



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

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

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

The project aims at mitigating environmental problems caused by industrial production focusing on industrial wastewater and solid waste management. During the project duration, technical solutions as well as business and management models to reduce acute environmental pollution and to improve resource efficiency in industrial production are piloted in five Indian industrial estates. Visible positive direct impacts of the solutions showcased are to improve conditions directly at the sites, and to unfold a strong signal effect leading to the replication and upscaling of solutions in industrial parks throughout India. Project activities focus on wastewater conveyance systems, the treatment, recycling and reuse of wastewater, waste management as well as the management and planning practices in the industrial areas. Solutions are piloted in 5 selected industrial areas located in the states of Delhi, Gujarat and Uttarakhand.

Further cross-cutting activities, such as the development of a market-driven training system for technicians and operators of effluent treatment plants, the development of industry-wide environmental standards, the work on a green rating system for industrial areas, and the setting up of a technology platform offering international exchange of best practice technologies target the improvement of enabling framework conditions for sustainable industrial production in India.

SEIP started in March 2015 and will run until February 2018 (with a likely extension of 12 months) and has a budget of EUR 6.5 million. A brief overview of the SEIP Project is given at Annexure 1.

## Activities for Delhi

- 1) **SOLUTIONS FOR CETP:** upgradation/modernisation, recycle/reuse of treated wastewater
- 2) **PLANNING OF CETP/STPs** for Patparganj Industrial Area
- 3) **ENVIRONMENTAL IMPROVEMENT** in 50 individual industries to reduce pollution and increase resource efficiency at company level
- 4) Demonstration of **IMPROVEMENT IN 10 ETPs** and replication
- 5) Improvement in **STORM WATER DRAINAGE AND WASTEWATER CONVEYANCE SYSTEMS**
- 6) Improvements through **CROSS-LEARNING AND FACILITATION**
  - a. environment drives
  - b. cleaner production
  - c. Waste water management
- 7) **MANAGEMENT OF SOLID WASTE** from the industrial area and CETP sludge as a part of an Indo-Norwegian project (SINTEF) on co-processing under SEIP
- 8) **MISCELLANEOUS**
- 9) **ANNEXURES**

### 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.

**Note: Due to lack of Co-operation from Okhla CETP Society, GIZ incorporated Mayapuri industrial area/CETP as a third site other than Patparganj Industrial Area and Lawrence Road Industrial Area under SEIP. The decision was taken along with DSIIDC.**

## 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 (according to NPC report). The operation of most CETPs is suffering due to a gap between installed and operational capacity due to low effluent supply (sometimes as low as 1/10 of the installed capacity). The CETPs are not able to function properly due to obsolete technology, conveyance problems in the industrial areas connected, a change in type of industries connected to the CETP, and due to existing business and management models. CETPs in Delhi need urgent upgradation in order to meet CPCB/DPCC standards. Under SEIP, GIZ provides technical support to DSIIDC to modernize two CETPs as a pilot.

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

The CETP at Lawrence Road offers physio-chemical treatment only. It receives sewage from industries and slum areas located in the industrial area. The mixture of effluents causes serious issues to their proper treatment. The CETP further receives much less wastewater than it was designed for and can, hence, not operate properly. Further, the business and management model of the CETP is in need of improvement.

Note: Due to a lack of Co-operation from the Okhla CETP Society, Mayapuri industrial area/CETP will substitute Okhla as a third site. This decision was taken with DSIIDC.

### Summary of progress so far:

- Data collection by GIZ team on CETPs, wastewater discharge from individual companies, conveyance systems (for Lawrence Road industrial area and Okhla Industrial Area). A reconnaissance survey was conducted in Lawrence Road IA to assess the state of the storm water drainage system, the sewer system, and the solid waste management system.
- List of industries and operational industries at Lawrence Road IA has been finalized and verified by the CETP society
- 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 German consultant (Hydroplan)
- Action plan for Patparganj presented by Hydroplan to the industry association and company representatives (10<sup>th</sup> March, 2017). Three options for Patparganj identified:
  - Option 1) Planning of a new CETP based on actual wastewater/effluent quality and generation from the industries in Patparganj Industrial Estate.
  - Option 2) Planning of a STP according to PFEA Patparganj Industrial Estates wastewater/effluent quality which is of domestic sewage quality. A small CETP would be set up covering a small set of polluting companies.
  - Option 3) Transportation of polluted wastewater/effluent through tankers to nearest existing CETP (Probably Jhilmil CETP) for treatment.
  - Hydroplan submitted problem identification report for Lawrence Road CETP and Mayapuri CETP in May 2017. GIZ provided and shared feedback on the report.
  - In June 2017, Hydroplan undertook sampling at Lawrence Road CETP. The results will be incorporated in the problem identification report.
  - Hydroplan presented their findings from Lawrence Road CETP in front of all stakeholders in a stakeholder review meeting conducted by DSIIDC, chaired by ED, DSIIDC on 13<sup>th</sup> July, 2017 at DSIIDC Connaught Place office. *Please refer Annexure 2 for details.*

