GUJARAT POLLUTION CONTROL BOARD (GPCB)
AN OVERVIEW OF INNOVATIVE INSTRUMENTS FOR ENVIRONMENTAL GOVERNANCE

At
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INTRODUCTION

GPCB constituted under the Water (Prevention and Control of Pollution) Act, 1974,

- To protect the environment, prevent and control the pollution of water in the State of Gujarat,
- Entrusted with the Central Acts and relevant Rules for pollution control as notified thereof from time to time

MISSION STATEMENT

Development of all around capabilities to protect the environment by preventing and controlling pollution by effective law enforcement and by adopting best environment management practices to keep the State on course of sustainable development.

OBJECTIVES

- Bring about all round improvement in the quality of the environment in the State by effective implementation of the laws.
- Control of pollution at source to the maximum extent possible with due regard to technological achievement and economic viability as well as sensitivity of the receiving environment.
- Identifications of sites and development of procedures and methods for the disposal of hazardous wastes.

OBJECTIVES

- Maximization of re-use and re-cycle of appropriately treated sewage and trade effluent on land for irrigation and for industrial purpose thereby economising and saving on the use of water.
- Minimisation of adverse effect of pollution by selecting suitable locations for the establishment of new industrial projects.
- Co-ordination with State Government Agencies and local authorities to encourage the Common Environmental Infrastructure Facilities.
- Work with Educational Institutions, Non-Government Organisations, Industrial Associations, Government Organisations, etc. to create environmental awareness.

ACTS IMPLEMENTATION

The main function of the Board is to enforce the provisions of the following Acts, Rules and Directives dealing with Pollution Control and Environmental Protection.

A] Acts :

- The Water (Prevention and Control of Pollution) Act, 1974.
- The Water (Prevention and Control of Pollution) Cess Act, 1974.
- The Air (Prevention and Control of Pollution) Act, 1981.
- The Environmental Protection Act, 1986
- Right to Information Act, 2005

RULES IMPLEMENTATION

B] Rules :

- The Hazardous Waste (Management And Handling) Rules, 1989
- The Manufacture, Storage and Import of Hazardous Chemicals Rules,1989
- The Environmental Public Hearing Rules, 1997
- The Bio-Medical Waste (Management and Handling) Rules,1998
- Recycled Plastics Manufacture and Usage Rules, 1999
- The Noise Pollution (Regulation and Control) Rules,2000
- The Ozone Depleting Substances (Regulation and Control) Rules,2000
- The Municipal Solid Waste (Management and Handling) Rules,2000
- The Batteries (Management and Handling) Rules, 2001
- Right to Information Rules, 2005

NOTIFICATIONS IMPLEMENTATION

C] Notification and Schemes :

- The Environmental Clearance [including EIA –Environmental Impact Assessment] for expansion / modernization of activity or new projects Procedure Notification, 1994
- Utilization of Fly Ash – Notification of Directions, 1999
- The Environmental Audit Scheme, 1996
- The Coastal Zone Regulation

OFFICE NETWORK

- Head Office and Central Laboratory at Gandhinagar
- 04 Vigilance Cells for the effective and prompt monitoring
- 22 Regional Offices across the State
- 07 Regional Offices with laboratory facilities
- Man power strength of 427 employee
  - 87 are Engineers
  - 97 are Scientists

The Head Office performs:

- activities concerning general policies
- enforcement of various provisions of the Acts
- general administration and
- co-ordination with other agencies.

ACTIVITIES OF THE BOARD

One of the primary functions of the Board is to process and finalise consent applications received from various pollution potential units under the Water Act, Air Act and Hazardous Waste Rules:

Consent to Establish	*During Year 2010-11*	*During Year 2011-12*
Application received	2837	3632
Application Granted	1773	2170
Application Rejected	691	828
Under Process	373	634

ACTIVITIES OF THE BOARD

Applicability for CC &A:

- Every polluting agency for bringing into use an outlet for the discharge of sewage or trade effluent in to a stream or on land,
- Each industry emitting gas(es)
- Every unit generating hazardous wastes and having a facility for collection, reception, treatment, transport, storage and disposal of such wastes

Consents to operate and Authorisation	*During Year 2010-11*	*During Year 2011-12*
Application received	1542	1470
Application Granted	851	899
Application Rejected	476	367
Under Process	215	204

