



SUSTAINABLE & ENVIRONMENT-FRIENDLY INDUSTRIAL PRODUCTION (SEIP) **Activities in GIDC, Vapi, Gujarat: Monthly Progress Report – December, 2016**

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 GIDC, Vapi, Gujarat

The priority activities identified for Vapi include:

- Moisture reduction in CETP sludge and improved management
- Energy efficiency in CETP
- Improved online monitoring systems for wastewater at ETPs/CETP
- Demonstration of improvement in 10 ETPs and replication
- Improvement in storm water drainage systems
- Skills development of technicians and helpers
- Environment improvement in individual industries
- Improvements through environment drives and participatory approaches

The complementary activities of the SEIP Project that are relevant for Gujarat 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 2.

Monthly Progress of Activities for GIDC, Vapi, Gujarat

Activity 1: Moisture reduction in CETP sludge and improved management

About the activity:

The common effluent treatment plant in Vapi, India produces around 70'000 [t/year] of sludge. Currently, the sludge is disposed in a landfill at Vapi. The disposal of the sewage sludge causes problems due to the high moisture content of it. Due to this situation new ways of sewage sludge disposal options have to be found.

Summary of progress so far:

- GIZ experts visited the VGEL office and discussed regarding the problem of sludge with the officials. VGEL agreed to give the complete support to overcome this situation.
- During site visit, it was observed that the sludge is being de-watered by mechanical de-watering method. After de-watering, the partially dried sludge is then packed in a bag and pet dried in a sludge drying beds.
- It was also discussed that this procedure is not very effective due to large quantity of sludge generated at the CETP at Vapi.
- To determine the quantitative extent of the situation, the experts from GIZ collected data pertaining to the quantity, characteristics of sludge after different stages of treatment, chemical dosing pattern etc.
- Accordingly, GIZ decided to appoint international experts to provide technical advisory for moisture reduction in CETP sludge. ToRs were developed and shared with partners for these services.

Progress for the current month:

- The tendering process has been completed.

- The bids from various experts have been collected. Expert will be available by Mid-January 2017.



Decanters for Sludge de-watering

Sludge after mechanical dewatering

Activity 2: Energy efficiency in CETP

About the activity:

Identification of energy conservation measures through EESCO for CETP, Vapi and GIDC, pumping station energy consumption reduction.

Summary of progress so far:

- GIZ has collected data for energy consumption from VGEL, Vapi and GIDC, Vapi for CETP and pumping stations respectively
- GIZ has prepared TORs for the experts to provide technical inputs towards improving energy efficiency in CETP.

Progress for the current month:

Interaction with EESCO companies is established. Proposal for conducting study will be taken accordingly.

Activity 3: Demonstration of improvement in 10 ETPs and replication

About the activity:

This activity will have focus on ETP performance from selected 30 nos. industries from selected sectors whose effluent is critical for performance of CETP.

Summary of progress so far:

As per decisions taken in the meeting held on the September 9, 2016 at MoEFCC at New Delhi with the key stakeholders of the SEIP Project from Gujarat, Delhi and Uttarakhand, the final questionnaire was submitted to VIA and has been finalised with their inputs.

A facilitation team for “Waste Water Pollution Reduction” has been constituted by VIA to discuss the best practices.

The list of the 30 industries has been finalised for parameters majorly colour, COD, BOD, TDS & TSS.

Progress for the current month:

The International Expert has been finalized and he will start his work from January 2017.

GIZ has circulated questionnaire to the 10 nos supportive industries and meanwhile, letter from VIA will be issued and questionnaire will be circulated along with the letter.

Activity 4: Improvement in storm water drainage systems

About the activity:

This activity is aimed to identify and retrofit the stretches which need maintenance or retrofitting due to problems such as overflows, clogging, breakage, inadequate capacities, etc.

Summary of progress so far:

- To map the existing situation and compile the available secondary data, GIZ had appointed an intern for the GIS mapping of GIDC industrial estate Vapi. The intern gone through the data available and prepared a GIS map of all the phases, roads, storm water, drainage, effluent network.
- As per the inputs from VIA drainage committee, it was decided to improve the storm water drainage of Phase IV area.
- GIZ has performed a preliminary survey based on the GIS mapping of the storm water network and road. All the data has been collected and a TOR for has been prepared for retrofitting of a particular stretch of storm water drainage system within GIDC Vapi industrial estate.