### Progress for the current month:

- Sampling at Mayapuri CETP completed.
- Sampling at Lawrence Road Industrial Area CETP sludge and Mayapuri Industrial Area CETP sludge conducted.
- Hydroplan is working on the revision of their reports as well as the development of solutions based on stakeholders and GIZ's feedback.

## 2. Planning of CETPS/STPs for Patparganj Industrial Area

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### About the activity:

This activity aims at assessing the problems occurring at the CETPs and STPs. Subsequently, technically sound and economically efficient solutions are to be identified and implemented.

There are seven electroplating units (as identified in the PFEA directory 2013) in the Patparganj Industrial Area generating seriously polluting effluent as per DPCC reports. These units have individual ETPs installed. There are further a set of electroplating companies which are not associated with PFEA, and a few service stations causing serious water pollution according to PFEA. However, Patparganj Industrial Area does not have a CETP installed. The industrialists consider this as a cause of major concern.

### Summary of progress so far:

- Meeting with seven identified electroplating units (20<sup>th</sup> October 2016) to discuss problems faced by these units. Conclusion: serious need for CETP/STP within the industrial area for which a detailed level survey on water usage, wastewater generation, etc. is required.
- Questionnaire for data collection on wastewater 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 51 industries which have installed ETP completed by GIZ.
- Hydroplan presented their schedule to PFEA and Mayapuri Industrial area CETP society.
- Hydroplan is working on upgradation of ETPs. Detailed level studies in selected ETP's in Patparganj currently being undertaken (4 already completed).
- Lists of ETPs of Lawrence Road Industrial Area and Mayapuri Industrial Area were collected by GIZ Delhi team from CETP societies and DPCC.
- In May 2017, Hydroplan calculated effluent/waste water/sewage generation from Patparganj Industrial Area from secondary data.
- In May 2017, Hydroplan has identified several options for Patparganj Industrial Area which were discussed in a meeting with PFEA on 23<sup>rd</sup> May 2017.
- In May 2017, Hydroplan collected samples from two pumping stations in Patparganj Industrial Area to test and verify the quality of the wastewater discharged to Ghazipur Drain.
- In June 2017, Hydroplan submitted the Problem Identification Report for wastewater discharges for Patparganj Industrial Area. GIZ and stakeholders provided feedback on the report.

### Progress for the current month:

- Hydroplan presented their options for new CETP/STP for Patparganj Industrial Area to PFEA and DSIIDC in a meeting on 4<sup>th</sup> August 2017 in PFEA office in Patparganj. The CETP location was finalized with the consent of DSIIDC and PFEA. PFEA is further working on the details of the proposed CETP/STP. *Please refer to Annexure 2 for more details.*



Meeting with PFEA and DSIIDC

### **3. Environmental improvement in 50 individual industries to reduce pollution and increase resource efficiency at company level**

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The objective of this activity is to implement measures that will lead to either a reduction in pollution or an increase in resource efficiency thereby improving the environmental improvements of a company and demonstrating the effectiveness of the measure at hand.

Patparganj Industrial Estate is located on the bank of the Ghazipur Drain and is among the most developed estates of Delhi in terms of infrastructure and commerce. However, 12 seriously polluting and 70 polluting industries, which are producing thousands of litres of wastewater every day, are causing serious environmental problems. There are not many effluent treatment plants in the estate which is characterised by many small businesses producing wastewater with differing characteristics. There is no CETP installed. A great share of the wastewater is disposed in the drains without any prior treatment eventually ending up in Yamuna River. Another serious issue is posed by the badly functioning solid waste management system in the industrial estate.

50 companies at which technically sound and financially viable techniques and technologies are to be implemented, are selected at the three sites of in Delhi i.e. Patparganj Industrial Area, Lawrence Road also known as Keshavpuram Industrial Area and Mayapuri Industrial Area. The first step is the assessment for the scope of process optimisation and improvements in resource efficiency (materials, water, energy) before detailing and implementing the solutions suggested. Subsequently, the replication of successful solutions is to be enabled in other industries/industrial areas.

