

Second Report on

Cleaner Production Promotional Activities

Supported by
Department of Forests and Environment
Government of Gujarat



Submitted by:



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Second Report on Cleaner Production Promotional Activities

Project Background:

Gujarat has achieved an impressive industrial development since its inception as a state since 1960. The industrial sector at present comprises of huge number of Micro Small, Medium and Large scale of industries. It has 204 industrial estates established by Gujarat Industrial Development Corporation (GIDC). The strengths of the industries lie in its Small and Medium Enterprises (SMEs).

The industrialization brought economic prosperity to the state, but also resulted in the deterioration of environment. It was realized that taking reactive steps was not a proper answer to pollution control, but there is a need of 'Proactive' step which can prevent the generation of pollutants; rather than treating the generated waste at the End-of-Pipe. Cleaner Production is the preventive approach for the environmental pollution.

Cleaner production is a preventive environmental protection initiative, which emphasizes on reduction of generation of wastage; rather than to treat the generated waste. It is intended to minimize waste and emissions and maximize product output. By analyzing the flow of materials and energy, options to minimize waste and emissions out of industrial process through source reduction strategies are identified. Implementation of Cleaner Production helps to reduce the use of materials and energy, and to avoid waste, waste water generation, and gaseous emissions, and also waste heat and noise and provides better choices for improved processes.

Cleaner production concepts have consequences for the whole life cycle of a product and can foster improvements in product design, selection of raw materials, and efficiency in production and/or energy use, safety during manufacture and consumer use, reparability and recyclables. The cleaner Production strategy is in full compliance with the concept of sustainable development.

Gujarat Cleaner Production Centre, established by the Department of Industries and Mines, Government of Gujarat; has been proactively engaged in the promotion and implementation of Cleaner Production in various industrial sectors of Gujarat since its inception in 1998. So far, GCPC has conducted more than 200 CP Assessments in various

sectors like chemical, dyes & intermediates, pulp & paper, dairy, textile, electroplating, fishery, stone crushing, bentonite manufacturing and service sectors.

Though, by this time many industries have shown interest in CP, however, the implementation and demand has not been generated from the industries. Therefore, it is necessary to make industries aware about CP continuously. To motivate the industries, Department of Forests and Environment, Government of Gujarat has initiated for Proactive Concepts and supporting in implementation of Cleaner Production. As a part of this activity, Forests & Environment Department assigned a project to conduct Promotion Programme on Cleaner Production in various industrial sectors of Gujarat to Gujarat Cleaner Production Centre.

The main objective of the Promotion programme is to spread awareness on Cleaner Production in different sectors and to develop understanding of CP concept and its linkages in achieving overall environmental improvement and compliance.

This Second Report on Cleaner Production Promotional Activities includes the progress of the Cleaner Production Promotion Programme at Industrial Estates covering the period from October 2015 to February 2016.

Cleaner Production Promotion Programme:

Cleaner Production Promotion Programs at various industrial estates were conducted as below.

1. Cleaner Production Promotion Programme at Bhavnagar, Dated 29/10/2015
2. Cleaner Production Promotion Programme at Kalol, Dated 09/11/2015
3. Cleaner Production Promotion Programme at V. U. Nagar, Dated 18/11/2015
4. Cleaner Production Promotion Programme at Jetpur, Dated 03/12/2015
5. Cleaner Production Promotion Programme at Jhagadia, Dated 23/12/2015
6. Cleaner Production Promotion Programme at Sachin, Dated 09/01/2016
7. Cleaner Production Promotion Programme at Godhra, Dated 09/01/2016
8. Cleaner Production Promotion Programme at Vadodara, Dated 09/01/2016
9. Cleaner Production Promotion at Guj-Tech Industrial Expo, Ahmedabad, Dated 06/02/2016
10. Cleaner Production Promotion Programme at Naroda, Dated 17/12/2015
11. Cleaner Production Promotion Programme at Kheda, Dated 19/02/2016
12. Cleaner Production Promotion Programme at Vapi, Dated 25/02/2016
13. Cleaner Production Promotion Programme at Valsad, Dated 29/02/2016



Preparation of Promotion Programme:

Though to conduct Promotion Programme on Cleaner Production is a routine activity, but for this project an exclusive team of senior officials from GCPC have been formed under direct supervision of Member Secretary, GCPC. A descriptive presentations covering following themes have been prepared:

Industrialization & CP

- Industrial Scenario of Gujarat
- Measure for Environment Protection (End of Pipe) Treatment & Disposal
- Concept of CP
- Establishment and activities of GCPC
- Support by Department of Forests and Environment

CP Tools

CP Methodology

Success Stories of CP in –

- Textile Sector
- Chemical Sector
- Dyes and Dyestuff Sector
- Pharmaceutical Sector
- Electroplating Sector
- Recycle Paper Sector
- Pulp and paper sector
- Service Sector like Hotels & Hospitals
- Foundry Sector
- Stone Crushing Sector
- Bentonite Sector
- Fish Processing Sector

Financial Assistance

- Scheme of financial assistance for CP Implementation under Gujarat Industrial Policy – 2015 of Industries Commissionerate, Government of Gujarat

An environment friendly Jute Bags were distributed to all participants, consisting of:

- CD comprising of following things:
 - ✓ Guidelines on Cleaner Production Implementation in various sectors, Posters, Cleaner Production Booklets prepared by GCPC.
 - ✓ Schemes of financial assistance under Gujarat Industrial Policy 2015 of Industries Commissionerate, Government of Gujarat.
 - ✓ Copy of PowerPoint Presentations
- Writing Pad made of Recycled Paper
- Pen
- Programme Schedule

The details of the Promotion programme are given in the following pages.



