains without any prior treatment, causing hazard to the Yamuna River. The effluent treatment plants are not much in the estate and since majority of the industries are of small scale and waste water character is different in different types of industries. There is no CETP in there. Patparganj industrial estate located on the bank of Ghazipur Drain. So the industrial effluent generated within the industrial area causing water pollution in the drain and eventually to river Yamuna. The reduce water pollution, industrial effluent disposal from Patparganj industrial estate must be addressed.
- Solid waste management is the next issue of concern as there are many loop holes in the management of the waste generated from the estate.
- The problems like inefficiency, pollution and non-compliance are existing in industries, there is a scope of considerable environment improvements.

#### Proposed measures:

The proposed measures under the SEIP Project include:

- Monthly meetings are to be conducted with industries for knowledge exchange and to promote Best Available Technique (BAT).



- Detailing of solutions on industrial effluent disposal and cleaner production (target – 10 industries) by experts.
- Support during implementation of solutions in industries.
- Enable replication of successful models in other industrial areas.

## ONLINE MONITORING SYSTEM FOR ETP/CETP

### **Key issues:**

As per Central Pollution Control Board vide its letter No. B-29016/04/06PCI-1/5401 dated 05.02.2014 directions under section 18(1) b of the Water and Air Acts to the State Pollution Control Boards and Pollution Control Committees, the industries and CETPs are required to install online effluent quality monitoring systems to help track the discharges of pollutants from the units of the 33 categories of seriously polluting industries. The key issues related to the online monitoring system are:

- Convince industries of all 33 categories of seriously polluting industries and CETP society to install and use online monitoring system as per CPCB direction.
- Installation of online monitoring system in CETP and industry is on voluntary basis. Data authentication is still not there. DPCC considered online monitoring system only as a self-monitoring mechanism by the individual CETPs. Hence individual manual sample collection and testing is done parallel by DPCC for measuring the performance of the CETPs.
- Problems related to identification of suppliers, calibration and reliability of online monitoring system need to be addressed/solved for the effective implementation of online monitoring systems in industries.

### **Proposed measures:**

The proposed measures under the SEIP Project include:

- Survey of industries and CETPs is to be taken up using the questionnaire on the online system by GIZ team.
- Study of existing system at individual industries and CETPs is to be carried out.
- Training and capacity building of stakeholders are required.
- Policy analysis and advice to CPCB on the effective way of implementing and using the online monitoring systems in industries.

### **Actions taken:**

- **Engagement of German experts**  
International expert engaged by GIZ Dr. Olaf Kujawski came for short site visit in Delhi from 17<sup>th</sup> October to 19<sup>th</sup> October. Following tasks were accomplished during his visit:
  - Four CETPs which have installed online monitoring system were visited. One online monitoring system station installed near River Yamuna was also viewed.
  - Thorough discussion was undertaken with CPCB officials on existing set up of online monitoring system in India and situation in Delhi.
  - He also participated in an information exchange session with Mr. Sanjeev Kanchan, Programme Manager- Environmental Governance (Industry), Centre for Science and Environment (CSE) on “Online monitoring system in India : past and present scenario”.
- **Data collection/surveys/studies**
  - On-line monitoring system are already been installed in six CETPS out of 13 CETP’s in Delhi. Out of which GIZ team visited five CETPs and circulated the questionnaire prepared by GIZ for data collection. The names of 5 CETPs which were visited are:
    1. Okhla Industrial Area CETP
    2. Lawrence Road Industrial Area CETP
    3. Narela CETP
    4. SMA Industrial Area CETP
    5. Wazirpur Industrial Area CETP

- Data collection completed in four CETPs
  1. Okhla Industrial Area CETP
  2. Lawrence Road Industrial Area CETP
  3. Narela CETP
  4. SMA Industrial Area CETP

Draft baseline report was prepared based on discussion with CPCB, DPCC and site visit by GIZ team which was handed over to Dr. Olaf Kujawski for his reference.

**Activity closed at site level for the time being.**

## **1. SKILLS DEVELOPMENT – ETP/CETP OPERATORS (HELPERS, TECHNICIANS)**

### **Key issues:**

The environmental laws require the trade effluents discharged from any premises used for carrying on any industry, operation or process or treatment or disposal system to be treated to meet the prescribed standards before their disposal. Accordingly, a number of Effluent Treatment Plants (ETPs) have already been set up by industries and more will come up in the future. The 17-categories of highly polluting industry sectors are in special focus from the regulatory authorities due to pollution caused by them. To facilitate cost effective treatment solution for SMEs, the Government of India has been promoting setting up of Common Effluent Treatment Plants (CETPs) and the country today has over 190 such treatment plants. The key issues/aspects related to skills of ETP/CETP operators (Helpers and Technicians) are:

- ETPs/CETPs operators of SIIDCUL Industrial Estate lack the certified/skilled operators in industries.
- Government of India is promoting skills development of ETPs/CETPs operators (Helpers and Technicians) in industries.
- 7 training institutions have been affiliated by SCGJ/NSDC for building the capacity of ETPs/CETPs operators.

### **Proposed measures:**

The proposed measures under the SEIP Project include:

- Skills development programmes (2 rounds in 2016/17) are to be organised for 60 helpers and 60 technicians by GIZ.
- The performance of operators need to be analysed and monitored before and after skills development programmes.
- Skills competition was organised for trained teams at IFAT trade fair at Mumbai on Sept. 30, 2016.

### **Expected outcome:**

- Availability of certified skilled technicians and helpers in IIE Haridwar for improved operation and management of ETPs/CETP.
- Reduction of environmental pollution by 20 % at the selected ETPs/CETP, measured by the change of parameters as pH, BOD, COD, TDS, TSS etc. with respect to baselines, established at the start of the project.
- Occupational mapping is completed to identify jobs in industrial wastewater treatment in line with the National Skills Qualification Framework (NSQF) levels so that SCGJ can come up with skills development packages.