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

- Contract awarded to German consultant adelphi. Adelphi (local consultant TERI) started working in Delhi from March, 2017 onwards. Data collection undertaken at all three sites.
- Information event (10<sup>th</sup> March 2017) at Patparganj Industrial Area covering the topics of Environment Management in Industries through Resource Efficiency and Cleaner Production (RECP), ETP improvement, wastewater/effluent and storm water management was conducted at PFEA conference room. About 25 representatives from PFEA, industrialists, DPCC, Adelphi/TERI/Sternum Asia, Hydroplan and GIZ attended the event.
- Activities planned for Patparganj Industrial Area by adelphi and Hydroplan were presented to PFEA, industrialists and DPCC to understand their view point and expectations. Industries welcomed the idea and displayed high interest for participation in the project. It was agreed by PFEA that they will circulate the application forms to the industrial units and assured GIZ and team of experts of providing the filled-in application forms as soon as possible.
- Adelphi completed Rapid Assessment for three industries in Patparganj Industrial Area.
- Information event (19<sup>th</sup> April 2017) at Mayapuri Industrial Area covering the topics of Environment Management in Industries through Resource Efficiency and Cleaner Production (RECP), ETP improvement, wastewater/effluent and storm water management was conducted

at Mayapuri CETP Society. About 25 representatives of the Mayapuri CETP Society and Mayapuri Industrial Area association, industrialists, adelphi (represented by TERI), Hydroplan and GIZ participate in the event.

- Activities planned for Mayapuri Industrial Area by adelphi and Hydroplan were presented to participants to understand their view point and expectations.
- 25 rapid assessment reports have already been submitted to GIZ. The reports will be soon circulated to the respective industries.
- Adelphi submitted "Generic Problem Analysis Report final". GIZ Delhi team assessed the report.
- Adelphi presented their experience from the field and the bottlenecks faced by them while doing rapid assessment in three industrial areas in stakeholder review meeting on 13<sup>th</sup> July, 2017.

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

- Adelphi, along with GIZ, visited several industries at Patparganj Industrial Area, Mayapuri Industrial Area, and Lawrence Road Industrial Area and conducted rapid assessments. Adelphi completed rapid assessment in total 50 industries in these three industrial areas.
- Adelphi shortlisted 20 companies for Detailed Assessment. One Detailed Assessment has already been conducted.
- Adelphi's international experts will visit Delhi for workshops in the first week of September. They will conduct technical sessions with the industries selected for both Detailed Assessment and Rapid Assessment in three industrial areas in Delhi.

## **4. Demonstration of improvement in 10 ETPs and replication**

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

The aim of this activity is to provide technical assistance to industries for the upgradation of 10 ETPs at the three industrial sites. ETPs will be shortlisted based on type of industry, their water consumption and their effluent generation.

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

- Contract awarded to German consultant Hydroplan. Hydroplan started working in Delhi from 15<sup>th</sup> February 2017. Data collection in process at all three sites.
- Information Event at Patparganj Industrial Area (*see 3. Environmental improvement in 50 individual industries to reduce pollution and increase resource efficiency at company level*).
- Hydroplan assessed industries with ETPs in Patparganj Industrial Area and shortlisted four industries for upgradation.
- Information Event at Mayapuri Industrial Area (*see 3. Environmental improvement in 50 individual industries to reduce pollution and increase resource efficiency at company level*) (April 2017).
- GIZ Delhi team conducted initial surveys of four ETPs in Lawrence Road Industrial Area and seven ETPs in Mayapuri Industrial Area (May 2017).

#### **Progress of current month:**

- Hydroplan shortlisted ten industries with an ETP and collected samples for testing in Patparganj Industrial Area, Lawrence Road Industrial Area and Mayapuri Industrial Area.
- Hydroplan is revising the problem identification report for ETPs based on test reports from ETP samples.
- In parallel, Hydroplan is developing solutions for these ETPs.

## **5. Improvement in storm water drainage and wastewater conveyance systems**

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

The aim of this activity is to improve the conveyance system in two industrial areas i.e. Lawrence Road Industrial area and Mayapuri Industrial Area.

During the planning workshop conducted at Patparganj industrial estate on September 1<sup>st</sup>, 2016, the association expressed concerns about the existing wastewater conveyance system. Concern was raised regarding the depletion of the groundwater level within the industrial area and a lack of rainwater harvesting. The storm water collected in the industrial area is conducted through surface drains (partially open) to Ghazipur drain. These drains are often choked by 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.