Cleaner Production Promotion Programme at Bhavnagar

‘Good practices to be adapted to curb air pollution/fugitive emission in Bentonite manufacturing industries of Chitra GIDC’

(Venue: Saurashtra Chamber of Commerce, Seminar Hall, Bhavnagar, Dated 29/10/2015)

Gujarat Cleaner Production Centre (GCPC) in association with Gujarat Pollution Control Board (GPCB) organized a Cleaner Production Promotion Programme aiming on ‘Good practices to be adapted to curb air pollution/fugitive emission in Bentonite manufacturing industries of Chitra GIDC’ at Saurashtra Chamber of Commerce, Seminar Hall, Bhavnagar on 29th October, 2015 3:00 PM to 5:30 PM.

The objective of the program was to make the participants aware on the best practices for reduction in dust emission & clean operation of Bentonite manufacturing industry and to guide on the implementation of Cleaner Production tools in Bentonite manufacturing industries for overall environmental benefit.

The programme witnessed the participation of Mr. R. R. Vyas, RO – Bhavnagar, GPCB; Mr. Punamchandra Rathod, Senior Project Engineer, GCPC; Mr. Pankaj Pandya, President, Chitra Industries Association; and with that representatives of around 30 industries from Bhavnagar bentonite cluster attended the programme.

The programme started with the inaugural ceremony, including the Welcome speech by Mr. Pankaj Pandya, President, Chitra Industries Association. He heartily welcomed the GCPC team and all the participants to the event and explained the objective of the programme. He also highlighted the problems faced by the industries in Bentonite manufacturing operation. He also concentrated on sustainable development by explaining the Importance of saving the Environment along with industrial growth. He also mentioned that, so far, many steps have been taken to reduce the air pollution in the Chitra Industrial Estate, but it is always better to prevent the pollution, rather than cure. He mentioned that the best way to reduce the pollution is to generate less waste.

Mr. R. R. Vyas, Regional Officer – Bhavnagar, Gujarat Pollution Control Board briefed on existing environmental pollution problems, especially the issues of bentonite manufacturing industries. He highlighted common to all and crucially important issues of air emission, arising from various manufacturing operations like vibratory screening operation, belt conveyor operation, loading and unloading of material and rotary kiln operation. He also appreciated the efforts made by GCPC to implement the preventive approach in Chitra Industrial Estate.

After that, Mr. Punamchandra Rathod, Senior Project Engineer, GCPC made a presentation on the Introduction to Cleaner Production and its implementation in bentonite manufacturing sector. He gave a brief introduction to Cleaner Production Concept, its advantages over the pollution treatment (End of Pipe treatment), Cleaner Production tools, methodology to implement CP and role of GCPC in promoting and implementing Cleaner Production in various industrial estates of Gujarat state. He also briefed on the scheme for financial assistance under Gujarat Industrial Policy – 2015.

He briefed on the bentonite manufacturing process. He presented operation wise various sources of dust emission in bentonite manufacturing process and also explained various health problems associated with it. He highlighted various Cleaner Production measures for loading and unloading of material, flooring, closed system for belt conveying operation and fuel selection in rotary kiln. He suggested the participants to use good quality coal with higher calorific value and lower sulphur contents. He explained mechanism of coal combustion and optimum stoichiometric air requirement. He suggested various enclosures available for dust control and to install ventilation system for removal of dust from the work place. He made a comparison by showing some examples of minimum dust generating industries and maximum dust generating industries.

Next to that, Mr. Sumit Patel, Assistant Project Engineer, GCPC presented existing air pollution control mechanisms like dust collector, cyclone separators and bag filters and problems associated with it. He briefed on various air pollution control devices and its mechanism for dust collection.

The final part of the program was an open discussion for all the participants, in which many participants asked questions/queries related to various aspects of air pollution problem in Bentonite manufacturing industry. Mr. R. R. Vyas & Mr. Punamchandra Rathod replied to those queries. Also Mr. R. R. Vyas declared that the 'Guideline on Dust Emission Reduction in Bentonite Manufacturing Industries' prepared by GCPC will be circulated to all Bentonite industries for implementation.

Mr. Pankaj Pandya concluded the programme with vote of thanks.



Photos of the event:



Mr. Pankaj Pandya, President, Chitra Industries Association, welcoming the gathering and briefing the Environmental Problems in Chitra Industrial Estate



Mr. Punamchandra Rathod, SPE, GCPC presenting sources of dust emission & CP measured to curb air pollution in bentonite manufacturing industry



A view of the participants in the programme



Gujarat Cleaner Production Centre

Cleaner Production Promotion Programme Schedule

Date: 29/10/2015

Time: 03.00 PM to 05.30 PM

Venue: Saurashtra Chamber of Commerce, Seminar Hall, Bhavnagar

| Duration | Activity |
|---------------|--|
| 03.00 – 03.30 | Registration & Tea |
| 03.30 – 03.40 | Welcome address by Mr. Pankaj Pandya, President, Chitra Industries Association |
| 03.40 – 3.50 | Address by Mr. R. R. Vyas, RO – Bhavnagar, GPCB |
| 03.50 – 05.10 | <p>Technical presentation by –</p> <p>Mr. Punamchandra Rathod, Senior Project Engineer, GCPC</p> <ul style="list-style-type: none"> • Concept of Cleaner Production • Cleaner Production Tools and Methodology • Activities of GCPC • Identified problems and their solutions for bentonite manufacturing industries • Schemes under Gujarat IC Policy 2015 <p>Mr. Sumit Patel, Assistant Project Engineer, GCPC</p> <ul style="list-style-type: none"> • Existing technology leading to air emission • Air pollution control devices • Case Study of CP (Reduction of air emission) |
| 5.10 – 5.25 | Discussion Session |
| 5.25 – 5.30 | Vote of Thanks by Mr. Pankaj Pandya, President, Chitra Industries Association |