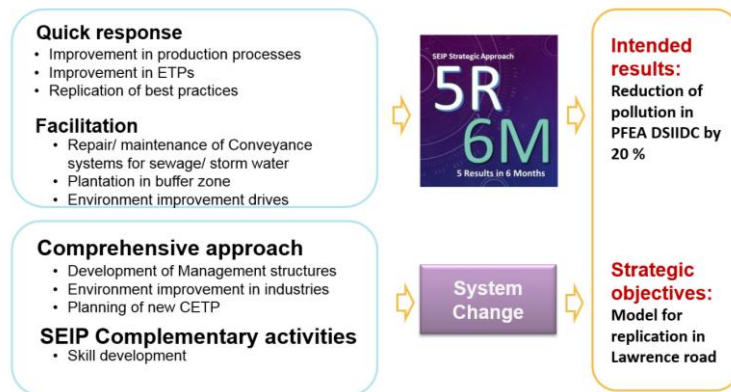
### **Progress:**

- Occupational Mapping  
A detailed study about all the levels of jobs in industrial waste water operation and management has been completed through national consultants hired by GIZ and submitted to stakeholders for feedback.

- Qualification Packages (QPs) – ETP/CETP Operators  
The Qualification Packages for technicians and helpers of wastewater treatment plants have been brought up by the Skill Council for Green Jobs (SCGJ)/National Skill Development Corporation (NSDC).  
[http://www.nsdcindia.org/sites/default/files/files/Wastewater\\_treatment\\_Plant\\_Helper.pdf](http://www.nsdcindia.org/sites/default/files/files/Wastewater_treatment_Plant_Helper.pdf)  
[http://www.nsdcindia.org/sites/default/files/files/Wastewater\\_treatment\\_Plant\\_Technician.pdf](http://www.nsdcindia.org/sites/default/files/files/Wastewater_treatment_Plant_Technician.pdf)
- Training of Trainers course  
With experts from DWA (German Association for Water, Wastewater and Waste); GIZ conducted a 3-day training of trainers course for participants from the training institutions affiliated by SCGJ. Refer to: <http://www.igep.in/e48745/e49028/e64198/e64293/>
- Skilling programme for technicians and helpers  
A 6-day skilling programme was conducted by GIZ jointly with SCGJ during August 29 to September 3, 2016 at Vapi in which up to 10 technicians/helpers were invited from Delhi. The course was conducted by a senior German skilling expert from DWA. There was no participation from Delhi.  
Refer to: <http://seip.igep.in/e63552/e64605/e64606/>

## 2. STRATEGY ADOPTED IN DELHI (PATPARGANJ INDUSTRIAL ESTATE):

Considering the site condition the strategies in Delhi had been slightly modified. The activities have been divided in two parts 1) quick response activities which comes under 5R-6M which are short term measures taken on the site, and 2) comprehensive approach which is more of a long term measure comes under system change.



### The priority activities identified for Delhi (Patparganj industrial estate) include:

- Removal of waste dumps in the industrial estate
- Repair/maintenance of sewage/conveyance system
- Repair/maintenance of storm water drainage systems, implementation of rain water harvesting system
- Replication successful demonstrated case studies/best practices of improved production processes and resource efficiency in individual industries - electroplating industries, automobile service stations etc.
- Replication successful demonstrated case studies/best practices of improved waste water management, including recycle/reuse in individual industries, automobile service stations etc.
- Plantation in buffer zone along the drain and in open spaces.

### Annexure 3: SEIP Project Complementary Activities

<input type="checkbox"/> Environmental Technology Platform	<p>An Environmental Technology Platform is planned to be set up through a private sector on a viable business model, for facilitating information on technologies related industrial waste and wastewater, and to facilitate technology transfer.</p>
<input type="checkbox"/> Green rating and certification system for industrial areas	<p>A green rating and certification system is proposed to be developed for industrial areas so that these serve as benchmarks for planning new industrial area or retrofitting old industrial areas, besides being able to assess how good or bad is an industrial area from environment and sustainability perspective.</p>
<input type="checkbox"/> Policy framework/guidelines/plans/programmes	<p>The SEIP project will work on measures, policies, plans and promotional funding schemes on the national level and in selected states to support the promotion of an efficient, environment and climate friendly industrial development.</p>
<input type="checkbox"/> Management structures for industrial areas	<p>The existing industrial areas in India and specifically those covered under SEIP Project (GIDC Estate Vapi, SIIDCUL IIE Haridwar and DSIIDC's industrial areas in Delhi) do not have clearly defined management structures to manage the industrial areas. Hence, planning and managing of the infrastructure and services in these industrial areas is becoming difficult. The SEIP project proposes to come up with viable solutions based on Indian and international experiences.</p>
<input type="checkbox"/> Online monitoring systems for industrial wastewater	<p>The environmental regulatory agencies (CPCB/SPCBs) have been constantly tightening the monitoring systems so that not only the conditions of wastewater discharges from industries and industrial areas can be checked, but also the defaulters can be identified and actions taken. Recently, CPCB has suggested online monitoring systems to be installed by the industries and CETPs. However, there are a number of problems associated with choosing the right equipment, after sales services, calibration of equipment etc. CPCB and SPCBs are also working on monitoring of receiving water bodies, such as River Ganga, River Yamuna and River Damanganga that receive industrial wastewater.</p> <p>The SEIP project will work on solutions for improved online monitoring systems, which would help in better monitoring of the pollution levels and improvements from time to time.</p>
<input type="checkbox"/> Skills development for operators (technicians, helpers) of industrial wastewater treatment plants	<p>The industrial wastewater treatment plants has several jobs associated, viz. support staff, supervisory staff, managerial staff etc. depending on the size of the treatment plants. In association with the Skill Council for Green Jobs of the National Skill Development Corporation, the SEIP project is working on skills development for technicians and helpers of the ETPs/CETPs in Vapi, Haridwar and Delhi. The improved skills are expected to improve the operation of the treatment plants, thereby reducing pollution levels.</p>