ENVIRONMENTAL INFRASTRUCTURES

- Common ETP: 37 (28 Established + 09 Proposed)
- Common TSDF: 08
- Common MEE- 04
- Captive TSDF: 13
- Captive MEE- 95
- Captive HWIF: 78
- Decontamination Facility : 03
- Treated Effluent Conveyance Pipeline: 07
- Common Hazardous Wastes Incinerator Facility: 05
- Common Biomedical Wastes Treatment Facilities: 13

INNOVATIVE INSTRUMENTS : SUCCESS STORIES

- XGN –Online system- e-governance
- Innovative technological instruments
- CP / CT tools
- Monitoring-Innovative tools
- Environment Audit Scheme
- Manuals preparation
- Action plans

INNOVATIVE INSTRUMENTS : eGOVERNANCE

XGN-SOFTWARE (EXTENDED GREEN NODE)

(Special Recognition Award for e-Governance by CSI in 2010)

- Regular and effective monitoring
- Transparency in the process
- Effective communication with stake holders
- Large data base development and its easy retrieval & analysis
- Better environment regulation of source and sink elements
- Quick decision making
- Increase in Water-Cess Receipts

Web Site : http://gpcbxgn.gujarat.gov.in

INNOVATIVE INSTRUMENTS : TECHNOLOGY

- Common Acid Management and Disposal Management
- Electro Oxidation
- Plasma Technology
- Cleaner Technology in manufacturing of H-Acid, V. S.- e.g. use of hydrogenation process in reduction to reduce Hazardous wastes generation
- Development of specific microbial culture for treatment of industrial effluent- Vapi-CETP experience
- Anaerobic Oxidation for high COD containing streams
- Multiple Effect Evaporator for High TDS streams

INNOVATIVE INSTRUMENTS :
CLEANER PRODUCTION / TECHNOLOGY

- Promotion of Centre of Excellence in each estate
- Emphasis on minimum use of resources and maximum recovery / reuse
- Instead of shifting the wastes from land to sea or using energy for RO and evaporation, 4R are promoted
- Specific conditions are imposed in this regard in CTE / EC
- Use of Non-Conventional Sources of Energy like Wind, Solar etc. are promoted / emphasized

INNOVATIVE INSTRUMENTS : MONITORING

- Regional Office and Vigilance office concept for monitoring
- Third party monitoring through academic institutes
- Whistle Blower Scheme- In which the Complainer is rewarded for providing genuine information / helping Board in pollution prevention
- Regular meetings with NGO and Industries Associations to redress their complaints / issues

INNOVATIVE INSTRUMENTS : PLANNING AND POLICY

ENVIRONMENT AUDIT SCHEME:

- Implemented as an outcome of the judgment of Hon. High Court of Gujarat
- Identified industries are required to carry out audit through third party auditors as per the scheme
- NEERI-Nagpur has evaluated the scheme for its implementation and out come
- NEERI in its report has suggested that other states shall also replicate the scheme for better environment management
- J-pal is also doing some research for improvement in the scheme

INNOVATIVE INSTRUMENTS :
COMMON ENVIRONMENTAL INFRASTRUCTURES

- All new Chemical SEZs / industrial clusters are insisted for setting up CETP / FETP prior final disposal
- Success stories of CETP for monoculture industry like rice mill, textile
- The same will be replicated in pharmaceuticals, CPC green / blue manufacturing sector
- Promotion of waste exchange bank concept (success story of novel spent acid management in Ahmedabad)
- Promotion of advance technology like plasma thermal destruction for BMW and industrial wastes
- CETP- management taken over by Government owned agency in case of not proper functioning

MAJOR ACHIEVEMENTS :
WASTE UTILISATION BY CO-PROCESSING

- App. 18000 MT waste has been co-processed in cement industries
  - Ambuja Cement, Junagadh 2519.56 MT
  - GEPIL, Surat to Lafarge Cement Ltd, Chhatisgarh 4020.69 MT
  - Sanghi Cement, Kutch 266.77 MT
  - Ultratech Cement, Kovaya 11175.28 MT

- XGN software is being used as a tool for accelerating co-processing activity by providing availability of waste with its type, quantity and contact details of industry and also providing details of waste generation and utilization
- Cement plants have been given targets to reach to 10% in next 03

MAJOR ACHIEVEMENTS :
ISO 9001 AND ISO 14001 ORGANISATION

- GPCB received ISO 9001:2000 in the Year 2009 for its Head Office at Gandhinagar and upgraded to ISO 9001:2008 in the Year 2010.
- 13 Regional Offices received ISO 9001:2008 in the year 2010 (out of the total of 22 Regional Offices)
- 09 Regional Offices are opened in recent past and GPCB is in the process of obtaining ISO 9001:2008 for these Offices.