Cleaner Production Promotion Programme at Kalol

(Venue: Kalol Industries Association Hall, Kalol, Dist: Gandhinagar Dated 09/11/2015)

Gujarat Cleaner Production Centre (GCPC) organized a Cleaner Production Promotion Programme in Kalol at Kalol Industries Association Hall, Kalol on 09th November, 2015 from 11:00 AM to 12:30 PM.

The programme was organized to build awareness on the Cleaner Production Concepts of the participant industries. Mr. Punamchandra Rathod, Senior Project Engineer, GCPC; Mr. Hiren Bhendwal, Senior Project Engineer, GCPC and Mr. Bipinbhai Patel, President, Kalol Industries Association were the key attendants at the programme. With that, more than 30 representatives of various industries from different sectors participated in the programme.

GCPC team and all the participant industries were verbally welcomed by Mr. Bipinbhai Patel, President, Kalol Industries Association, in his speech. He appreciated GCPC to organize this programme, as there was a crucial need of making the industries aware about the environmental pollution and suggestions to curb it. He also gave a brief introduction to the purpose of organizing this event to the participants.

After that, Mr. Punamchandra Rathod, Senior Project Engineer, GCPC made a presentation on Cleaner Production. He welcomed all the participants at first and also briefed them about objective of the programme. In his presentation, he briefed all the participants on Introduction to Cleaner Production, Concepts of CP, methodology and various tools to implement Cleaner Production in various sectors. He also gave information about the establishment of GCPC, activities performed by GCPC and role of GCPC in implementing Cleaner Production in industrial estates.

Next to that, Mr. Paras Gojiya, Assistant Project Engineer, GCPC made a presentation on case studies of successful implementation of Cleaner Production in chemical, electroplating and ceramic industries. He emphasized on the advantages of implementing Cleaner Production, both economical and environmental.

Vide a presentation, Mr. Hiren Bhendwal, Senior Project Engineer, GCPC, threw some light on the schemes of financial assistance available under the Gujarat Industrial Policy – 2015 of Industries Commissionerate, Government of Gujarat for implementing Cleaner Production in industries. He also inspired the industries to implement maximum Cleaner Production for the benefit of the industry itself and along with that, the environment.



The next part was a question – answer session open for all the participants. In the discussion, many participants asked various questions related to guidance for implementing Cleaner Production, especially in chemical and electroplating sector and also asked for the guidelines to minimize the generation of waste and make the process energy efficient; to which Mr. Rathod and Mr. Bhendwal replied accordingly, hence solving their queries. They also asked various questions related to the Industries Policy, 2015.

At the end, Mr. Bipinbhai Patel again thanked the GCPC team for organizing the program and making the participants aware about the Cleaner Production. He also requested GCPC to keep on organizing such programs frequently and assured to provide all type of cooperation needed; to which the GCPC team expressed gratitude.

The programme concluded with the vote of thanks by Mr. Bipinbhai Patel to all the participants.

Photos of the event:







Gujarat Cleaner Production Centre

Cleaner Production Promotion Programme Schedule

Date: 09/11/2015

Time: 11:00 AM to 12:30 PM

Venue: Kalol Industries Association Hall, Kalol, Dist - Gandhinagar.

| Duration | Activity |
|----------------|---|
| 10:00 to 11:15 | Registration & Tea |
| 11:15 to 11:20 | Welcome address by Mr. Bipinbhai Patel, President, Kalol Industries Association |
| 11:20 to 12:10 | Technical session: Presentation by GCPC on – <ul style="list-style-type: none">▪ Cleaner Production Concepts & Tools▪ Methodology▪ CP Case Studies▪ Gujarat Industrial Policy 2015 |
| 12:10 to 12:25 | Discussion session for all the participants |
| 12:25 to 12:30 | Vote of Thanks by Kalol Industries Association |

Cleaner Production Promotion Programme at Vitthal Udyog Nagar

(Venue: V. U. Nagar Industries Association Hall, V. U. Nagar, Dated 18/11/2015)

A Cleaner Production Promotion Programme was organized in V. U. Nagar GIDC Industrial Estate, to build wide spread understanding of the concept of Cleaner Production to various industrial sectors and industrial personnel on 18th November 2015 at Vitthal Udyog Nagar Industries Association Hall from 11.30 AM to 1.30 PM.

The participants of the programme included Mr. P. R. Rathod, Senior Project Engineer, GCPC; Mr. Jagadishbhai Patel, President, V. U. Nagar Industries Association; and with that around 25 member Industries of V. U. Nagar Industrial Estate attended this promotion programme.

Mr. Jagadish Patel welcomed all the participants and the GCPC team in his Welcome speech and explained to the participants the motto of arranging this programme. He pointed out about the rise in pollution problems occurring from production process and need of Cleaner Production Implementation in Industries. Then he invited the GCPC team to go in more details vide a presentation.