## Annexure 4: MOM-DSI IDC\_GIZ\_CETP Societies on identification of CETPs in Delhi

### Report on the meeting on identification of two CETPs for Delhi [Sustainable and Environment-friendly Industrial Production Project]

**Date and Venue:** 14<sup>th</sup> December 2016, Conference Hall DSI IDC, Connaught place

#### Participants:

S.No.	Name	Organisation
1.	Mr. Ajay Mittal	Chief Engineer, DSI IDC
2.	Mr. Sunil Kumar	Executive Engineer, DSI IDC
3.	Mr. Sharat Kumar	SE, Environment DSI IDC
4.	Mr. M.L. Siddiqui	Environment Engineer, DPCC
5.	Mr. Prem Prakash	CETP Society Wazirpur
6.	Mr. S.K. Tandon	Gen. Secretary, Confederation of CETP societies, Delhi
7.	Mr. Kuldeep Khanna	Okhla Industrial area
8.	Mr. A.K. Madan	Dy. Commissioner of Industries, GNCT Delhi
9.	Mr. Ravi Kaushik	Section officer, MoEFCC
10.	Mr. Ravi Sood	Badli CETP society
11.	Mr. Sushil Gupta	Badli CETP society
12.	Mr. Ashok Kumar	CETP society Nangloi
13.	Mr. Neeraj Sehgal	CETP society Mayapuri
14.	Mr. Hitesh Sharma	CETP society Mayapuri
15.	Mr. Ramnath Sharma	CETP society Naraina
16.	Mr. N. Raghu Babu	Project Director, GIZ-SEIP
17.	Mr. Lalit Sharma	Senior Technical Advisor, GIZ-SEIP
18.	Mr. Ashish Kumar	Technical Advisor GIZ-SEIP
19.	Mr. Cowlagi Sripathi	Technical Advisor, GIZ-SEIP
20.	Ms. Riti Samanta	Jr. Technical Advisor, GIZ-SEIP
21.	Mr. Nitin Suri	Admin Assistant, GIZ-SEIP

### **Purpose of the workshop:**

- To finalise two CETPs out of 13 for performance improvement under SEIP Project
- Develop a strategy for providing various interventions under the project

### **Summary of discussions and decisions taken:**

Mr. Raghu Babu started the discussions with a brief on the project. He said that it has been suggested in earlier meetings to focus on two CETPs Okhla and Lawrence Road to be included in the SEIP project for providing various interventions on performance improvement. He also highlighted that the Confederation of CETP societies were of the view that they have not been invited when the two CETPs (Okhla and Lawrence Road) were chosen for the project and they demanded a discussion with all stakeholders of the project on this aspect.

Mr. Raghu Babu explained that the following are the broad list of interventions to be provided under this project.

- CETPs-Study of inflow of wastewater in terms of quality, quantity, discharge profiles from industry, slum dwellings, residential building to CETPs
- Technical- Waste water treatment in ETPs of individual industries and monitoring of the results
- Skill development
- Business models to operate the CETPs and make it economically viable
- Solutions on the management structures

To offer the above interventions and achieve mutual benefits of reducing the water pollution by 20% the project objective he insisted that co-operation from all stakeholders is of prime importance.

The approach would be in various phases as per the following.

- Data collection for pre-feasibility study with the German experts
- Diagnostics on investments, design etc.
- Implementation of improvement measures

The discussions moved to the finalization of two CETPs and the members discussed on the various criteria for selection such as trouble prone waste water discharges and lack of infrastructure facilities for proper conveyance to the CETPs, DPCC and DSIIDC conveyed that they have all data and would be provided to GIZ and the German Experts who would be deriving the required solutions.

Against this background the members finally decided on **OKHLA Industrial area CETP AND LAWRENCE ROAD CETP** as the two CETPs to be included in the project.

In addition to this on behalf of the Confederation of CETP societies Mr.S.K.Tandon General Secretary also agreed to provide all possible support for the project related to the two CETPs.

Mr. Raghu Babu insisted that the best practices of Mayapuri CETP on discharge of treated waste water of tertiary standards for use in Delhi Transport Corporation (DTC) for cleaning purposes should be promoted in other CETPs also. He also suggested that the success stories in the two selected CETPs would be made available for replication in all the other 11 CETPs of Delhi at a later stage.

Mr.Ravi Sood of Badli CETP society suggested that all other 11 CETPs need to be involved in the project through regular meetings for information sharing on the activities and progress.

He also suggested a Whatsapp group could be created specifically for this purpose for sharing of information. GIZ and all the members welcomed this suggestion.

Mr.Ravi Kaushik suggested that the Ministry of Environment Forest Climate Change Government of India would provide all support and assistance in realizing the objective of the project.

The meeting ended with the following take away points.

- Okhla and Lawrence road CETPs are selected for the SEIP project in Delhi. Patparganj is the industrial area on which activities are already progressing. The industrial areas associated with these two CETPs would be offered the following broad interventions
  - Improvement of CETPs and planning of new CETP in Patparganj

- Improvement of ETPs (10 nos.) from three sites chosen from various sectors (ex: Electroplating, service stations etc)
- Environment improvement in industries (50 nos.) from the three sites focusing on resource efficiency improvement, saving measures on water, energy and material consumption
- Improvement of conveyance systems pertaining to select industrial zones in the three sites
- DSIIDC suggested they would call for such a meeting bi-monthly to discuss the activities and the progress.
- DSIIDC also suggested that it would conduct a joint meeting with Lawrence road for discussing the way forward along with the Confederation of CETP societies as soon as possible.