Progress for the current month:

- The TOR was shown to VIA drainage committee and it has undergone the tendering process.
- The bids from various experts have been collected. Expert will be available by Mid-January 2017.



Debris found in the storm water line



Broken Storm water line

Activity 5: Skills development of technicians and helpers

About the activity:

The skills development courses are targeted to improve skills of the helpers and technicians of ETPs/CETP in GIDC Vapi so as to support in improved performance of ETPs/CETP, besides reducing operational costs. The activity will support skills development of technicians and helpers of ETPs and CETP in accordance with skills development system of the Skill Council for Green Jobs of the National Skills Development Corporation. The successful candidates completing the training and passing a written examination will be awarded a certificate jointly by GIZ and SCGJ.

Summary of progress so far:

- The skill development of ETP/CETP operators programme was held during August 29 to September 03, 2016 for the operators and helpers at VIA conference hall. Total 34 participants from various industrial regions participated in the skills development programme of 6 days. 28 participants were from different chemical industries and VGEL (CETP, Vapi), 4 participants from Uttarakhand, 3 participants from Surat and 1 from Ankleshwar.
- The training was conducted by a senior German trainer, Mr. Micheal Dorr, from the German Association for Water, Wastewater and Waste (DWA). During the training, the participants also got solutions for some of their practical problems. Certificates, signed by GIZ and SCGJ, were given to all the participants after passing a written test.
- Based on the keenness of industries association for more activities towards skilling, GIZ team met with officials of VGEL for their affiliation with SCGJ so that they can conduct the skilling programmes for Gujarat on a viable business model.
- The Governing council of VGEL approval is under process. The proposal for affiliation will be submitted by VGEL to SCGJ in January 2017.

Progress for the current month:

- Aarti Industries Apple, Amine division, Grauer & Weil India Ltd., Bayer Crop Science, Sarna Chemicals Ltd. etc. provided testimonials toward the skilling programme.
- GIZ has developed a success story for FETP, Ankleshwar. Some of the industries management have denied to develop a success story in their name due to some reasons so, GIZ has decided to develop in an anonymous manner. The stories are under process.
- GIZ team is also approaching other institutions and organization for the affiliation of the skilling program.

Activity 6: Environmental improvements in individual industries

About the activity:

The activity will support in identifying key issues related to industries so that solutions can be worked out to achieve pollution reduction and resource efficiency in individual industries.

Summary of progress so far:

A questionnaire was developed for inventory of industries, which was discussed in the Advisory Committee meeting held on August 10, 2016. As suggested by the Advisory Committee, the questionnaire had been discussed with the representatives of industries, government body representatives (GIDC/GPCB) and some of the members of the industrial associations. The suggestions received had been conveyed to the SEIP team at GIZ, Delhi for finalisation of the questionnaire.

As per decisions taken in the meeting held on the September 9, 2016 at MoEFCC in New Delhi with the key stakeholders of the SEIP Project from Gujarat, Delhi and Uttarakhand, the final questionnaire has been developed to be circulated to the industries.

Progress for the current month:

- The questionnaire has been shown to Mr. Prakash Bhadra, Env. Committee member, VIA for evaluation and suggestions. The list of 35 industries have also been shown and discussed with him. A draft letter has been prepared to circulate the questionnaire amongst the industries once all relevant things are finalized by VIA office management.
- The TOR for German Expert has been prepared and tendering process has been completed based on the draft TOR. The expert has been appointed and work will be started from Mid of January 2017

Activity 7: Improvements through environment drives and participatory approaches

About the activity:

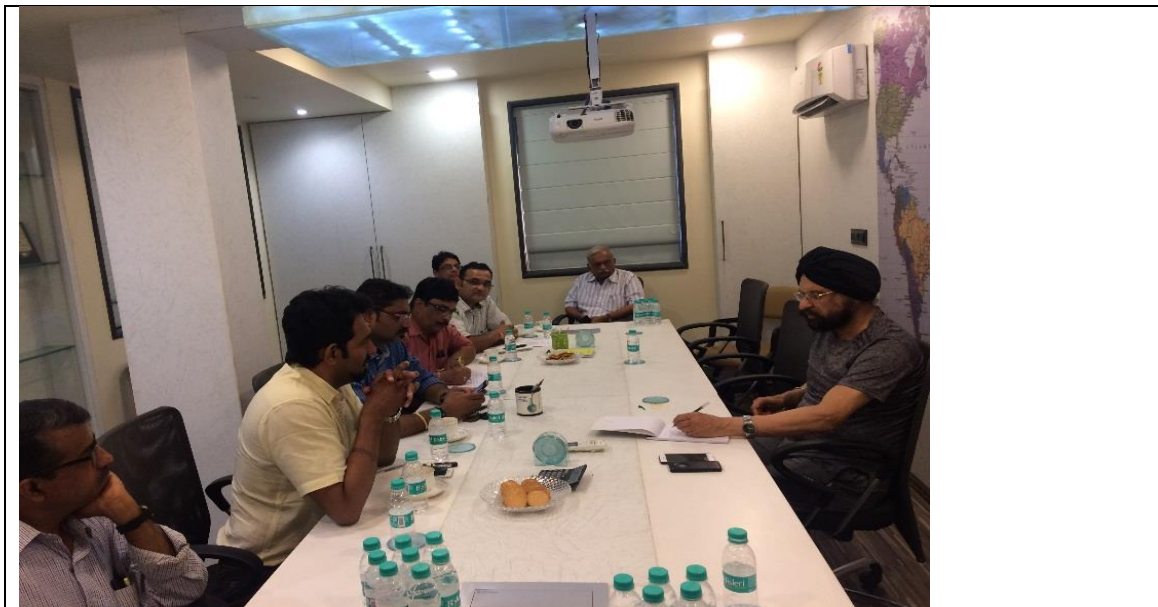
The focus of this activity is to improve the situation of physical infrastructure in GIDC industrial estate at Vapi through participatory processes. Since past couple of years, events like environment improvement drives, *Vapi Banse Vrindavan* etc. were organised with participation of various public, sector, private sector and civil society organisations. In addition, this approach is aimed towards retrofitting and transformation of the industrial estate.

Summary of progress so far:

- GIZ had appointed an intern from September 1, 2016 to identify the problematic areas. The database created shall be used for any activity to be taken up for retrofitting of the industrial areas or activity under the environment drive.
- Industries of Phase III decided to upgrade their Phase III area through CSR funds for which asked GIZ for technical co-operation in developing master plan for the same.
- The 1st introductory meeting was held on November 23, 2016 in which GIZ was requested to provide technical inputs for preparing master plan for upgradation of Phase III area.

Progress for the current month:

- During 2nd meeting of industries of phase III held on December 14, 2016, it has been decided to form a no-profit company for undertaking the upgradation tasks.
- It was decided that CSR funds of the companies in phase III will be utilized for the implementation of master plan.



Meeting with Phase III industrialists for retrofit discussion

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Annexures

Annexure 1: SEIP Project Overview

Annexure 2: Brief description of various activities for GIDC, Vapi, Gujarat.

Annexure 3: Brief description of SEIP project level complementary activities

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 16th 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 GIDC, Vapi, Gujarat) are:

- (Name of industrial development corporation)
- (Name of pollution control board/committee)
- (Name of CETP¹ company/ society)
- (Name of industries associations)
- (others)

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 modernization 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.

¹ Common effluent treatment plant

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 Complementary Activities

<p>□ Environmental Technology Platform</p>	<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>
<p>□ Green rating and certification system for industrial areas</p>	<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>
<p>□ Policy framework/guidelines/ plans/programmes</p>	<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>
<p>□ Management structures for industrial areas</p>	<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>
<p>□ Online monitoring systems for industrial wastewater</p>	<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>
<p>□ Skills development for operators (technicians, helpers) of industrial wastewater treatment plants</p>	<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>