MAJOR ACHIEVEMENTS :
NABL ACCREDITION FOR LABORATORIES

- Laboratory at the Head Office-Gandhinagar has obtained the NABL recognition certificate
- Process for the NABL recognition of other all Laboratories of the Board is under way
- Laboratories of the Board perform well in the AQC exercise of the CPCB
- Under ICZMP project, modernization of the Laboratory at Gandhinagar is under way with state of the art equipment-XRD,XRF, GCMS etc.

RECENT ACHIEVEMENTS

- Gujarat has been ranked at 5th position by National Planning Commission based on the Environment Performance Index (EPI)
- A study entitled "Successful Models of Implementation of Environmental Policies and Programmes in States" of the Planning Commission, following successful models of Gujarat are considered for its replication in the country:
  - Third Party Monitoring
  - Third Party Audit Scheme
  - ISO policy for Consent Management
  - Use of Information and Communication Technology-ICT (e-Governance in Environment Management through tool of XGN software)
  - Pilot Emissions Trading Schemes in Gujarat (ETS).

RECENT ACHIEVEMENTS

- Beginning of the Help Desk in all the Regional Offices
- "Environment Clinic for industry"- Launching of new concept in which the GPCB ,
  - A role of doctor –Diagnosis, Prognosis, Treatment & Therapeutics (Providing Solutions & Advising)- of Pollution related problems of the industry
- "Pollution Control"- A Sector of the Employment generation- An innovative and lead Role of GPCB
- Recognised Research Centre of the Gujarat Forensic Science University-A World renowned Forensic Institute.

RECENT ACHIEVEMENTS

- A Common Multiple Effect Evaporator at Naroda- An other illustration of strong co-operative base of Gujarat
- Novel Spent Acid Management- A solution for controlled management of the spent acid in Ahmedabad
- CCTV camera on the Chimney of boilers at Narol-Ahmedabad & Surat- an innovative monitoring and sensitization tool
- First 100% Solar Building of Gujarat : GPCB, Gandhinagar
  - Green plantation along the periphery of the compound as well as proper garden and landscaping, done by the forest department
  - 02 separate recharge wells for rain water harvesting where approx.750 cubic metre of rain water is expected to be recharged.

GPCB's NEW BUILDING :
FIRST FULL SOLAR BUILDING OF GUJARAT

Inaugurated on 9th April, 2012 by Mr. Narendra Modi, Chief Minister, Gujarat

- The solar panels set up atop the building over 2,000 sq. mt. space to generate 80 KW energy.
- Generates around 1,16,800 units/year against requirement of 84,000 units/year and the remaining units are fed to the Power Grid.
- Power to 600 fans, 1,000 CFL tube lights and 40 Acs
- Reduce CO2 emissions by more than 80 tons annually, equivalent to plantation 8,000 trees or removing appx. 2000 cars from road.

CHALLENGES AHEAD

- Critically Polluted Areas of the State
  - Vatva-Narol (Ahmedabad)
  - Naroda-Odhav (Ahmedabad)
  - Ankleshwar
- Polluted River Stretches identified by CPCB
  - Damanganga, Kolak, Par, Mindhola, Mini, Sabarmati
- CETPs Outfall not confirming to the desired norms
- Improvement of Ambient Air Quality in identified Non-Attaintment Cities of the state- Mainly RSPM

RESTRAINTS

- Technical man power
  - Paucity of the Engineers / Scientific Staff
  - Paucity of Quality & Experienced Man-Power
- Infrastructure
  - Vehicles
  - Sophisticated Instruments
    - Too Costly
    - Online instruments has limitation of legal back up

WAY FORWARD

- To make GPCB learning – Knowledge based organization
- Act as a facilitator instead of mere Regulator
- Networking with other technical and resourceful credible expert institutes like IIT, IIM, Harvard University etc.
- Use of Modern Technology in the Monitoring- On line, Real Time Data through continuous monitoring stations.
- Dissemination of the data in public domain.
- Strengthening of Common Environment Infrastructures
- Pollution Control – Source of Employment Generation

GUJARAT POLLUTION CONTROL BOARD

THANK YOU

ADDITIONAL INFORMATION

FUNCTIONS

Under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 :

- To advice the State Government, on any matter to plan and cause to be executed a nationwide programme for the prevention, control or abatement of air/water pollution.
- To collect information relating water/air pollution and to encourage, conduct, participate in investigations and research relating to problems of water pollutions.
- To plan a comprehensive programme through mass media for prevention, control or abatement of air /water pollution.
- To inspect sewage or trade effluents, works and plants for the treatment of sewage or trade effluent.