## Annexure 5: Report on the Planning Workshop at Patparganj industrial estate

**Date and Venue:** 1<sup>st</sup> September 2016, Conference Hall of the Indian Institute of Packaging, New Delhi

### Participants:

S.No.	Name	Organisation
22.	Mr. Sanjay Gaur	President, PFEA
23.	Mr. Sunil Puri	Secretary, PFEA
24.	Mr. S.K. Maheshwari	Gen. Secretary, PFEA
25.	Mr. C.K. Jain	Industry representative Plot No. 335
26.	Mr. V.V. Sharma	FIE
27.	Mr. Sharat Kumar	Superintendent Engineer, DSIIDC
28.	Mr. Anurag	Industry representative Plot No. 216
29.	Mr. Sanjeev Gupta	Industry representative Plot No. 250
30.	Mr. Nand Lal Sharma	Industry representative Plot No. 439
31.	Mr. Surineh Arora	Industry representative Plot No. 412
32.	Mr. Saravjit Singh	Industry representative Plot No. 295
33.	Mr. C. Jain	Industry representative Plot No. 184
34.	Mr. Lekhraj Singh	Industry representative Plot No. 383
35.	Mr. Iqbal	Industry representative Plot No. 115
36.	Mr. R. Rana	Industry representative Plot No. 251
37.	Mr. Rajesh Chadha	Industry representative Plot No. 159
38.	Mr. Ankit Kumar	Uttam Toyota
39.	Mr. Vijay Arora	Industry representative
40.	Mr. Rakesh Sharma	Chandu Press
41.	Mr. B.K. Bharti	Bul Bul
42.	Mr. J. Chaudhury	Hari Darshan
43.	Mr. Vipin Dhiman	Super Engg. Works
44.	Mr. Lalit Tomar	Industry representative
45.	Mr. Sanjeev	Industry representative Plot No. 361
46.	Mr. Amit Gupta	Industry representative Plot No. 278
47.	Mr. S. Rastogi	Industry representative Plot No. 169
48.	Mr. Sanjay Jain	Industry representative Plot No. 478
49.	Mr. Md. Shahnawaz	Industry representative Plot No. 324
50.	Mr. Kali Charan Mhato	Industry representative Plot No. 534
51.	Mr. Bhupesh Sharma	Industry representative Plot No. 198
52.	Mr. R.K. Jain	Industry representative Plot No. 236
53.	Mr. N. Raghu Babu	Project Director, GIZ-SEIP
54.	Mr. Cowlagi Sripati	Technical Advisor, GIZ-SEIP
55.	Ms. Riti Samanta	Jr. Technical Advisor, GIZ-SEIP
56.	Mr. Nitin Suri	Admin Assistant ,GIZ-SEIP



### **Purpose of the workshop:**

- Finalise activities and broad timelines for the Patparganj Industrial Area under SEIP Project
- Define project management structures
- Identify key stakeholders and cooperation landscapes of agencies to be involved

### **Summary of discussions and decisions taken:**

Mr. Cowlagi Sripathi from GIZ made a presentation on activities and their status. Copy of the presentation is attached. Discussions were moderated by Mr. Raghu Babu from GIZ. The decisions taken are given below.

1. It was decided to focus on the following activities for Patparganj industrial estate to fulfil the target of pollution reduction by 20%:
  - Wastewater management in the industrial area.
  - Improvements in individual industries (automobile service stations, electroplating etc.).
  - Environmental drives (waste dumps removal, awareness to street vendors).
  - Retrofitting of the industrial area to Green Industrial Area (management structures, GIS database, public toilets, parking facilities, greenery etc.).
2. On wastewater management, the following aspects are to be covered:
  - improvement of ETPs of service stations and electroplating industries
  - setting up of centralised and decentralised treatment system (CETP/STPs) for wastewater discharged from industries,
  - recycle/reuse/ ZLD of treated wastewater,
  - retrofitting of certain portions of conveyance systems,
  - cleaning up of sewerage system,
  - improvements in storm water management including rainwater harvesting,
  - online/continuous monitoring systems, and
  - Skills development of operators of ETPs.
3. On online monitoring system, it was decided that only water polluting industries, which have ETP will participate in the online monitoring survey.
4. As industries are concerned with water supply and wastewater recycle, water distribution network should also be taken into consideration while planning solutions for wastewater management.
5. Decisions taken on skills development of ETP/CETP operators (helpers/technicians):
  - Industries agreed to participate in the survey.
  - Industry owners should be given a short crash course on ETP management for better understanding.
  - As often it is difficult to depute technicians and helpers for training, training modules should be developed through videos and circulated among the industries.
6. On the steering structures at the industrial area level the following decision had been taken:
  - A Project Advisory Committee would be set up to monitor, review and advice the project.
  - The Committee would be chaired by the President of PFEA and will have members from DPCC, DSIIDC and representatives of member industries.
  - The Committee meet once every month on 1st Tuesdays.
7. Three "Facilitation Teams" would be set up for each of,
  - Water pollution reduction – Coordinator: Mr. xxxxxx
  - Pollution reduction and resource efficiency in individual industries – Coordinator: Mr. xxxxxx
  - Environmental drives and outreach – Coordinator: Mr. xxxxxx

These three committees will meet on monthly basis and invite industries to participate in the discussions and will identify measures that could be implemented and would follow-up to showcase success stories.

8. An Environmental Drive will be taken up by PFEA in 15 to 25 October (to be completed before Diwali) with focus on:
  - cleaning up of sewers and drains, and pollution reduction from wastewater
  - controlling of pollution caused by street vendors in the industrial area
  - pollution reduction and resource efficiency in individual industries
  - pollution reduction

The “Facilitation Team - Environment Drives” of the PFEA (to be constituted) will plan and coordinate the activities.