Mr. P. R. Rathod, Senior Project Engineer, GCPC initiated a presentation on Cleaner Production. In his presentation, he explained to all participants the importance of resource conservation and reduction of waste at all the process stages, particularly in polluting industries of chemical sector. He also explained the concept of sustainable economic growth and asked all industries to practice it in their units. He also briefed on the emergence of the concept of pollution prevention by giving the examples of some historical disasters in India and the world, such as the Great London Smog of 1952 and the Bhopal Gas Tragedy of 1984. He said that the 'pollution treatment' (End of pipe) will not only be sufficient for answering to the poor condition of environment, there is an urgent need of 'pollution prevention' strategy (Cleaner Production).

He also mentioned about the Cleaner Production tools, methodologies of implementation, barriers to implementation, inception of GCPC and its role in industrial estates to implement, demonstrate and promote Cleaner Production, GCPC's activities, and achievements at international, national and local level.

After that, Mr. Sumit Patel, Assistant Project Engineer, GCPC made a presentation on case studies of successful implementation of Cleaner Production in some industries of dyes and intermediates, chemicals and pharmaceutical industries. He made a comparison between raw material consumption, energy consumption and water consumption before

implementation of CP and after implementation of CP. He also discussed various best available techniques to improve processes and best use of resources.

After that, Mr. P. R. Rathod again made a presentation on the schemes of financial assistance available under the Gujarat Industrial Policy – 2015 of Industries Commissionerate, Government of Gujarat for implementing Cleaner Production in industries. He explained all the schemes in details and promoted the participants to utilize the scheme by implementing Cleaner Production in their units. With that, he also explained about Cleaner Production Award of Government of Gujarat, being awarded annually to the industries that successfully implement Cleaner Production and reduce emissions to air, water and land and preserve resources in both small & medium scale and large scale industries.

At the end, participants asked various questions to the GCPC team about reducing the waste generation and pollution prevention in their respective industries. Participants' enthusiasm towards practicing Cleaner Production was really appreciable. They also asked a few questions related to the Industrial Policy and the Cleaner Production Award. Mr. Rathod solved all of their queries.

Mr. Jagadish Patel thanked the GCPC team for organizing such a programme and gave vote of thanks to the team and all the participants, hence concluding the programme.

Photos of the event:





Gujarat Cleaner Production Centre

Cleaner Production Promotion Programme Schedule

Date: 18/11/2015

Time: 11.30 am to 1.30 pm

Venue: V. U. Nagar Industries Association Hall, V. U. Nagar

| Duration | Activity |
|----------------|--|
| 11.30 to 12.00 | Registration & Tea |
| 12.00 to 12.10 | Welcome address by V. U. Nagar Industries Association |
| 11.10 to 11.20 | <p>Technical Session: Presentation by GCPC –</p> <p>Mr. Hiren Bhendwal, Sr. Project Engineer</p> <ul style="list-style-type: none">• Introduction of Industrialization• Scenario of Pollution in India and the world• Pollution Prevention strategy (Cleaner Production)• Gujarat Cleaner Production Centre• CP Tools and Methodology• Achievements of GCPC <p>Mr. Sumit Patel, Assist. Project Engineer</p> <ul style="list-style-type: none">• Cleaner Production case studies <p>Mr. Hiren Bhendwal, Sr. Project Engineer</p> <ul style="list-style-type: none">• Industrial Policy – 2015• CP Awards |
| 11.20 to 11.30 | Discussion Session |
| 11.35 to 12.20 | Vote of thanks by V. U. Nagar Industries Association |

Cleaner Production Promotion Programme at Jetpur

(Venue: Jetpur Dying and Printing Industries Association Hall, Jetpur, Dated 03/12/2015)

Jetpur Industrial Estate is an important hub of textile manufacturing and processing. The wet processing of dyeing the fabrics persists in the Jetpur Industrial area. The wet processing is a water intensive operation and there are many issues regarding the water pollution in that estate. GCPC had conducted a project of preparing best available techniques for textile sector in the past. The promotion of Cleaner Production techniques in such estate is considerably important.

Gujarat Cleaner Production Centre (GCPC) had organized a Cleaner Production Promotion Programme, focused on Best Available Techniques in Textile Sector, at Jetpur Dying and Printing Industries Association Hall, Jetpur on 3rd December 2015 from 3:30 PM to 5:30 PM.

The programme was witnessed by Mr. Punamchandra Rathod, Senior Project Engineer, GCPC; Mr. Hiren Bhendwal, Senior Project Engineer, GCPC; Mr. Rajubhai Patel, President, Jetpur Dying and Printing Industries Association; and with that, around 40 representatives from various textile manufacturing and processing industries of Jetpur Industrial Estate.

The program initiated with the Welcome address by Mr. Rajubhai Patel, President, Jetpur Dying and Printing Industries Association. He welcomed all the participants and GCPC team and recalled about a promotion programme arranged at Jetpur in 2013 and thanked GCPC team to organize this programme once again. He spoke in brief about history of establishment and development of the estate. He mentioned about some technologies they were using in the past and the modifications the industries have done in the recent years, especially after GCPC's interventions in the recent years. He also said that textile sector has been facing many issues, especially regarding water pollution and competition with other countries in the market. He said that it is the call of time to practice Cleaner Production to sustain in the market, as it is a tool which can benefit towards both the economy and the environment simultaneously.

The next part was a presentation by Mr. Punamchandra Rathod, Senior Project Engineer, GCPC on 'Industrialization and Cleaner Production'. He thanked Mr. Rajubhai Patel at first for his kind words of welcoming and giving such a beautiful introduction. He also thanked the participants for their presence in the programme. He also briefed the audience on the ill effects of environmental pollution, especially the water pollution and the importance of the pollution prevention strategy. He also made a comparison between

the pollution control and pollution prevention strategies. He stated that it is required to have a preventive strategy in place that will encompass all clean technologies. He requested the industries to enhance the Cleaner Production Implementation and utilize the Government incentive for installation of cleaner/greener processes.