FUNCTIONS

- To lay down, modify or annual Effluent standards for the sewage and trade effluents and for the quality or receiving waters resulting from the discharge of effluents and to classify water resulting from the discharge for effluents and classify waters of the state.
- To evolve economical and reliable methods of effluents of sewage and trade effluents.
- To evolve methods of utilization of sewage and suitable trade effluents in agriculture.
- To evolve efficient methods of disposal of sewage and trade effluents on land
- To lay down standards of treatment of sewage and trade effluents, to be discharged into any particular stream.
- For prevention, control, abatement of discharged of wastes into stream or wells.

FUNCTIONS

- To collaborate with the Central Board in organising the training of persons engaged or to be engaged in programmes relating to prevention, control or abatement of air pollution and to organise mass-education programmer relating thereto.
- To inspect, at all reasonable times, any control equipment, industrial plant or manufacturing process and to give by order, such directions to such persons as it may consider necessary to take steps for the prevention, control or abatement of air pollution.
- To inspect air pollution control areas at such intervals as it may think necessary, assess the quality of air therein and take steps for the prevention, control or abatement of air pollution in such areas.

FUNCTIONS

- To lay down, in consultation with the Central Board and having regard to the standards for the quality of air laid down by the Central Board, standards for emission of air pollutants into the atmosphere from industrial plants and automobiles or for the discharge of any air pollutants into the atmosphere from any other source whatsoever not being a ship or an aircraft
- Provided that different standards for emission may be laid down under this clause for different industrial plants having regard to the quantity and composition of emission of air pollutants into the atmosphere from such industrial plants.
- To advise the State Government with respect to the suitability of any premises or location for carrying on any industry which is likely to cause air pollution.

FUNCTIONS & POWERS

Under the Environment (Protection) Act, 1986 and various Rules made thereunder :

- Specifying standards
- Guidelines for their operation
- Specifying compliance periods
- Checking compliance of standards
- Identification of critically polluted areas
- Receiving information on excess discharge of environmental pollutants
- Receiving notice about alleged offences and complaints in a State
- Receiving Environmental Statements

BIO-MEDICAL WASTE (MANAGEMENT AND HANDLING) RULES, 1998

Applicability of the Rules to:-

any institution generating bio-medical waste which includes :-

- A hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood-bank etc.
- An operator of a facility for the collection, reception, storage, transport, treatment, disposal

Bio Medical Authorisation	During Year 2010-11	During Year 2011-12
Application received	2188	2490
Application Granted	1703	1605
Application Rejected	135	55
Under Process	349	830

THE PLASTIC (MANAGEMENT AND HANDLING) RULES, 2011

- Plastic carry bags shall not be less than 40 micron in thickness
- Food stuff items will not be allowed to pack in recycle plastic or compostable plastic carry bags
- Use of plastic materials in sachets for storing, packing or selling gutkha, tobaco and has been banned.
- For enforcement of provision of these rules manufacturer and recycler of plastic shall have to register with SPCB

Plastic Waste Registration	Up to March 2011	Up to March 2012
Application received	422	539
Registration issued	303	402
Closure issued under EPA	26	44

NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000

Noise monitoring during Navratri festival

- In order to implement provisions of Noise (Regulation & Control) Rules, 2000 and compliance of various directives, the Board through its all the Regional Offices carried out noise level monitoring during festival of Navratri, Dasera and Diwali.

SAMPLING AND MONITORING UNDER THE WATER, AIR AND E. P. ACTS

- Industrial and domestic effluents collected under the provisions of the Water Act and the EP Act, and river and ground water sample collected under various projects –GEMS, MINAR
- Adopted a concept of detailed inspection of an industrial set up instead of just visiting for sample collection.
- Officers are giving corrective measures in writing at the site after detailed inspection and also doing follow-up for the real sense compliance

Sample Collected	*During Year 2010-11*	*During Year 2011-12*
Water Act	18445	16450
Air Act	3667	3361
E (P) Act	247	181

PROSECUTION LAUNCHED AND OFFENCES COMPOUNDED

- In the initial stage, the Board pursued industries to comply with the provisions of Acts and Rules by means of training, Seminars, Workshop, consultation and meetings with the Associations
- Statistics of issued notice of direction, closure direction:-