9. Some of the key stakeholder agencies identified include DIIDC, PFEA, service station in PIA (Patparganj industrial estate), electroplating industries in PIA, Delhi Jal Board, DPCC, CPCB, MoEFCC (CETP scheme), DIPP (IIUS scheme) etc. PFEA and GIZ will work further on to elaborate the cooperation landscape and strategies to associate such agencies in the SEIP project activities for PIA.

10. A few other issues raised by PFEA for consideration:

- Rain water harvesting within the industrial area (both building level and site level) should be done properly. Two unused firefighting water tanks can be used for rainwater storage which will be further used in horticulture within the industrial area.
- For water distribution system, there should be different lines for, a) drinking water, b) treated wastewater, and c) firefighting water.
- Vendors should be educated on pollution being created by them so that they can also participate actively in pollution reduction in Patparganj industrial estate.
- Sewers get periodically choked due to silt and solids. Cleaning up of sewers in the industrial area should be facilitated by DSIIDC.
- For implementation of the above mentioned tasks, DSIIDC should treat Patparganj industrial estate as a special case and should initiate funding for the improvement of environment and infrastructure (waste water conveyance, waterline relay, development of public conveyance and parking areas within the industrial area etc.).

11. For retrofitting of the industrial area to Green Industrial Area, the activities include:

- Management structures for better management of the Patparganj industrial estate,
- GIS database – plot-wise information, infrastructure status in the industrial area, environmental quality data etc.
- Setting up of public toilets
- Development of parking facilities to overcome haphazard parking along roads
- Increasing greenery in the industrial estate to at least 5% from the current 0.8%, including improving buffer zones, redevelopment of parks etc.

12. Broad timelines identified for major activities in Patparganj industrial estate to be taken up under SEIP Project are given at Annex. The details cover questionnaire surveys for data gathering, engagement of consultants by GIZ, implementation of pollution reduction measures etc.

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**Annex. Broad timelines identified for major activities in Patparganj industrial estate under SEIP Project**

**1. Planning of new CETP/STP, Recycle/reuse**

Tasks	Action by	By when
<b>a) Conveyance systems for waste water</b>		
Secondary information collection – drainage/conveyance designs & specifications	GIZ, DSIIDC	October 2016
Survey and mapping (GIS) of existing conveyance, storm water drainage network	GIZ, DSIIDC	October 2016
Identification of problematic stretches for upgradation and assessment of improvement needs in conveyance, storm water drainage	GIZ, PFEA, DSIIDC	October 2016
Assessment of baseline pollution levels	GIZ	October 2016
Cleaning up of sewers	PFEA, DSIIDC	By October 2016
<b>b) Inventory of wastewater discharges</b>		
Develop questionnaires	GIZ	Sept. 2016
Circulation of questionnaires (PFEA)	PFEA	Sept. 2016
Survey of sample industries	GIZ	Sept. 2016
Completion of survey	GIZ	Oct. 2016
Inventory of ETPs	GIZ,PFEA	Oct. 2016
Selection of ETPs for upgradation/ modernization	GIZ,PFEA	Oct. 2016
Inventory of water requirements (industrial use, gardening, fire etc.)	GIZ,PFEA	Oct. 2016
<b>c) Water recycle/reuse potentials</b>		
Inventory of requirements – industry, horticulture etc.	GIZ, PFEA	October 2016
<b>d) Engagement of international consultants</b>		
Engagement of consultants	GIZ	Jan. 2017
Proposal of solutions	GIZ	July, 2017
Implementation of solutions	PFEA, DSIIDC	Oct. 2017 onwards
Replication measures	PFEA, DSIIDC	Jan 2018 onwards
<b>e) Monthly Facilitation Team meetings - wastewater pollution reduction (Information exchange, experience sharing on ZLD etc., identification of measures to be implemented voluntarily, documentation etc.)</b>		
Organize monthly meetings and identify measures to be implemented [5 measures in 6 months]	PFEA	First Tuesday of every month
Follow-up	GIZ	Regularly
Document success stories on pollution reduction	GIZ	Regularly
<b>f) Month long environmental drives (two events in a year)</b>		
Cleaning up drains, sewers, repairs, maintenance, solid Waste management by street vendors	PFEA	15 Oct. to 25th Oct. 2016
Documentation of successes	GIZ	Oct. 2016
<b>g) Participation in International/National events</b>		
Information on wastewater /waste management (seminars, trade fairs etc.) to be provided to PFEA	GIZ	Regularly
Participation	PFEA, industries	Regularly

## 2. Environment Improvement in Industries

Tasks	Action by	By when
<b>a) Inventory of industries</b>		
Develop questionnaire	GIZ	Sept. 2016
Circulation of questionnaire	PFEA	Sept. 2016
Survey of sample industries	GIZ	Sept. 2016
Completion of survey (GIZ)	GIZ	Nov. 2016
<b>b) Monthly Facilitation Team meetings (Information exchange, experience sharing on BAT etc., identification of measures to be implemented voluntarily, documentation etc.)</b>		
Organize monthly meetings	PFEA	First Tuesday of every month
Follow-up	GIZ	Regularly
Document success stories on pollution reduction and resource efficiency	GIZ	Regularly
<b>c) Month long environmental drives</b>		
Environment drives for improvements in industries	PFEA	15 to 25 Oct. 2016
Documentation of successes	GIZ	Oct. 2016
<b>d) Engagement of international consultants</b>		
Engagement of consultants	GIZ	Jan, 2017
Providing of solutions	GIZ	July 2017
Implementation of solutions	PFEA, industries	Jan 2018
Replication measures	PFEA, DSIIDC	Feb 2018