He also gave introduction to the Cleaner Production and Cleaner Technology, activities of GCPC in Gujarat, Cleaner Production tools and methodologies to implement CP in industries to lead towards more efficient use of energy, raw material and water and ultimately reducing the generation of waste. He also mentioned about the Best Available Techniques for wet processing in textile sector and the Zero Liquid Discharge (ZLD) guideline prepared by GCPC.

After that, a presentation was made by Mr. Abhi Patel, Assistant Project Engineer, GCPC, briefing on the case studies of successful implementation of various tools of CP in some textile processing units. He mentioned about Reuse, Reduce, Recycle and Recover philosophy, and said that they were the crucially important tools in any company.

After that, Mr. Hiren Bhendwal, Senior Project Engineer, GCPC gave a presentation on the schemes for Financial Assistance for the implementation of Cleaner Production and environmental protection as per the Gujarat Industrial Policy – 2015 by Industrial Commissionerate, Government of Gujarat and requested all the participants to utilize the government incentives as much as possible.

At the end of all presentations, participants asked various questions pertaining to various technology options available to reduce the resource consumption in their units and ongoing environmental issues of their industries. The GCPC team responded accordingly on these problems. Many questions focused on Industrial Policy 2015, to which Mr. Rathod and Mr. Bhendwal deliberated accordingly.

Finally, the programme concluded with the vote of thanks by the President, Jetpur Dying and Printing Industries Association to all the participants and GCPC team.



Photos of the event:





Gujarat Cleaner Production Centre

Cleaner Production Promotion Programme Schedule

Date: 03/12/2015

Time: 03.30 PM to 05.30 PM

Venue: Jetpur Dying and Printing Industries Association Hall, Jetpur

| Duration | Activity |
|----------------|--|
| 3.30 to 4.00 | Registration & Tea |
| 04.00 to 4.10 | Welcome address by President, Jetpur Dying and Printing Industries Association |
| 04.10 to 05.10 | <p>Technical presentation by GCPC</p> <p>Mr. Punamchandra Rathod, Senior Project Engineer, GCPC on –</p> <ul style="list-style-type: none"> • Industrialization and Cleaner Production • Introduction to Industrial Growth of Gujarat • Pollution: Causes and effects • Pollution Prevention Strategy: Cleaner Production • Wet Processing and Cleaner Production <p>Mr. Abhi Patel, Assistant Project Engineer, GCPC on –</p> <ul style="list-style-type: none"> • Cleaner Production Case Studies <p>Mr. Hiren Bhendwal, Senior Project Engineer, GCPC on –</p> <ul style="list-style-type: none"> • Financial assistance schemes under IC policy, 2015 |
| 05.10 to 05.25 | Question – Answer session |
| 05.25 to 05.30 | Vote of Thanks by President, Jetpur Dying and Printing Industries Association |

Cleaner Production Promotion Programme at Jhagadia

(Venue: Jhagadia Industries Association Hall, Jhagadia, Dated 23/12/2015)

Gujarat Cleaner Production Centre had successfully organized a Cleaner Production Promotion Programme at Jhagadia Industries Association Hall on 23rd December 2015 between 2.30 PM to 4.30 PM.

The programme aimed to make the industrialists aware about the Cleaner Production, its background, CP techniques and tools and methodology to implement; with that, cost savings through the knowledge gaining about Cleaner Production techniques and providing access to financial schemes under Gujarat Industrial Policy – 2015.

The key attendees at the programme were Mr. Punamchandra Rathod, Senior Project Engineer, GCPC and Mr. Parmeshwaram, United Phosphorus Limited, and with that, more than 30 member industries from different sectors of Jhagadia Industries Association had attended the programme.

Mr. Parmeshwaram, on the behalf of Jhagadia Industries Association, welcomed GCPC team members and all the participants of the programme. Mr. Parmeshwaram enlightened the objective of the CP Promotion programme in his addressing speech. He appreciated the member industries of the association by saying that they are worried about the environmental pollution, all what they need is the guidance to curb it.

Mr. Punamchandra Rathod, Senior Project Engineer, GCPC made a presentation on GCPC activities in various industrial sectors of Gujarat. He explained the concept of Cleaner Production with its various important Environmental, Financial, and Social impacts. He threw some light on various Cleaner Production Tools with Methodology to assess and implement Cleaner Production in the industry. He also explained about the achievements of GCPC so far towards successfully implementing Cleaner Production in the state.

Mr. Rathod also presented some case studies of successful implementation of Cleaner Production in dyes and intermediates manufacturing industry, chemical industry and pharmaceutical industry. He differentiated current manufacturing method and advanced cleaner production method for economical and less polluting production.

He also explained Gujarat Industrial Policy – 2015 of Industries Commissionerate, Government of Gujarat, for Financial Assistance to implement Cleaner Production at industry and cluster level.

At the end of the programme, various questions were asked by the participants, pertaining to various technology options available, ongoing issues of industries, industrial

policy and criteria of eligibility for the financial assistance as per the Industrial Policy. Mr. Rathod deliberated on those issues and also gave technical explanation for the given problems.

The programme concluded with the vote of thanks to GCPC Team and participants of the programme by Mr. Parmeshwaram.