NOTICES Issued	*During 2010-11*	*During 2011-12*
Water Act	600	654
Air Act	475	368
E (P) Act	30	33

CLOSURES Issued	*During 2010-11*	*During 2011-12*
Water Act	604	555
Air Act	210	271
E (P) Act	43	65

PROSECUTION LAUNCHED AND OFFENCES COMPOUNDED

- However, even after giving notice and subsequently sufficient time to provide EMS and to comply with norms, the situation did not improve in many cases and the Board had to initiate legal action in accordance with the provisions of the Acts against the defaulter industries

	Up to 31-3-11	Up to 31-3-12
Cases Filed in the Court	3416	3450
Cases disposed off	2150	2197
Cases pending in the Court	1266	1253

IMPORTANT PROJECTS

- Regular Sampling and Monitoring of Water Bodies of the State:
  - ❖GEMS (Global Environmental Monitoring System)
  - ❖MINARS(Monitoring of Indian National Aquatic Resources System)
  - ❖Bio-Monitoring of Water Bodies
  - ❖Coastal Zone Monitoring Program
  - ❖Kalpsar Project
- Regular Sampling and Monitoring of Ambient Air Quality in the State:
  - ❖National Ambient Air Quality Monitoring (NAAQM)
  - ❖State Ambient Air Quality Monitoring (SAAQM)
- ICZMP- GPCB is one of the PEAs for Coastal Water Physico-Chemical Parameters

SEWAGE GENERATION AND DISPOSAL

Present status of underground drainage scheme	
Urban Local Body covered	26
Sewage Generation	237 MLD
Sewage collection	237 MLD
Sewage Treatment	237 MLD (Oxidation pond, aerated lagoons)
Disposal	Partially used in Agriculture & partially in Natural drain.

Future Five Year Planning	
No. of Urban Local Body cover	133 + Upgradation in 26 ULB mentioned above
Sewage Generation	1400 MLD
Sewage collection	1400 MLD
Sewage Treatment	1400 MLD Oxidation pond, Areated Lagoons, Activated Sludge process, UASB, SBR technology etc.
Disposal	Partially used in Agriculture & recycling of treated water

SEWAGE TREATMENT PLANTS (STP)

1. Total number of STP: 76

   (a)STP in operation: 72

   (b)STP under installation: 04

2. Total number of Oxidation Ponds: 34

THE MUNICIPAL SOLID WASTES (MANAGEMENT AND HANDLING) RULES, 2000

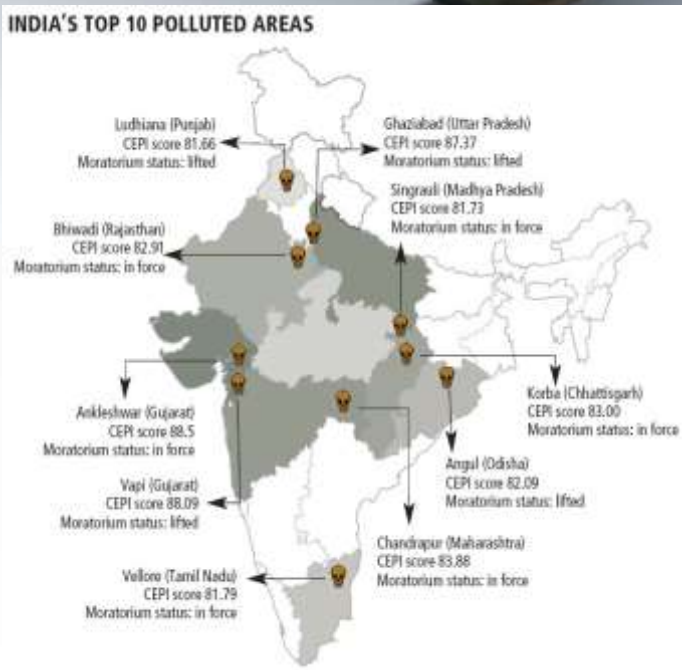
- All the municipal authorities to arrange for collection, segregation, transportation and suitable disposal of municipal wastes of the municipal towns/cities.
- They need to obtain authorisation of the Board
- All municipal authorities responsible for collection, segregation, storage, transportation, processing & disposal of municipal solid wastes

State Data:

- ✓ 59 Nagarpalikas, 08 Municipal Corporations, 04 Notified Areas and
- ✓ 01 Urban Development Authority
- ✓ 7600 MTD MSW is being generated
- ✓ 185 gram per capita MSW is generated
- ✓ 75 vermi compost plants are in operation and 21 vermi compost plants are constructed
- ✓ 69 urban local bodies (ULB) have valid Authorization of the Board
- ✓ The Board issued Notice of Directions to 51 ULB