## 3. Online/continuous monitoring system for ETPs

Tasks	Action by	By when
<b>a) Survey/information collection</b>		
Develop questionnaire	GIZ	Sept. 2016
Circulation of questionnaire	PFEA	Spt. 2016
Survey of sample industries	GIZ	Sept. 2016
Completion of survey	GIZ	Sept. 2016
<b>b) Engagement of international consultants</b>		
Engagement of consultants	GIZ	Sept. 2016
Providing of solutions	GIZ	Oct. 2016
Implementation of solutions	PFEA, industries	Dec 2016
Replication measures	PFEA, DSIIDC	June 2017

## 4. Skills development – ETP operators (Helpers, Technicians)

Tasks	Action by	By when
<b>a) Inventory of qualifications of technicians and helpers</b>		
Develop Questionnaire	GIZ	Sept 2016
Circulation Of Questionnaire	PFEA	Sept 2016
Survey Of Sample Industries	GIZ	Sept 2016
Completion of survey	GIZ	Oct 2016
<b>b) Participation in skills courses and competitions</b>		
Courses to be organized by GIZ	GIZ	To be decided
Participants (upto xx nos.) from Patparganj	PFEA	To be decided
Post training survey	GIZ	To be decided

## 5. Retrofitting of Patparganj industrial estate into Green Industrial Area

Tasks	Action by	By when
a) GIS database for Patparganj industrial estate	GIZ	March 2016
b) Development of public toilets (3 nos)	DSIIDC/PFEA	March 2017
c) Development of parking spaces [13 nos]	PFEA, DSIIDC	July 2017
d) Development of parks, buffer zones, green spaces	PFEA, DSIIDC	Oct 2017
e) Removal of encroachments	PFEA, DSIIDC	Dec 2017

## 6. Other Activities for Delhi

Tasks	Action by	By when
a) Management structure for Patparganj industrial estate		
Engagement of German consultants	GIZ	Feb 2017
Solutions from the German experts	GIZ	April 2017
Implementation	DSIIDC	October 2017
b) Mapping of water supply network		
Inventory, mapping of water supply network in database for Patparganj industrial estate	GIZ, DSIIDC	October 2016
Identifying stretches needing retrofit through field surveys, map of new areas to be covered.	GIZ, DSIIDC	October 2016
Detailing of solutions	GIZ	
Documentation	GIZ	

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## Annexure 6: Minutes of meeting - First monthly meeting of electroplating group Patparganj industrial estate

**Date and Venue:** 20<sup>th</sup> October 2016, PFEA office, Patparganj industrial estate

### Participants:

S.No.	Name	Organisation
1.	Mr.Sanjeev Gupta	Plot no 250
2.	Mr. Rajesh Rana	Plot no.249
3.	Mr. S.K. Maheshwari	Gen. Secretary PFEA
4.	Mr. C.K. Jain	Plot No. 335
5.	Mr. Nand Lal Dhawan	Plot No.439
6.	Mr. Anurag	Plot No. 216
7.	Mr. Rajesh Chaudhary	Plot No.159
8.	Mr. Surineh Arora	Plot No. 412
9.	Mr. Cowlagi Sripati	Technical Advisor, GIZ-SEIP
10.	Mr. Nitin Suri	Admin Assistant ,GIZ-SEIP

### Purpose of the workshop:

- To discuss on the strategies to achieve 5R6M
- To define the role of the group in
  - Planning of new CETP or to utilize the existing CETP nearby
  - Upgradation/modernization of existing ETPs
  - Improvement of operation and maintenance of existing ETPs
  - Improvement of production processes
  - Training of skilled and unskilled workers in electroplating units
- To discuss on the way forward towards the activities for the electroplating group

### Summary of discussions and decisions taken:

Mr. Cowlagi Sripati from GIZ made a presentation on activities and their status. The participants brought some of the following points as part of their immediate action plan.

1. The members agreed with 5R6M strategy proposed by GIZ in the following activities. Each one of the following aiming to achieve desired results in the 6 months
  - Planning of new CETP
  - Upgradation/modernization of existing ETPs
  - Improvement of operation and maintenance of existing ETPs
  - Improvement of production processes
  - Training of skilled and unskilled workers in electroplating units
2. The members reaffirmed that the industrial area requires a CETP and had informed that the NGT has ruled out the possibility of using the Jhillmill CETP for treating the industrial effluent generated from PFEA
3. As a first step to 5R6M strategy it was decided to focus on conducting a walk through water audit immediately at each one of the units present in the meeting. Further PFEA would co-operate with GIZ to provide the relevant data from the rest of the units comprising of service stations, packaging and printing units.
4. This would help PFEA
  - To estimate the volume of waste water generation leading to the planning of a CETP- GIZ to support



- To estimate the annual fresh water consumption and hence derive strategies towards water conservation-GIZ to support
5. This study would help PFEA various methods of water conservation, improvement in production process, methods to reduce, reuse and recycle, augmentation of water resources through rainwater harvesting and ultimately waste water management
  6. PFEA agreed to provide all relevant data towards the questionnaire already circulated on water and waste water during this study.
  7. PFEA requested GIZ to conduct this study at the earliest before the end of October 2016 for at least 5 to 6 units who were present in the meeting today.
  8. PFEA will also cooperate with GIZ
    - In developing strategies upgradation/modernization of existing ETPs
    - Improvement in production processes
    - Improvement in operation and maintenance of ETPs
  9. GIZ suggested relevant consultants would be engaged for the above activities before the end of 2016
  10. PFEA was constantly reiterated that whatever activities that would be planned should led to the formation of a CETP
  11. PFEA assured support in bringing all relevant data from all the water consuming and waste water generating units including electroplating, service stations, packaging and printing units present in PFEA
  12. PFEA requested GIZ to support them in developing suitable water harvesting recharge structures in the available land of DSIIDC
  13. The review of the activities would be taken up next month tentatively on the 23<sup>rd</sup> of November 2016 at PFEA with the same group

## Annexure 7: MOM- DSIIDC\_GIZ -Discussion on finalisation of the co-operation agreement

**Date and Venue:** 16<sup>th</sup> November 2016, Conference room, DSIIDC, Bombay life building, Connaught circus, New Delhi

