

REPORT ON CAPACITY BUILDING PROGRAMME FOR ACADEMICIANS ON CLEANER PRODUCTION & CLEAN TECHNOLOGY

“ENABLING INCLUSIVE & SUSTAINABLE DEVELOPMENT”

On 15th September, 2017



ORGANIZED BY



Gujarat Technological University



Environmental Information System



Gujarat Cleaner Production Centre



Forests & Environment Department
Government of Gujarat



INTRODUCTION

Gujarat Cleaner Production Centre – ENVIS Centre has played an important role by providing single knowledge sharing platform to academicians, researchers, representatives from industries, students, environmental experts and government officials with objective to promote research and development in the field of Cleaner Production (CP) and Clean Technology (CT) including the practical application for creating Inclusive and Sustainable Industrial Development in the state of Gujarat.

GCPC-ENVIS believes in philosophy, academicians play an important role in nurturing students and the society; because today's students are tomorrow's leaders with philosophy and as a citizen of a proud nation our organization focuses on "Capacity Building of Academicians".

The programme emphasizes on providing single knowledge sharing platform to the participants and on delivering well balanced training on "Cleaner Production" and "Clean Technology" covering the current environmental scenario. This programmes offers unique opportunity to debate industrial and manufacturing issues including its in-depth analysis which helps creating more research based opportunities to the academicians.

PROGRAMME OVERVIEW

The programme witnessed participation of dignitaries:

-)] Dr. Bharat Jain, Member Secretary, GCPC & Coordinator, ENVIS
-)] Shri Sushil Vegda, Senior Environment Engineer, Gujarat Pollution Control Board
-)] Dr. Gaurang Ban, Head of Environment Department, L.D. College of Engineering, Ahmedabad
-)] Ms. Brigitte Zietlow, Senior Scientist, German Federal Environment Agency, UBA
-)] Ms. Almut Reichart, Senior Scientist, German Federal Environment Agency, UBA

The inaugural session started with lighting of lamp by the dignitaries and with "Saraswati Vandana" by GCPC-ENVIS team members and the participants.





The dignitaries on dias were welcomed with a Tulsi Plant, as it is known as the symbol of Purity according to the Indian tradition. Speaking on the occasion Dr. Bharat Jain, Member Secretary, GCPC & Coordinator, ENVIS delivered a welcome speech. He mentioned about the objective behind organizing the programme including its expected outcomes.



The programme continued with address from Shri Sushil Vegda, Senior Environment Engineer, Gujarat Pollution Control Board, he mentioned about various environmental issues associated with industrial development. He congratulated GPCPC-ENVIS Centre for organizing this programme saying that this programme is a stepping stone towards creating sustainable development in the state of Gujarat.



He also briefed about various activities jointly undertaken by Gujarat Pollution Control Board (GPCB) and Gujarat Cleaner Production Centre (GPCPC) for promoting “Cleaner Production” and “Clean Technology” in industries and academic institutions in the state.

He concluded saying that if “CP” (Cleaner Production) is implemented properly there will be less need for moving towards “PC” (Pollution Control).

TECHNICAL SESSIONS

The technical sessions started with “Introduction of Cleaner Production: Concept, Tools, Methodology and Case Studies” - by Dr. Bharat Jain, Member Secretary, GCPC & Coordinator, ENVIS. During his presentation he stressed upon various major environmental incidents inclusive of London Smog in December, 1952, Bhopal Gas Tragedy, December, 1984, including the effects of Environmental Degradation on Climate, Flora and Fauna. He continued discussing the scenario of Industrialization in the state of Gujarat mentioning “Gujarat is the Growth Engine of India”. He discussed the contribution of Gujarat State in Chemical Sector showcasing numerical data, including the number of product clusters, GIDC Industrial Estates, Special Economic Zones and Investment Regions in the state mentioning about Dholera SIR, DAHEJ – PCPIR (Petroleum, Chemical and Petrochemical Investment Region) and Dehli Mumbai Industrial Corridor (DMIC).

He mentioned that such large number of Chemical and Petrochemical region needs adequate steps towards creating healthy environment in the state mentioning that the state has taken various steps towards “pollution control” as the state currently many common environmental infrastructure all inclusive of 33 nos. of existing Common Effluent Treatment Plants (CETPs) including 4 proposed CETPs, Common Multi Effective Evaporators, Marine Diffuser System for disposal of treated wastewater, common incinerators and Treatment, Storage and Disposal Facilities (TSDs).