COMPREHENSIVE ENVIRONMENT POLLUTION INDEX (CEPI)

- CPCB in collaboration with IIT, Delhi and others formulated the concept for Comprehensive Environmental Pollution Index (CEPI)
- Analyzed the environmental status of industrial cluster in the country in consultation with MoEF
- Clusters having CEPI > 70 classified as Critically Polluted Areas
- 06 Critically Polluted Areas in Gujarat out of total 43 nos. of the Due to stringent implementation of Action Plans, various action taken by DoEF, GPCB, GIDC, industrial associations, individual industries at present out of 06 industrial clusters Moratorium has been lifted from 03 industrial clusters.

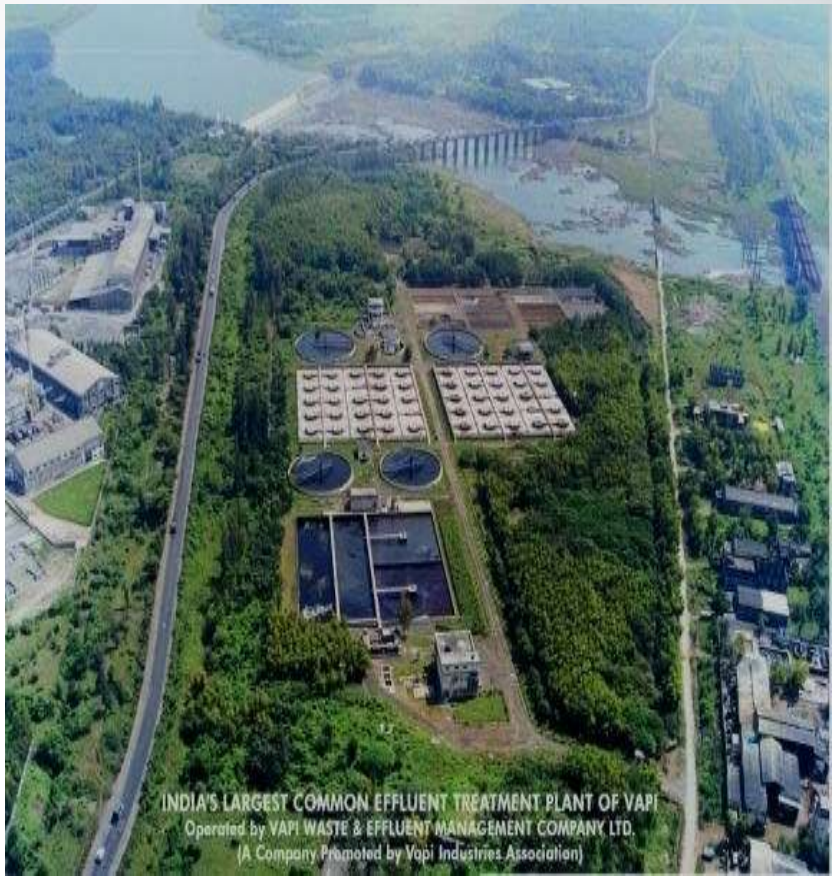


Ahmedabad,
Vatva,
Ankleshwar,
~~**Vapi,**~~
~~**Junagadh,**~~
~~**Chitra (Bhavnagar)**~~