### Participants:

1. Mr. Ajay Kumar Mittal – CE, DSIIDC
2. Mr. Sarath Kumar – SE, DSIIDC
3. Mr. C. Sripati – Technical Advisor, GIZ
4. Ms. Riti Samanta – Junior Technical Advisor, GIZ

### Key point of discussion:

- Cooperation agreement
  - Steering committee and facilitation teams
  - Data collection in Patparganj industrial estate
  - Construction of new cetp for Patparganj industrial estate
  - Baseline of waste water conveyance system
  - Environment improvement drive: more open space development
  - Status of Lawrence road
  - Monthly meeting in Patparganj industrial estate
1. Mr. Mittal, CE, DSIIDC had gone through the Cooperation Agreement and suggested certain changes. Mr. Sarath Kumar was asked to sit with GIZ team make the changes on behalf of DSIIDC. GIZ was informed after the changes were made in the agreement as per DSIIDC ,another final draft should be send to DSIIDC along with a letter and MOM of the 9<sup>th</sup> September ministry meeting. Then the formalities will be done by DSIIDC and will get signed by the concerned authority from DSIIDC.
    - They had cleared their role and they will not be able to provide any financial support. They may be can arrange for resources from other state parties.
    - DSIIDC is not a regulatory authority so they cannot make policy for industrial development under SEIP.
  2. On Steering Committee and facilitation team, GIZ convinced DSIIDC to formalise the state steering committee whereas the site steering committee and facilitation teams will be formalised by GIZ and PFEA. Formal letters would be issued by DSIIDC shortly on this.
  3. DSIIDC is very keen in constructing a CETP in Patparganj industrial estate. For that they need GIZ to make the base study. In the same line for waste water conveyance in Patparganj industrial estate, they asked GIZ to get in touch with Mr. Sandeep, JE, and DSIIDC.
  4. Regarding discussion on Environment Improvement Drive, and another open space development Mr. Mittal pointed out they cannot give financial support for such things but they can hand it over to PFEA if they are willing to do it themselves.
  5. On discussion over Lawrence Road, DSIIDC still trying to get in touch with the association. Further steps under SEIP are not clear.
  6. Tentative date for next monthly meeting in Patparganj industrial estate is fixed on 5th or 6th December, 2016. Mr. Mittal assured his presence in the meeting where he will clarify the role GIZ and requirement of SEIP.

The meeting ended with assurance of full co-operation from DSIIDC to GIZ for SEIP.

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## Annexure 8: MOM SEIP-Delhi stakeholders meeting

**Date and Venue:** 6<sup>th</sup> February 2017, Conference Hall DSIIDC, Connaught place

### Participants:

S.No.	Name	Organisation
1.	Mr.K.R.Meena	CMD, DSIIDC
2.	Mr.Ajay Mittal	CE, DSIIDC
3.	Mr.Sharma	CE, DSIIDC
4.	Mr.Sharath Kumar	SE, Environment, DSIIDC
5.	Mr.S.K.Maheshwari	General Sec. Patparganj Functional Industrial Association
6.	Mr.Sunil Puri	Senior Secretary, Patparganj Functional Industrial Association
7.	Mr. Sanjeev Gupta	Secretary, Patparganj Functional Industrial Association
8.	Mr.Kuldip Khanna	Vice President Okhla Industrial area CETP
9.	Mr.Bhasin	Lawrence road industrial area CETP
10.	Mr.Deepak Kumar	Patparganj Functional Industrial Association
11.	Mr. Cowlagi Sripati	Technical Advisor, GIZ-SEIP

### Purpose of the workshop:

- To seek support from the industrial associations of Patparganj, Lawrence road CETP and Okhla CETP for SEIP Project
- Prepare an action plan for data collection and develop implementable solutions

### Summary of discussions and decisions taken:

Mr. C.Sripati started the discussions with a brief on the project. He introduced the project activities in brief and gave an update on the status of the various activities at Patparganj, Okhla and Lawrence road. He also said Patparganj has been providing complete support in reaching out to all possible industrial units for sharing information on the process of manufacturing, water consumption and waste water generation. Till date 23 units have been covered towards data collection of which 9 units have installed ETPs and are functioning. He said atleast 50 units would be the target for data collection towards implementing the following activities

1. Improvement of ETPs 10 No.s
2. Environment improvement in industries 30 No.s
3. Prefeasibility of new waste water treatment plant in Patparganj

Sripati explained that the industrial area CETP society of Okhla and Lawrence road CETP society are also providing support. However they have to constitute the committee as a part of the formal structures agreed in the project. This include the nomination of one senior office bearer for the Project Steering Committee at the State level, formation of project advisory committee at the site level and facilitation teams for cleaner production, waste water management and environment improvement drives. Similar support was envisaged as that of Patparganj from Okhla and Lawrence road as well for data collection for the following activities.

1. Improvement of ETPs 10 No.s
2. Environment improvement in industries 30 No.s
3. Improvement in performance of CETP
4. Retrofit/repair of existing conveyance systems of waste water and storm water drainage systems

To offer the above interventions and achieve mutual benefits of reducing the water pollution by 20% the project objective he insisted that co-operation from all stakeholders is of prime importance.

The approach would be in various phases as per the following.

1. Data collection for pre-feasibility study with the German experts
2. Diagnostics on investments, design etc.
3. Implementation of improvement measures

CMD DSIIDC insisted that all industry association members should provide data support and co-operate with GIZ in achieving the objective of the project. He also requested all associations to constitute the advisory committee at the site level and form the facilitation teams as suggested by GIZ. He said DSIIDC would be issuing a letter to President/Vice President of associations to this effect and requested their full participation. GIZ informed that major chunk of the project would be completed within the next 8 to 10 months and hence requested all for their expedited support and co-operation.