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

- Base mapping of the existing land use, circulation network and green areas completed by GIZ (May-June 2016)
- GIZ team collected 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).
- A German consultant (Hydroplan) started work to improve conveyance systems in three sites identified. Collected base data was already shared with Hydroplan.
- GIZ Delhi team collected relevant base maps for Lawrence Road industrial; area from DSIIDC and DJB and handed over to Hydroplan.
- Draft of Problem Identification Report, *Existing Conveyance Systems*, was submitted by Hydroplan with details of Patparganj Industrial Area and Lawrence Road industrial Area (May 2017).
- Base maps for conveyance systems were collected from DSIIDC and Mayapuri industrial Area CETP Society and shared with Hydroplan.

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

- Digitalised map of conveyance network in Lawrence Road Industrial Area and Patparganj Industrial Area assembled from different maps collected from stakeholders prepared by GIZ interns and presented in 13<sup>th</sup> July Stakeholder Review Meeting (*refer Annexure 2 for details*).
- Hydroplan conducted a reconnaissance survey at Mayapuri industrial area and Lawrence Road Industrial Area to understand the present situation of wastewater conveyance and storm water drainage.
- Hydroplan completed sampling of ground water, effluent from conveyance and storm water drainage.
- SEIP-Delhi team and stakeholders commented the problem identification report. A revised version, as well as the development of solutions, are currently worked on by Hydroplan.

## **6. Improvement through cross-learning and facilitation**

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Under SEIP, facilitation teams on the topics of 1) Environmental Drives, 2) Cleaner Production and 3) Wastewater have been established at the industrial areas. Facilitation teams are supposed to provide a platform for discussion amongst entrepreneurs and other stakeholders of the park covering various topics and including the demonstration and sharing of best practices from industries. GIZ team will provide external 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.

### **a. Environment Drives**

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

Solid waste management is a major concern within Patparganj Industrial Estate. PFEA 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.

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 cleanliness drive during October 2016. As a result, almost 300 tons of garbage was removed from the industrial area through street cleaning and sweeping.
- PFEA conducted a plantation drive in an open space from June to September 2016 with 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.
- 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.
- 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.
- Proposal prepared for Environment Improvement Drive to take place in June 2017 in Patparganj Industrial Area by GIZ presented in front of PFEA on 5<sup>th</sup> April, 2017 meeting. After discussion with PFEA the modified proposal again presented on 7<sup>th</sup> April, 2017 in PSC Meeting in front of the committee and other stakeholders.
- GIZ met with CE, DSIIDC to discuss pending decisions from DSIIDC. CE directed concerned SE, DSIIDC to identify at least two spots in Patparganj Industrial Area where public toilets can be installed. He also informed GIZ that DSIIDC already started working on parking lots in front Udyog Sadan in Patparganj Industrial Area.
- GIZ organised a small meeting with GIZ IGEN team to discuss on the feasibility of installation of solar panels on Mr. Maheswari’s rooftop as a pilot case. Discussion is under process.
- GIZ informed PFEA (23<sup>rd</sup> May) that DSIIDC is willing to hand over other parking plots to PFEA for development. PFEA informed both GIZ and DSIIDC due to poor economic condition of the industries they will not be able to take up the project. They requested DSIIDC to look into the matter.
- DSIIDC celebrated World Environment Day along with GIZ, Confederation of CETP Society, Mayapuri CETP Society and Naraina CETP Society. A small talk on importance of environment drive followed by plantation drive was conducted at Naraina CETP premises.
- Chief Engineer DSIIDC conducted a site visit along with his team and GIZ and identified site for toilet construction in Patparganj Industrial Area.
- Cleaning up of proposed Parking lot in front of Udyog Sadan was done by DSIIDC.

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

- GIZ Delhi team is currently discussing the possibility of conducting an environment improvement drive with Lawrence Road industrialists of whom a few showed their interest. Proposals are under discussion with Lawrence Road industrialists and DSIIDC.

#### **b. Cleaner Production**

- This activity has not yet started.

#### **c. Wastewater Management**

- This activity has not yet started.



## **7. Management of solid waste from the industrial area and CETP sludge as a part of an Indo-Norwegian project (SINTEF) on co-processing under SEIP**

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### **About the activity:**

GIZ and SINTEF are cooperating to provide technical support and capacity building for sustainable management of industrial waste and sewage sludge as well as for the cleaning up of critically polluted areas in the three selected industrial sites.