Inspire of these efforts three of major Industrial Areas of Gujarat is declared as Critically Polluted Zones as per CEPI (Comprehensive Environmental Pollution Index) of Central Pollution Control Board (CPCB).

To overcome these issue one should move towards “Prevention of Pollution” i.e. Cleaner Production, as it is defined as a “continuous application of an integrated, preventive environmental strategy towards

processes, products and services in order to increase overall efficiency and reduce risks to humans and the environment”.

Dr. Jain, continued briefing mentioning about the establishment of GCPC and its activities, and by mentioning the achievements of GCPC at International, National and Regional Level. He briefed the activities of GCPC saying that GCPC Internationally is a regular member of Global Resource Efficient and Cleaner Production Network (RECPnet) of UNIDO to promote Resource Efficient and Cleaner Production (RECP) and Climate Technology Centre and Network (CTCN) – a working arm of UNFCCC developed by UNIDO in collaboration with UNEP to promote low carbon and climate resilient development.

Dr. Jain also discussed about various activities initiated by GCPC and GIZ, Germany on Planning and Development of Eco Industrial Parks, Retrofitting of Existing Industrial Estate into Eco Industrial Park, Site Master Planning of Green Industrial Estate at Naroda, Vapi and Surat.

He also mentioned an important thing that GCPC is actively engaged in developing Industrial Policy and Financial Assistance Schemes for various countries such as Sri Lanka, Philippine, Laos, Cambodia, South Africa based on Gujarat Industrial Policy.

The presentation continued mentioning GCPC as a National Level, saying that GCPC is functioning as a Environmental Information System (ENVIS) Centre for Ministry of Environment, Forest & Climate Change, Government of India since 2005 and promoting the theme of “Cleaner Production” and “Clean Technology” through maintain and regularly updating GCPC-ENVIS website, publishing quarterly newsletters on CP & CT and by publishing various publications, knowledge products and through its mobile application.

He mentioned the activities of GCPC at State level saying that GCPC provides technical guidance for Environmental Clearance on basis of Cleaner Production / Waste Minimization to the State Level Environment Impact Assessment Authority by Ministry of Environment, Forest & Climate Change, Government of India and by assisting Department of Forests and Environment, Government of Gujarat for conducting Gujarat Cleaner Production Award since,2004 on successful implementation of CP & CT by the industries of Gujarat.

He mentioned the efforts of GCPC saying that Cleaner Production is also included as a subject in course curriculum of B.E. and M.E. Environment in colleges of Gujarat. The centre is also regularly organizing awareness programmes on CP & CT in various colleges. Speaking on the occasion he mentioned that GCPC is also working on Capacity Building of Students and Academicians conducting various orientation programmes and guiding students of chemical and environmental engineering for their dissertation.



CASE STUDY: CLEANER PRODUCTION IMPLEMENTATION IN TEXTILE SECTOR



The session continued with presentation by Ms. Almut Reichart, Senior Scientist, German Federal Environment Agency, UBA and Ms. Brigitte Zietlow, Senior Scientist, German Federal Environment Agency, UBA, wherein she mentioned about RECP Implementation in Textile Sector showcasing its benefits to the environment and society.



She elaborated on preparation of Best Available Techniques (BAT) reference document for Gujarat jointly initiated by UBA and GCPC. She discussed about the various aspects for initiating the preparation of such a customized document, including defining of "Process Line Out" (Action Plan). She discussed the benefits of implementation of these reference documents on environment as it helps on preventing and controlling of emission to air and water, including resource conservation and waste reduction which helps creating sustainable industrial development in the state.



CASE STUDY: CLEANER PRODUCTION IMPLEMENTATION IN CHEMICAL & RECYCLE PAPER SECTOR



The session continued with presentation on Cleaner Production Implementation in Chemical and Recycle Paper Sector by Shri Hiren Bhendwal, Senior Project Engineer, GCPC showcasing Process Flow Diagram and Waste Stream Identification during CP Implementation in Chemical Sector. He mentioned various problems identified during assessment inclusive of excessive consumption of raw materials, improper maintenance issues and various solutions for the same. He also showcased various options

such as making of by-products, reusing waste as a resource in Chemical Industry which was highly appreciated by the participants. Shri Hiren Bhendwal, also mentioned about process flow diagram of recycled fibre based paper mill during presentation of Cleaner Production Implementation in Pulp and Paper Sector.

He mentioned various problems identified by GCPC officials during the study inclusive of generation of plastic during making of pulp slurry and he mentioned various solutions for the same in which he mentioned that "Plastic Waste can be used as a fuel for Cement Industries", this idea was highly noticed and appreciated by the participants. He also briefed various other ideas such as recovery of fiber from wastewater, including reduction water and energy consumption.