GIZ also conveyed that they have German Experts have appointed for deriving the required solutions and would arrive in the 2<sup>nd</sup> week of February 2017 for field visits and discussions.

Against this background the members **OKHLA Industrial area CETP AND LAWRENCE ROAD CETP** confirmed that they would provide all possible support. They also invited GIZ to visit them immediately for an interaction on the above and plan next steps.

CMD DSIIDC requested GIZ to explore the various funding opportunities for the various implementable solutions as suggested by GIZ and German experts.

The meeting ended with the following take away points.

13. DSIIDC will issue letter(s) to three industrial associations at Patparganj, Lawrence road and Okhla requesting them to support GIZ and provide all possible data for successful completion of the project
14. DSIIDC urged all industrial associations to form the advisory committee and facilitation teams at the individual sites.
15. GIZ would keep all data confidential without indicating any names of the companies approached during the site visits
16. Okhla and Lawrence road to expedite the process of data support to GIZ in consultation with their office bearers.

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***Note: This MOM is a Draft Version, DSIIDC will issue the final version.***

## Annexure 9: MOM DSIIDC\_GIZ\_PFEA\_OKHLA\_KESPIA

### MOM

Topic of discussion: **Management Structures for Industrial Parks in India**

**Meeting with PFEA, 14<sup>th</sup> February, 2017, Meeting room, PFEA**

S.No	Name	Org./Designation
1	Sh. Sharat Kumar	SE (ENV), DSIIDC
2	Asit Nema	Consultant Hydroplan , Germany
3	Dr. Muntjeer Ali	National expert Hydroplan, Germany
4	Palash Kumar Saha	Sintef , Norway
5	S.K. Upadhyay	SE (IA) DSIIDC
6	Kuldip Khanna	Vice President OIA CETP Society
7	S.K. Maheshwari	General Secretary PFEA Entrepreneur Association
8	Sanjeev Gupta	Secretary PFEA Association
9	Sunil Puri	Sr. Secretary
10	C.K. Jain	Member PFEA Association
11	Deepak Kumar	Ex. Member PFEA Association
12	Ashish Kumar	Technical Advisor, SEIP, GIZ
13	C. Sripati	Technical Advisor , SEIP, GIZ
14	Riti Samanta	Junior Technical Advisor, SEIP, GIZ
15	Nitin Suri	Administrative Assistant, SEIP, GIZ
16	Pankaj Rajpoot	Intern, SEIP, GIZ

#### Key point of discussion:

1. Observations from visits on 14<sup>th</sup> February and 15<sup>th</sup> February
2. Problems faced by industries
3. Role of DSIIDC
4. Application and usefulness of DIDOMA Act
5. Main players in management of Industrial Areas
6. Ownership of Land in industrial areas
7. Tax, cess paid by industries to different Government body.
8. Good practices in other countries like Germany, Turkey ,China, and Indonesia etc.
9. Role of regulatory body DPCC in industrial areas in Delhi
10. Analysis of PPP model (Advantages and disadvantages) in Bawana and Narela industrial area looked after by DSIIDC.

#### Summary of discussion:

1. The workshop started with a welcome note from Cowlagi Sripati, to introduce SEIP projects role in Management Structure for Industrial Areas in Delhi, followed by a small introduction by all the participants.
2. Dr. Michael Weber gave a presentation on his observations in Industrial Parks in Delhi and also his understanding from the his meeting with the DSIIDC officials and industrial Association/ CETP society members in the three sites , i.e. Patparganj industrial Estate, Kespia CETP Society, Okhla Industrial Area (Phase I and Phase II) CETP Society.
3. Dr. Weber also introduces the best practices from Turkey. Introduce the concept of KPI (Key Performance Indicator).
4. Dr. Weber also draws attention to the ground water depletion problem leading to sinking ground level in the city of Mexico due to unplanned ground water uses by the city.

5. After the presentation there is session of discussion among Dr. WEBER and representatives from PFEA and OKhla Industrial Area CETP Society.
6. The concerns raised by PFEA and Okhla Industrial Area (Phase I and Phase II) CETP Society are:
  - Though industries are paying house tax and maintenance tax to MCD they are responsible for maintaining the cleanliness and other infrastructure within the industrial area.
  - Fresh water resource and supply is a major concern for the industries.
  - All industries are not member of the association and they are not even paying for the maintenance done by association.
  - Association does not have any fixed finance resource so it is hard for them to look after all the services.
  - Industries got harassed by different civic bodies.
  - Sometimes parking for the trucks and tempos in the designated parking areas are controlled by mafias which is a major concerns of industrialists.
  - PPP model in Bawana and Narela was working well in the initial phase but now here are many problems faced by the industrialists functioning there.
7. The concerns raised by DSIIDC are:
  - DSIIDC is concern about applicability of DIDOMA Act. Though all industries are supposed to come under DSIIDC. But practically that didn't happened till date.
  - CETP Act is not proper as it does not clearly say who will be accountable in case CETP is not working properly.
  - The role of DSIIDC and The Department of Industries, Delhi in maintenance of Industrial Areas and CETP is not clear. Not even industrialists/ industrial association are clear to whom they are supposed to complain in case of any anomaly.
8. CETP Societies are allowed to cut off the electricity and water supply in case any industry is not paying the fees but they are unable to restore it. Thus CETP Societies are not able to use the rule.
9. DSIIDC, Industrial association, CETP Society and industries are anxious about who will form and fund the autonomous body in case it was developed as per GIZ's proposal.
10. Industrial association, CETP Society and industries also asked for and alternate solutions along with the autonomous body.

The meeting ended with a commitment from DSIIDC, Industrial association and CETP Society that they will give their feedback on the draft report once it was prepared so that a practical solution can be achieved on management structures for Industrial Areas in Delhi. The meeting ended with closing remarks from Sripati on behalf on GIZ.

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