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

- Mr. Palash Kumar Saha from SINTEF visited Patparganj Industrial Area and Lawrence Road CETP to understand whether there is scope for co-processing in energy intensive industries. During his visit he met DSIIDC and DPCC to gain information on initiatives which have already been undertaken by them concerning the utilisation of CETP sludge. DPCC shared minutes of their meeting with the cement industries for utilisation of CETP sludge, which will be used as the baseline by SINTEF.
- Representatives from SINTEF, Dr. Kåre Helge and Mr. Palash Kumar Saha, visited Lawrence Road CETP and Lawrence Road Industrial Area on 21<sup>st</sup> March 2017 to prepare a plan of action for Delhi site under SEIP.
- GIZ Delhi team collected data on sludge quality report from DSIIDC and submitted it to SINTEF.
- SINTEF shared their action plan for Delhi with GIZ.
- SINTEF scientist Mr. Palash Kumar Saha along with GIZ visited Mayapuri CETP and discussed with Mr. Tandon, from the Confederation of the CETP Society to understand the present condition of CETP sludge in Delhi.
- GIZ along with SINTEF Scientist Dr. Christian visited Ramky Enviro Engineers Ltd. Site Delhi MSW solutions Ltd. In Bawana industrial area to explore possibilities of using CETP sludge in the waste to energy plant.
- SINTEF submitted their first draft of Consolidate Report on visits to Vapi and Delhi, which is currently being assessed by GIZ (June 2017).

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

- Baseline report on “Management of solid waste from the industrial area and CETP sludge” to be submitted. SINTEF is parallel working on the technical feasibility aspects at parallel. SINTEF scientist will again visit India in the month of September.

## **8. Miscellaneous:**

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### **a. Baseline pollution report for Mayapuri Industrial Area and Lawrence Road Industrial Area:**

- work on “Economic implications of the SEIP project sites in Delhi considering projects implemented so far for the improvement of water quality in the River Yamuna” has started. Data collection from different sources are going on.
- GIZ consultant Sonal Jain visited Lawrence Road industrial area to identify potential pollution points for baseline pollution study for Delhi site in the month of July. She had submitted the first draft of “Report on baseline pollution levels measured by relevant pollutant parameters for project sites in Delhi (Lawrence Road & Mayapuri Industrial Area)”. GIZ Delhi team is currently reviewing the report.

### **b. Second Stakeholder review meeting:**

A Project Review Meeting was conducted in the conference Hall, DSIIDC Connaught Place Office on 26th July, 2017. The meeting was chaired by MD, DSIIDC. All stakeholders from all three sites in Delhi as well as DPCC were present in the meeting. Further, SEIP and Sonal Jain (Consultant) were present.

Purpose of the meeting:

- Review the progress achieved in SEIP Project activities in Delhi, and collect suggestions of how the project's objectives can be reached.
- Resolve the bottlenecks faced by the SEIP Delhi team/ consultants.
- Issues discussed :
  - Pending Co-operation agreement with Mayapuri CETP Society and Lawrence Road CETP Society.
  - Lack of support from industries with ETP for sampling in Mayapuri Industrial Area and Lawrence Road Industrial Area.
  - Lack of co-operation from industries faced by Adelphi whilst conducting Rapid Assessments in industrial areas.
  - Monitoring of baseline pollution at suggested points by DSIIDC/DPCC.
  - Feedback on Management Structures suggested by GIZ.
  - Introduction of a Digital Information System prepared by GIZ for three industrial sites in SEIP in Delhi.

In the meeting, GIZ presented the status of all SEIP activities ongoing in three Delhi Sites, also pointing out the bottle-necks faced by GIZ and consultants. MD, DSIIDC discussed the matters with the representatives from all three sites and DPCC and instructed the stakeholders to support GIZ in order to ensure the timely completion of all activities.

GIZ also handed over the output of "Industrial Park Digital Information System for industrial parks in Delhi" which was created and tested on a pilot basis in three industrial sites in Delhi, to MD, DSIIDC.

The meeting ended with a commitment from DSIIDC, Industrial association and CETP Society that they will provide full support to GIZ to overcome the hurdles faced on site. *Refer to Annexure 3 for details.*



July 26th, 2017, Conference Hall DSIIDC, Connaught place

**c. Co-operation agreement:**

A co-operation agreement for Lawrence Road Industrial Area was handed over to President, Keshavpuram Industrial Area CETP Society. A reply is awaited.

A co-operation agreement for Mayapuri industrial area has been accepted by Mayapuri CETP Society and DSIIDC. The signing of the agreement, however, is still pending.