Photos of the event:





Gujarat Cleaner Production Centre

Cleaner Production Promotion Programme Schedule

Date: 23/12/2015

Time: 02.30 PM to 04.30 PM

Venue: Jhagadia Industries Association Hall, Jhagadia

| Duration | Activity |
|-----------------|--|
| 2.30 to 3.00 PM | Registration & Tea |
| 3.00 to 3.10 PM | Welcome Address by Jhagadia Industries Association |
| 3.10 to 4.10 PM | Technical presentation by GCPC on <ul style="list-style-type: none">• Industrialization and Cleaner Production• Introduction to Industrial Growth of Gujarat• Pollution: Causes and effects• Pollution Prevention Strategy: Cleaner Production• Cleaner Production tools and methodologies• Cleaner Production Case Studies• Financial schemes under IC policy, 2015 |
| 4.10 to 4.25 PM | Discussion session for all the participants |
| 4.25 to 4.30 PM | Vote of thanks by Jhagadia Industries Association |

Cleaner Production Promotion Programme at Sachin

(Venue: Conference Hall, CETP Globe Enviro Care Ltd., Sachin, Dated: 09/01/2016)

Gujarat Cleaner Production Centre organized cleaner production promotion programme on 9th January, 2016 at Conference Hall, CETP, Globe Enviro Care Ltd., Sachin. With objective to create awareness towards importance of cleaner production implementation and its benefits to the industries. The programme witnessed participation of Shri. Vatsal Naik, Chairman, Globe Enviro Care Ltd. Dr. Bharat Jain, Member Secretary, Gujarat Cleaner Production Centre (GCPC) and Shri. P.R. Rathod, Sr. Project Engineer, GCPC.

The inaugural function started with welcome speech from Shri. Vatsal Naik. He explained the objectives of the programme and also highlighted the problems faced by the chemical industries of Sachin GIDC Industrial Estate. He concentrated on the importance of the environment including industrial growth.

In next session Dr. Bharat Jain, Member Secretary, GCPC shared his experience wherein he mentioned about the industrial scenario of Gujarat including the need for cleaner production implementation and its benefits to face environmental problems caused by industrialization. He mentioned the best way to reduce pollution is to generate less waste.

Shri. P.R. Rathod, Sr. Project Engineer, GCPC made a detailed presentation on the concept of cleaner production and practices in context to chemical industries of Gujarat. He mentioned the case studies of successful implementation of cleaner production in industries of Gujarat. He also gave detailed information on incentive schemes for cleaner production implementation, common boiler facilities and schemes for common environmental infrastructure projects included under Gujarat Industrial Policy 2015.

The programme concluded Q & A session between experts and participants and concluding remarks.



Photos of event:



Cleaner Production Promotion Programme at Godhra

(Venue: Godhra Industries Association Hall, Godhra, Dated: 09/01/2016)

Gujarat Cleaner Production Centre (GCPC) in association with Gujarat Pollution Control Board (GPCB) organized a Cleaner Production Promotion Programme aiming on “Good Practices to be adopted to curb air pollution and dust emission in Stone Crushing Industries of Godhra at Godhra Industries Association on 9th January, 2016.

The objective of the programme was to make participants aware about the concept of cleaner production / clean technology in stone crushing units for overall environmental improvement.

The programme witnessed the participation of Shri. R.P. Gupta, Regional Officer - GPCB, Godhra. Shri. P.R. Rathod, Sr. Project Engineer, GCPC with representatives of around 50 industries from Godhra Stone Crushing Units.

The programme started with inaugural ceremony, including welcome speech by Shri. R.P. Gupta, Regional Officer, GPCB. He welcomed GCPC team and all the participants for their active participation in the programme and explained the objective of the programme. He also highlighted the issues faced by the Stone Crushing Industries during manufacturing operations. He concentrated on sustainable development by explaining the importance of environmental conservation along with industrial growth. He mentioned that so far many steps have been taken to reduce pollution in Godhra Industrial Estate, but it is always better to move towards preventive approach towards pollution rather than curative. He mentioned that the best way to reduce pollution is to generate less waste. He appreciated the efforts made by GCPC to implement the preventive approach in Godhra Industrial Estate.

Shri. P.R. Rathod, Sr. Project Engineer, GCPC continued the session presenting the concept of Cleaner Production and its successful implementation in Stone Crushing Units. He gave brief introduction to Cleaner Production Concept its advantages over the End of Pipe Treatment, Cleaner Production tools, methodology including role of GCPC in promoting and implementing cleaner production in various industrial estates of Gujarat. He also briefed on financial

He briefed about the manufacturing process of Stone Crushing Units including various sources of dust emissions and different health problems. He highlighted various cleaner production measures including the concept of responsible production to curb this issue.

The final part of the programme was an open discussion for all the participants, in which many participants asked questions/queries related to various problems faced by Stone

Crushing units related to pollution, waste generation, techniques for process improvement.

Shri. R.P. Gupta, Regional Officer, GPCB concluded the programme with vote of thanks.



Cleaner Production Promotion Programme at Vadodara

(Venue: Vadodara Industries Association Hall, Savli, Vadodara, Dated: 09/01/2016)

Gujarat Cleaner Production Centre (GCPC) in association with Gujarat Pollution Control Board (GPCB) organized a Cleaner Production Promotion Programme to build awareness on Cleaner Production Concept to the participants on 9th January, 2016.

The objective of the programme was to create awareness about the concept of cleaner production / clean technology to the participants from stone crushing units which leads to overall environmental improvement.

The programme witnessed the participation of Shri. Amit kumar Suthar, President Black Trap Quarry Owners Association, Vadodara, Shri. P.R. Rathod, Sr. Project Engineer, GCPC with representatives of around 50 industries from Vadodara Stone Crushing Units.