ACHIEVEMENTS IN VAPI

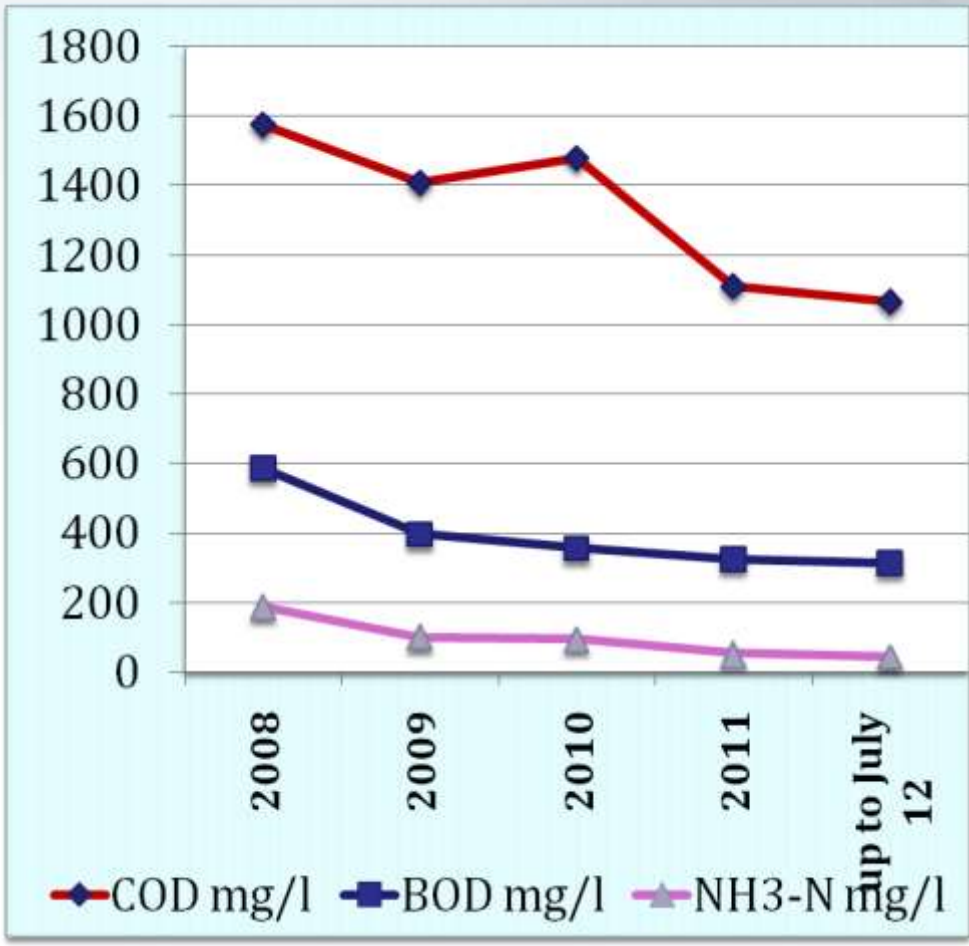
Summary of effort made at Vapi to reduce CEPI and to implement Action plan (2010-2012)

Investment made by	Rs in crore
VWEMCL members	80.81
WEMCL at CETP	8.08
VWEMCL at TSDF	7.34
TOTAL	96.24
Projects which are underway	379.48
Grand total	475.72



ANNUAL AVERAGE OF EFFLUENT DISCHARGE FROM CETP – VAPI OUTLET

Year	COD mg/l	BOD mg/l	NH_3-N mg/l
2005	923	236	266
2008	662	234	162
2009	709	195	104
2010	474	103	83
2011	509	132	50
Up to July 2012	394	116	45.833



ACHIEVEMENTS IN ANKLESHWAR

Summary of effort made to reduce CEPI and to implement Action plan

Name of Advance Treatment Techniques	Number of Units
Multi Effect Evoparator	58 installed + 10 under installation
Reverse Osmosis	43 installed + 5 under installation
Fenton Technology	11 industries + 2 CETP
AEROX System for Odour Control using Ozone	02
Fumes incinerator for odour Control	03
Rewcovery of NH3 from NH4Cl solution	01
Recovery of ammonia from ammonium carbonate solution & mfg of soda ash, biological – Anoxic treatment for reduction of Ammonia.	01
MAP process for reduction of Ammonical Nitrogen.	01 (CETP – ETL)
MBR technology for Secondary Treatment plant of trade effluent	02
Tertiary Treatment with Electro Coagulation and filtration for reduction of COD & Ammonical Nitrogen.	02

Collective approximate capacity of MEE is 5974 KL and that of RO is 8388 KL totaling to 14,362 KL.

Investment:-

- Collectively by Industries:

  Rs. 230 Crores
- Implementation of action plans

  for up-gradation of their EMS/ adoption of new advance technology, Operation Cost by individual units:

  Rs. 8-10 Crores per Month
- Work under progress:

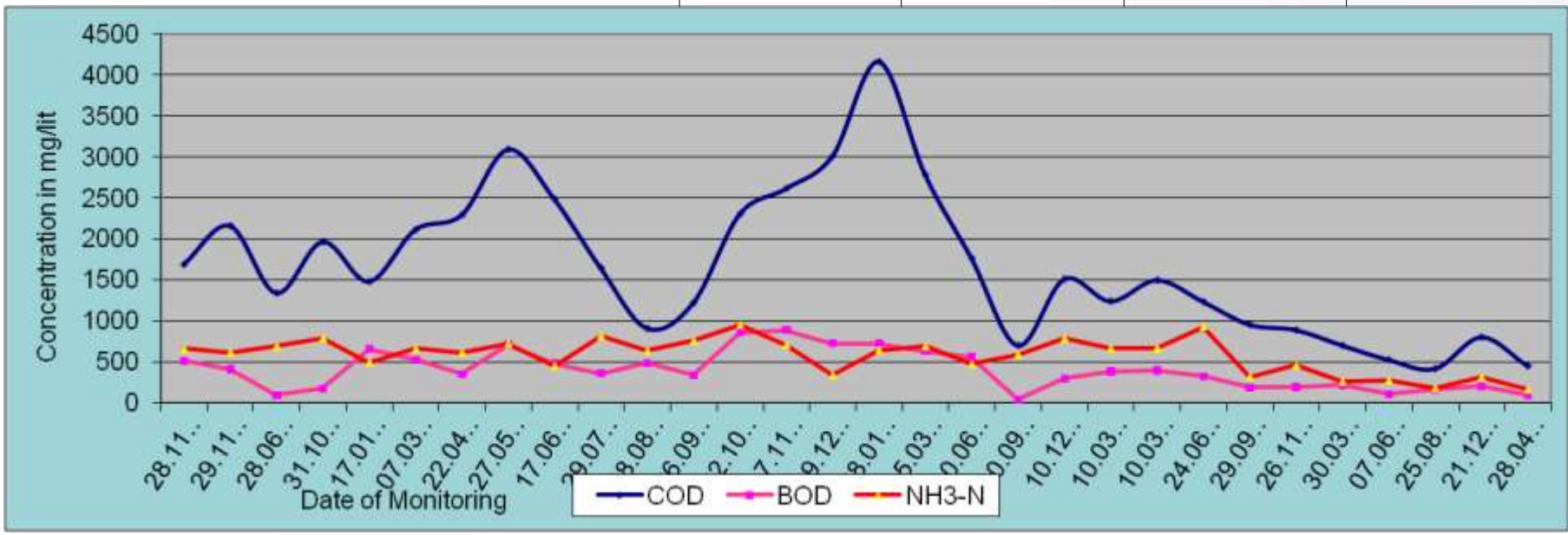
  Rs. 26 Crores
- Proposed to invest at Common infrastructure facilities:

  Rs.127.7 Crores

FETP AT ANKLESHWAR

Amla Khadi which was carrying industrial effluent since last two decades is now free from industrial effluent since one year due to various concentrated efforts.

	FETP Outlet		
Year	COD, mg/l	BOD mg/l	Amm-N, mg/l
2008	2168	570.2	665.6
2009	2182.6	449.4	635.8
2010	1164.2	295	608.4
2011	550	160	240.33
2012	452	90	164



ACHIEVEMENTS IN AHMEDABAD

- MEGA PIPELINE the treated effluent conveyance pipeline for Six CETPs viz. Naroda, Odhav, Vatva etc. and textile units of Narol

CETP Naroda: (3 MLD)

- Six effects Multiple Effect Evaporator system- 300 KLD for concentrated effluent will be commissioned very soon
- New electro coagulation tanks- 80 KLD for hardly biodegradable effluent, installed to achieve the norms.
- Augmentation in the existing aeration tank – 6 MLD is carried out

Financial outlay for the above up-gradation is Rs. 15 Crore

CETP Vatva: (16 MLD)

- Installation of additional clarifloculator for improved primary treatment- 2310 m3
- Additional Secondary Aeration tank for better secondary treatment -30000m3
- Multiple Effect Evaporator: 30m3/day (Pilot Plant already installed)
- Installation of MEE-1000m3/day

Financial outlay for the above up-gradation is Rs. 56.10 Crore.

ACHIEVEMENTS IN AHMEDABAD

Narol textile units:

- Commissioning of the new SCADA system operated pipeline for effluent conveyance
- CETP for textile units- 100 MLD

Financial outlay is Rs. 130 Crore

Danilimda area

- Planning for conveyance and treatment (CETP) for the effluent generating from the micro-small industries
- *Financial outlay – Estimated-120 Crore*

Up-gradation by individual Industrial unit (Vatva & Narol):

- *Total financial outlay Rs. 36 Crore.*

	Year	BOD in mg/l	COD in mg/l
River Sabarmati at Vasna-Narol Bridge	Permissible limit	30	100
	2008	210	365
	2011	40	114