## **9. Annexures**

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Annexure 1: SEIP Project Overview

Annexure 2: MOM: Hydroplan, PFEA and DSII DC Meeting on 4<sup>th</sup> August 2017

Annexure 3: MOM: Project Review Meeting on 26<sup>th</sup> July 2017

## 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: MOM: Hydroplan, PFEA and DSIIDC Meeting

Date and Venue: 4<sup>th</sup> August, 2017, Meeting room, PFEA, Patparganj

### List of participants:

S.No.	Name	Organisation
1.	Mr. Sanjay Gaur	President, Member, PFEA
2.	Mr. S K Maheswari	General Secretary, PFEA
3.	Mr. Sunil Puri	Sr. Secretary, PFEA
4.	Mr. Deepak Kumar	PFEA
5.	Mr. Nand Lal Dhavan	PFEA
6.	Mr. Sharat Kumar	SE (Env) DSIIDC
7.	Mr. Asit Nema	Hydroplan
8.	Dr. Muntizir Ali	Hydroplan
9.	Mr. Khalid Muzamil	Hydroplan
10.	Mr. Cowlagi Sripati	GIZ-SEIP
11.	Ms. Riti Samanta	GIZ-SEIP

### Purpose of the meeting:

- Discussion/decision on planning of a CETP for the Patparganj Industrial Area.

### Points discussed during the meeting:

- On behalf of Hydroplan, team Leader Mr. Asit Nema made a presentation on the proposed approach and scheme for developing a system for sustainable management of industrial effluent discharged from PIA.
- The presentation covered the background of the PIA and the current status of industries and infrastructure development, the baseline with regard to wastewater discharges, the receiving water bodies and the groundwater status.
- **Estimates of water withdrawal and effluent disposal** were presented which were by and large acceptable to PFEA.
- **Capacity of CETP:** There was agreement on the capacity of 3MLD for the proposed CETP.
- **Effluent quality:** Quality of combined industrial effluents was presented which comprised two sets of data – one based on monitoring carried out by PFEA in 2016 and other by the consultants in 2017. There was consensus on the effluent quality, especially with regard to oil and grease, TSS, BOD, COD and heavy metals. It was further decided to select higher of the two sets for individual parameters for design of treatment plant.
- Regarding presence of Selenium PFEA requested to guide them with probable sources so as to identify the polluting units and take necessary remedial measures.
- **Treatment options:** Among the three options presented for treatment of the effluent viz., discharge into interceptor sewer; transport to Jhilmil CETP; and developing a dedicated CETP

in PIA, PFEA consented to opt for the last option. Thus it was decided to plan for a CETP within PIA.

- Options for disposal of effluent into interceptor sewer and treatment in 200 MLD STP at Kondi not possible due to unwillingness shown by DJB because of presence of toxic elements in industrial effluent.
- **Location of CETP:** Among the options suggested by the consultants for the location of CETP, PFEA agreed for Location # 2 as mentioned in Hydroplan PIR #03. This is the same location where PS1 existing. This option will require, among others, redevelopment of the site, demolition of existing structures, rehabilitation of PS2, and laying of a rising main from PS2 to the CETP.
- **Discharge quality:** Further, PFEA agreed to get the system designed such that the treated effluent shall comply with the discharge standard for disposal into a water body. Moreover, PFEA also gave consent to adopt the proposed draft discharge norms for STPs which are more strict, rather than the existing norms. In this respect PFEA agreed to consider compliance with the critical parameters, among others, BOD, COD, Nitrogen, Phosphorus, TDS and Faecal Coliform.
- **Reuse for groundwater recharge:** Considering severe depletion of groundwater and favourable hydrogeology of the area, PFEA has expressed its intention of working towards water security. TO this effect, PFEA agreed to have the proposed wastewater management system such that the treated effluent can be used for ground water recharging within PIA. However, instead of going for artificial recharge which will entail treatment all the way upto drinking water standards (IS 10500), it was agreed to treat up to the proposed draft norms for STPs whereby the treated effluent could be discharged into a wetland cum percolation tank to achieve the desired objectives.
- The option of use of treated effluent in the plantation area on the north western side of PIA was also discussed. It was also agreed to incorporate this in the proposed scheme and suitable recharge/ percolation works shall be proposed in the design. PFEA will coordinate with concerned agencies to get this feature implemented.
- **Treatment paradigm:** There was consensus on the proposed approach of handling smaller volume of highly polluting trade effluent separately by tanker lorries and treating in Stage 1 of the proposed CETP comprising primarily chemical treatment; while the bulk of the wastewater from routine operations shall be conveyed through the existing conveyance system and treated in stage 2 of the CETP.
- **Treatment scheme:** There was agreement on the proposed treatment scheme comprising, among others, dissolved air floatation for oil & grease removal; biological treatment (SBRs) for organics and Nitrogen removal; chemical precipitation for P-removal; UV system for disinfection; partial stream treatment by RO for TDs compliance, and finally treated water sent to wetland /polishing pond for ground water recharge.
- P-removal unit will be optional, subject to the compliance requirements on the part of DPCC. RO system will be used for FDS removal where only a part of the effluent stream shall be routed and used for dilution of the rest of the main stream.
- It was suggested that instead of providing RO and UV in parallel, the RO unit should be installed after UV disinfection so that entire effluent is subjected to disinfection.
- **Long term water use:** PFEA indicated its interest in developing a drinking water distribution component; however, the consultants underlined that this does not fit with the stated objective of SEIP to achieve 20% reduction in pollution load. Instead the consultants advised to focus on groundwater recharge and subsequent extraction.