The programme started with inaugural ceremony, including welcome speech by Shri. Amit kumar Suthar, President Black Trap Quarry Owners Association, Vadodara. He heartily welcomed GCPC team including the participants. He briefed the objective of the programme. He also highlighted the issues faced by the Stone Crushing Industries. He mentioned the importance of environmental conservation and resource conservation during manufacturing. So far many steps have been taken to reduce pollution in Vadodara Industrial Estate but, as he mentioned, it is always better to move towards preventive approach rather than curative.

In next session, Shri, P.R. Rathod, Sr. Project Engineer, GCPC made a detailed presentation on the concept and methodology of cleaner production including its implementation process. He also briefed the advantages of implementing cleaner production. He mentioned about the financial assistance schemes for cleaner production under Gujarat Industrial Policy – 2015.

He gave glimpse about the manufacturing process of Stone Crushing Units including sources of dust emissions and different tips for dust control and waste minimization. He shared his experience with the participants about the cleaner production measures taken by different industries by presenting case studies of successful implementation.

The final session of the programme was an open discussion between the participants and the experts. The programme concluded with vote of thanks by Shri. Amit kumar Suthar, President, Black Trap Quarry Owners Association, Vadodara.



Photos of event:





Cleaner Production Promotion Programme at Guj-Tech Industrial Expo, Ahmedabad

(Venue: Seminar Hall Gujtech 2016, AES Ground, Ahmedabad, Dated: 06/02/2016)

Federation of Industries Association, Gujarat organized Gujtech 2016 'Industrial Expo' on 6th February, 2016 at AES Ground, Ahmedabad with objective to motivate SMEs of Gujarat. The programme witnessed participation of Shri. Jagdish Ramani, President, Federation of Industries Association Gujarat, Shri. Arvind Gajera, Hon'ble Secretary, Federation of Industries Association, Gujarat. Dr. Bharat Jain, Member Secretary, Gujarat Cleaner Production Centre and participants from various industries of Gujarat.

The inaugural function started inviting dignitaries and participants of the event. The session continued with presentation from Dr. Bharat Jain, Member Secretary, Gujarat Cleaner Production Centre, wherein he shared his experience in the field of cleaner production and mentioned the importance of Cleaner Production for the growth of SMEs. He said it always better to move towards preventive approach which is cleaner production rather than curative or End-of-Pipe treatment technologies.

He mentioned that SME sector plays a vital role in the growth of any region, as it provides employment opportunities which leads to sustainable development. He said, SME sector is a huge sector in India compared to other countries. So, to make vision of our Hon'ble Prime Minister of Make in India successful growth of SMEs is must.

He also gave detailed information on the schemes included under Gujarat Industrial Policy 2015 for SMEs of Gujarat including the incentives schemes for implementation of cleaner production and common infrastructure projects.

The programme concluded Q & A session between experts and participants and concluding remarks.

Cleaner Production Promotion Programme at Naroda

(Venue: Naroda Industries Association Hall, Naroda, Dated: 17/02/2016)

Gujarat Cleaner Production Centre supported Gujarat Pollution Control Board in organizing programme, jointly with National Productivity Council and Naroda Enviro Projects Limited at Naroda GIDC Industrial Estate on 17th February, 2016.

The programme witnessed participation of Shri. Sushil Vegda, Senior Environment Engineer, Gujarat Pollution Control Board, Gandhinagar, Shri. Sailesh Patwari, Chairman, Naroda Enviro Projects Ltd. and Shri. P. R. Rathod, Sr. Project Engineer, Gujarat Cleaner Production Centre.

The inaugural session started, discussing the concept of ease of doing business for higher productivity and sustainable growth, from officials of National Productivity Council. Shri. Sushil Vegda, continued the session discussing the initiatives taken by Gujarat Pollution Control Board for the same. He elaborated that the concept is all about commitment to make business easier, faster and competitive with objective of fostering inclusive growth. He also mentioned about the radical reform which facilitates entrepreneurship and improves the competitiveness of SMEs.

In the next session, Shri. P.R. Rathod, Sr. Project Engineer, Gujarat Cleaner Production Centre, discussed Cleaner Production initiatives in context to Ease of Doing Business. He mentioned that Cleaner Production acts as a tool to achieve sustainable development. Invest in Cleaner Production will allow you to reach new heights. He mentioned a very important note that 'Cleaner Production is all about invest in waste'. It is the concept of turning waste into useful products. It sees waste as resource rather than liability. He mentioned that cleaner production implementation reduces environmental impact of your business as it works as preventive approach rather than curative and works on zero waste philosophy.

The session continued with Questions and Answers including open discussion between experts and the participants. The programme concluded with vote of thanks by the officials of National Productivity Council, thanking the participants for their active participation in the programme.



Photos of event:



Shri. P.R. Rathod, Sr. Project Engineer, GCPC discussing Cleaner Production initiatives in context to ease of doing business at Naroda Industrial Estate



Cleaner Production Promotion Programme at Kheda

(Venue: Resin & Laminate Manufacturing Industries Association, Kheda, Dated:19/02/2016)

Gujarat Cleaner Production Centre is working on the promotion and implementation of cleaner production in industries of Gujarat since its inception in 1998. GCPC works with philosophy of preventing pollution including reduction of waste at source rather than curative (treatment approach), with this view GCPC has so far conducted more than 200 orientation programmes in Industries Estates all over the state.