Shri Kashyap Arya, Assistant Project Engineer, GCPC continued the discussion on Cleaner Production implementation in Chemical Sector showcasing cost benefit analysis of suggested options saying that reduction in consumption of various raw materials has resulted in improving of product yield.





CASE STUDY: CLEANER PRODUCTION IMPLEMENTATION IN DAIRY SECTOR



The session continued with presentation on Cleaner Production Implementation in Dairy Sector by Shri Abhi Patel, Assistant Project Engineer, GCPC saying that India is the leading in the world for milk production. The Indian dairy market is amongst the largest and fastest growing markets in the world. He mentioned about the Revolution in Dairy Industry in the year 1946 where the first milk union was established as a “Kaira District Co-operative Milk Producers” an idea of Dr. Varghese Kurien.

He mentioned about the Scenario of Milk production in Gujarat including its turnover. He mentioned the scenario of Anand in terms of Milk Production saying as the “Milk Capital of India”, He briefed Manufacturing Process of Milk, and other milk products including its storage and distribution.

Re-using of collected rinse water from collection tank for washing, which helps reducing water consumption due to recycling, it also leads to reduction in ETP Load, Energy and Water Consumption.

Collection of Raw Biogas in pressure swing absorption unit for pure Bio Gas Generation which is used in boiler and kitchen which helps in reducing consumption of fuel.

Shri Abhi Patel, suggested various options such as recovery of condensate water, replacement of conventional lighting system with energy efficient and star rated light fittings.



CASE STUDY: DEVELOPING OF ECO-INDUSTRIAL PARK IN GUJARAT



Dr. Bharat Jain, Member Secretary, GCPC & Coordinator, ENVIS continued the session discussing on developing of Eco-Industrial Parks in Gujarat. He shared his vast experience working in the field of Eco Industrial Park Development, and in promoting Cleaner Production and Clean Technology in Gujarat as a Member Secretary, Gujarat Cleaner Production Centre. He also shared his experience working in Gujarat Industrial Development (GIDC).

Elaborating about Eco Industrial Parks Development he mentioned about developing of 3 Step EIP approach in Gujarat i.e., Micro (at industrial level- through the application of RECP tools and methodologies in industries to improve overall environmental performance of industry. Macro – (at estate level- through

application of RECP tools at the estate / cluster level targeting the common infrastructures for sustainable growth of Industrial Estate), and last but not the least that is "Industrial Symbiosis" – it is a network of industries developed for exchanging of waste in which waste of one industry can be used as a resource (raw material) by the other industry. The concept of Eco Industrial Parks was highly appreciated by the participants specially the concept of Industrial Symbiosis, which will reduce the burden and cost of waste treatment.

Dr. Jain continued the session discussing various case studies on Eco Industrial Parks Development in Gujarat at Naroda (Ahmedabad), Vapi, Sachin (Surat). He also discussed about the prestigious project awarded by UNIDO to GCPC on RECP Pilot Project to Foster Eco Industrial Development in Eco Industrial Parks in India at Dahej and Nandesari. He discussed about the ongoing activities for the same.

Dr. Jain discussed various case studies of successful implementation of RECP Application in Ceramic Sector including its effects on financial savings, environmental and resource conservation, inclusive of GHG Emission Reduction which is a global task. Dr. Jain also discussed about the results of Cleaner Production Assessment in Pulp and Paper Sector, Vapi, including the Industrial Symbiosis of Vapi showcasing Co-processing of plastic waste in Cement Industries which was highly appreciated by the participants.

Dr. Jain concluded his presentation mentioning about the ongoing pilot project in association with UNIDO for Development of Eco Industrial Parks at Dahej and Nandesari in brief. The participants congratulated Dr. Jain and acknowledge for his efforts towards creating Inclusive and Sustainable Development in the state of Gujarat.

The programme continued with discussion and Q&A between the experts and the participants wherein experts and speakers answered various queries raised by the participants.

The programme concluded with vote of thanks by Dr. Bharat Jain, Member Secretary, GCPC & Coordinator, ENVIS and with distribution of certificates to the participants by the dignitaries Shri Lalit Sanghvi, Shri Ravji Patolia, Shri V.R. Patel, Technical experts, GCPC

DISTRIBUTION OF CERTIFICATES TO THE PARTICIPANTS



VIEW OF PARTICIPANTS





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Environmental Information System



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GUJARAT CLEANER PRODUCTION CENTRE
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