- **Others:** It was suggested by PFEA to cross check the total area of the entire IA – 87 ha appear to be on higher side. PFEA also made it clear that the green belt on the north west is not part of PIA.

Note: This MOM is prepared by Hydroplan team and still in draft format. The final one is not yet received by GIZ.

### Annexure 3: MOM: Project Review Meeting

Date and Venue: 26<sup>th</sup> July, 2017, Conference Hall, DSIIDC, Connaught Place

#### List of participants:

S.No	Name	Org./Designation
1.	K.R Meena	MD, DSIIDC
2.	Sharat Kumar	SE (Env) DSIIDC
3.	R. K. Sharma	PA (CMD) , DSIIDC
4.	Rajesh Kumar	AEE (M), DSIIDC
5.	M.I. Siddiqui	EE, DPCC
6.	Mr. S K Tandon	General Secretary, Confederation of CETP Society
7.	Sunil Puri	Member, PFEA Entrepreneur Association
8.	S.K. Maheshwari	General Secretary , PFEA Entrepreneur Association
9.	Tara Chand	Joint Secretary , PFEA Entrepreneur Association
10.	S.K. Bhasin	Technical Advisor, KESPIA CETP
11.	Dalip Singh Sahi	President, Mayapuri Industrial Area CETP Society
12.	Hitesh Sharma	Manager, Mayapuri Industrial Area CETP
13.	Sonal Jain	Consultant, GIZ
14.	Ashish Kumar	Technical Advisor , SEIP, GIZ
15.	Cowlagi Sripati	Technical Advisor , SEIP, GIZ
16.	Riti Samanta	Junior Technical Advisor, SEIP, GIZ
17.	Nitin Suri	Administrative Assistant, SEIP, GIZ

### **Purpose of the meeting:**

- Review the progress achieved in SEIP Project activities in Delhi, and collect suggestions of how the project's objectives can be reached.
- Resolve the bottlenecks faced by the SEIP Delhi team/ consultants.
- Issues discussed :
  - Pending Co-operation agreement with Mayapuri CETP Society and Lawrence Road CETP Society.
  - Lack of support from industries with ETP for sampling in Mayapuri Industrial Area and Lawrence Road Industrial Area.
  - Lack of co-operation from industries faced by Adelphi whilst conducting Rapid Assessments in industrial areas.
  - Monitoring of baseline pollution at suggested points by DSIIDC/DPCC.
  - Feedback on Management Structures suggested by GIZ.
  - Introduction of a Digital Information System prepared by GIZ for three industrial sites in SEIP in Delhi.

In the meeting, GIZ presented the status of all SEIP activities ongoing in three Delhi Sites, also pointing out the bottle-necks faced by GIZ and consultants. MD, DSIIDC discussed the matters with the representatives from all three sites and DPCC and instructed the stakeholders to support GIZ in order to ensure the timely completion of all activities.

The review meeting chaired by MD, DSIIDC was organised by DSIIDC along with GIZ. Representative from DPCC, PFEA Entrepreneur Association, Patparganj, KESPIACETP Society, Lawrence Road, and Mayapuri Industrial Area CETP Society attended the meeting. SEIP, Delhi team, Sonal Jain (consultant) were also there on behalf of SEIP, GIZ.

### **Summary of discussion:**

- Before the meeting, GIZ updated MD, DSIIDC about the discussion points.
- The meeting started with a welcome note from Cowlagi Sripati, to introduce SEIP projects role in Industrial Areas in Delhi.
- Mr. Sripati presented quick updates from three industrial site on all activities.