On 19th February, 2016 Gujarat Cleaner Production Centre in association with Gujarat Pollution Control Board and Resin & Laminate Manufacturing Industries Association, Kheda organized a Cleaner Production promotion programme at Kheda. The objective of conducting this programme was to aware industries about the concept of cleaner production and its benefits.

The inaugural session started with welcome speech from Shri. Kiran Upadhyay, Regional Officer, Gujarat Pollution Control Board, Kheda wherein he mentioned the objective of conducting the programme. He gave brief introduction about the need for cleaner production implementation. He mentioned implementing cleaner production reduces environmental impact of the industries and converts waste into a resource. He mentioned cleaner production is all about positive mindset towards waste and pollution. It is concept which leads you to sustainable development and reduces negative impacts of industries on the environment. Implementing cleaner production reduces natural resource consumption in industries as it utilizes the raw material in a proper manner. He advised industries to adapt cleaner production measures to improve their production efficiency as well as raw material consumption.

Shri. Y. A. Tai, Unit Head, GPCB continued the session sharing his experience working with Gujarat Cleaner Production Centre. He briefed about the existing environmental pollution, issues of Resin & Laminate manufacturing industries. He highlighted common to all and crucially important issues of air emission, arising from various manufacturing operations. He also appreciated the efforts made by GCPC to implement the preventive approach in various Industrial Estates across the Gujarat.

The session continued with presentation from Shri. Kiran Varma, Assistant Project Engineer, Gujarat Cleaner Production Centre. He mentioned about the Cleaner Production strategies for Resin & Laminates Manufacturing Industries and briefed about the methodology used to implement cleaner production. During his presentation, he focused on the air pollution control measures especially for VOC component emission



issues in resin and laminates manufacturing industries. He also gave glimpse of ideas about process and equipment modification for reducing VOC emissions.

The session continued with Questions and Answers including open discussion between experts and the participants. The programme concluded with vote of thanks by Shri. Kiran Upadhyay, Regional Officer, Gujarat Pollution Control Board, Kheda thanking the participants for their active participation in the programme.

Photos of event:





Cleaner Production Promotion Programme at Vapi

(Venue: Centre of Excellence Hall, Vapi, Dated: 25/02/2016)

Gujarat Cleaner Production Centre in association with the Institute of Engineers, Vapi Industries Association and Indian Institute of Chemical Engineers organized Cleaner Production Promotion Programme at Centre of Excellence, Vapi. The objective of the programme was to create awareness about the concept and benefits of cleaner production in context to Zero Liquid Discharge. Shri. Yogesh Kabariya, President, Vapi Industries Association participated in the inaugural function wherein he mentioned the objective of conducting the programme.

The programme continued with introduction on ‘Cleaner Production Approach to Zero Liquid Discharge’ by Dr. Bharat Jain, Member Secretary, Gujarat Cleaner Production Centre. During his presentation Dr. Jain, mentioned the concept of Zero Liquid Discharge in relation to Cleaner Production. He shared his experience presenting few success stories of zero liquid discharge implementation at Atul Ltd. Ankleshwar, Gujarat and Arvind Santej, Gujarat including its benefits in Pulp and Paper and Textile Industries of Gujarat.

Dr. Jain, gave glimpse of GCPC activities and achievements in the field of cleaner production / clean technology. He mentioned cleaner production is a approach which sees waste as a resource rather than liability.

He added cleaner production is a approach which leads to industrial sustainability in long-run. Cleaner Production plays an important role in creating positive image of a company. Cleaner Production is all about positive mindsets.

The session continued with open discussion between experts and the participants. The programme concluded with vote of thanks.



Photos of event:



Dr. Jain, during the inauguration of the programme



Dr. Jain, interacting with participants during the programme



Cleaner Production Promotion Programme at Valsad

(Venue: Hotel Jai International, Valsad Dated: 29/02/2016)

Gujarat Cleaner Production Centre is actively engaged in promotion and implementation of cleaner production in industries of Gujarat since its inception in the year 1998. GCPC works with philosophy of preventing pollution rather than curative, with this view GCPC has so far conducted more than 200 orientation programmes in Industries Estates all over the state.

On 29th February, 2016 Gujarat Cleaner Production Centre organized cleaner production promotion programme at Stone Quarry Crushing Units Association, Valsad with objective to create awareness on cleaner production for environmental improvement and sustainable industrial development. The programme witnessed participation of Shri. Mukesh Thakur, President, Stone Quarry Crushing Units Association, Valsad, Shri. G.V. Patel, Regional Officer, Gujarat Pollution Control Board, Valsad and Shri. Harshul Gupta, Assistant Project Engineer, Gujarat Cleaner Production Centre with more than 50 participants from stone crushing units of Valsad.

The inaugural function started welcoming the guests and the participants from industries. Shri. G.V. Patel, Regional Officer, Gujarat Pollution Control Board, continued the programme explaining the objective of conducting this programme. Shri. Harshul Gupta, Assistant Project Engineer, GCPC continued the session presenting the importance of cleaner production implementation and its benefits to industries and environment. He also briefed the activities of GCPC in promotion and implementation of cleaner production across the state.

He also gave brief introduction of cleaner production policy and incentives on implementation of cleaner production by Government of Gujarat under the Gujarat Industrial Policy 2015.

The programme continued with queries and open discussion between the experts and the participants. The programme finally concluded thanking participants for their active participation.



Photos of event:



Shri. Harshul Gupta, Assistant Project Engineer, GCPC explaining the importance of cleaner production



View of Participants during the programme





Gujarat Cleaner Production Centre

Established by Industries & Mines Department
(Government of Gujarat)



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