### **Important decisions taken:**

- 1. Pending Co-operation agreement with Mayapuri CETP Society and Lawrence Road CETP Society.**
  - GIZ informed that the co-operation agreement with PFEA was signed by all parties, i.e. GIZ, DSIIDC and PFEA.
  - Co-operation agreement with Mayapuri CETP Society has been accepted by Mayapuri CETP Society. Decision is pending from DSIIDC. MD, DSIIDC asked SE (env), DSIIDC to look into the matter and resolve the matter by the end of the month.
  - GIZ informed that the co-operation agreement with Lawrence Road CETP Society was already shared and that a reply was pending from Lawrence Road CETP Society. MD, DSIIDC instructed the representative of Lawrence Road CETP Society to present this issue to the concerned authority of Lawrence Road CETP Society and to resolve the issue.
- 2. Lack of cooperation from industries with ETP concerning sampling and the conduction of Rapid Assessments in Mayapuri Industrial Area and Lawrence Road Industrial Area.**

- GIZ reported on difficulties faced by GIZ consultants during their work in the field. Though industries from Patparganj Industrial Area have been very supportive, there is lack of co-operation from Lawrence Road Industrial Area and Mayapuri Industrial Area.
  - MD, DSIIDC addressed the participants from Mayapuri CETP Society and Lawrence Road CETP Society and instructed them to extend their support to GIZ. He showed his concern about the apprehensions of industries. To overcome the issue, he instructed the stakeholders present, to convince the industries.
  - It was decided that CETP Societies will collect samples from industries' ETPs and tag them themselves and hand it over to Hydroplan for data confidentiality.
  - CETP societies and PFEA also committed that they will help GIZ to complete their activities.
  - GIZ raised the concern that the electroplating sector of Mayapuri CETP society has not participated in the project. Subsequently, the President of Mayapuri CETP society, who happens to be one of the members operating the electroplating units, confirmed that he would offer all support to the project and provide all details.
- 3. Monitoring of baseline pollution at suggested points by DSIIDC/DPCC:**
- GIZ raised the issue of delayed monitoring of baseline pollution levels in Delhi by DSIIDC/DPCC. DPCC asked GIZ to submit the request once again to MS, DPCC, and particularly to the concerned laboratory of DPCC headed by Ms.Nandita Moitra.
- 4. Feedback on Management structures suggested by GIZ.**
- GIZ raised that till date no feedbacks were received from stakeholders on the report "Developing Management Structures for Selected Industrial Areas in India" proposed by Dr. Weber (consultant GIZ).
  - PFEA showed their interest to implement the management structure in Patparganj Industrial Area as soon as possible. They commented that PFEA want to be a part of the SPV proposed by GIZ.
  - MD, DSIIDC asked GIZ to work on management structures specifically for Patparganj Industrial Area. He asked GIZ to explore three options:
    - A management structure created by the association. The industrial association will look after all the services related to the industrial area. The association will collect and use the revenue generated from the common services.
    - Bawana Narela Model used by DSIIDC. It will be a PPP model where DSIIDC will hire a concessioner who will look after all the services. DSIIDC will collect the revenue from the common services.
    - SPV Model: which was proposed by GIZ Consultant. In which association and DSIIDC both will be partners. GIZ will develop a model laying out responsibilities along with a revenue sharing model.
  - PFEA shared their interest in cleaning up the industrial area and to do plantation in the open lands. They also presented some images of the recent cleanliness activity done in the institutional plot of Patparganj Industrial Area.
  - GIZ raised their concern about lack of facilitation team meeting, and hence requested MD, DSIIDC to call a review meeting every month. MD, DSIIDC committed he will look into the matter and more stakeholder review meetings will be arranged by DSIIDC. DSIIDC confirmed that they would call for this monthly meeting at the end of every month between 25<sup>th</sup> to 30<sup>th</sup> or 31<sup>st</sup>.
  - GIZ introduced the concept of "INDUSTRIAL PARK DIGITAL INFORMATION SYSTEM for industrial parks in Delhi" which was created and tested in pilot basis for three industrial sites of Delhi. Due to lack of time the presentation was not possible. GIZ handed over the hardcopy and softcopy (in a CD) of all maps and PPT to MD, DSIIDC. (For reference please find the attached PPT). MD, DSIIDC instructed his colleagues to discuss about the same later.
  - After the presentation, a short discussion on the decisions required for activities to progress took place. GIZ will come back to PFEA, KESPIA CETP Society and Mayapuri CETP Society.

The meeting ended with a commitment from DSIIDC, Industrial association and CETP Society that they will give their comments on the draft reports submitted to them as soon as possible. The meeting ended with closing remarks from Sripati on behalf on GIZ.

Note: This MOM is in a draft format fin