Common Effluent Treatment Plants (CETP) - Concept and Practice

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Introduction

Rapid rate of industrialisation in India is contributing to the fast economic progress of the country. At the same time environmental degradation due to air and water pollution from industries is increasing to an alarming extent. Further, State Governments are proposing to establish a number of growth centres for industrial development, particularly in backward areas. A number of large scale industries with foreign collaborations are being established all over the country. To support these industries a number of small scale units will crop up, as job subcontracting is the order of the day. It is estimated that 60% of total industrial pollution load is contributed by small scale sector.

Large scale industry, whose investment amounts to more than Rs. five crores can afford to install efficient effluent treatment plant at heavy investment. Financial constraint, space and skilled manpower to operate the treatment plant restrict the small scale units to establish suitable treatment plant and to operate. Even large scale units avoid labour intensive operation and maintenance work of Effluent Treatment Plant by subcontracting the work to private agencies. It is difficult to treat low volume and high strength effluents generated by small scale industries. Further, pollution load in these units vary at different periods depending upon varying job requirements. They cannot afford to provide automatic dosing and other latest technology based systems for treatment.

Concept of CETP

In order to overcome the above problems and to cater to cluster of medium/small scale industries, effluents from these industries are collected at a common centre with laboratory as well as operation and maintenance facilities for treating and disposal of these effluents. Utilising the latest technology for treatment, manned by experienced and qualified chemists and engineers, these centres ensure that the treated water meets the limits for the pollutants set up by the state Pollution Control Boards. The mode of transport of the effluent from the industries to the centre may be through pipelines or through tankers borne by transport vehicles.

It is convenient to treat the effluent from similar industries. However, technology is available to treat the effluents from different types of industries. Generally, these centres are established and run on co-operative basis. Different methods are available for cost sharing by individual members depending on the volume of the effluent and concentration of the pollutants. Recycling and reuse of water or recovery of useful materials from waste can be well organised in CETP, wherever possible.

In each SSI, the industrial effluent needs to be segregated appropriately and not allowed to mix with the domestic waste water as well as wastes that produce objectionable, hazardous wastes on intermixing. They need to attend to preliminary treatment to the extent possible

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at collection points of each SSI before the effluent is passed (through the channels wherever designed or otherwise by alternative transport) for treatment of the effluent to CETP's. The domestic waste water (free from industrial waste water) is to be led to the Corporation/Municipal Domestic waste water treatment plants/ Septic tanks.

INVESTMENT, GRANTS & LOANS FOR THE SCHEME

The investment for CETP is shared as follows:

1. *State Government Grant: 25% subject to a ceiling of Rs.50 Lakhs.*
2. *Central Government Grant: 25% subject to a ceiling of Rs.50 Lakhs.*
3. *Promoters contribution: 20% (minimum)*
4. *Loan from IDBI / other financial institutions: Balance amount.*

PROCEDURE FOR ESTABLISHMENT

1. *Formation of an organisation to establish and manage the unit covering the concerned industries.*
2. *Preliminary assessment*
   - a) *To prepare the inventory and classification of the industies*
   - b) *To survey the nature and quantity of effluents, collection of samples from industries for laboratory/ pilot plant study for treatment*
   - c) *To arrive at suitable treatment methods and to decide about the mode of sharing the cost by individual members.*
3. *Selection of suitable land to house the centre and action to aquire the land - with the assistance from State Government agencies - at reasonable rate.*
4. *Preperation of feasibility report.*
5. *Preperation of project report with assistance from consultants in the field and submitting the same to State Pollution Control Board for approval and forwarding to the Ministry of Environment and Forests, Govt. of India for final approval.*
6. *Collection of contribution from individual members.*
7. *Approaching industrial development bank or other financial institutions for loan, if needed.*
8. *Preparing technical drawings and floating tenders.*
9. *Civil construction, installation of equipment and commissioning.*

ROLE OF DIFFERENT ORGANISATIONS ASSOCIATED WITH CETP

1. Promoters

Major beneficiaries of this scheme are the promoters, generally the individual member industries. They have to put all efforts to establish and run the plant. Measures for minimisation of effluent are to be adopted in their industries to minimise the load on CETP. Regular payment to the organisation for treatment of effluent from their industries are to be made. Qualified and trained Chemists and Engineers to maintain the plant are to be employed in order to see that treated water conforms to the standards specified by the State Pollution Control Boards.

2. State Pollution Control Boards

Pollution Control Boards are finding it exceedingly difficult to monitor pollution control in the industries under their jurisdiction due to limited manpower and financial restrictions. Also the industries are scattered over at different areas. Organised CEPT's with efficient treatment and accurate analysis facilties will reduce the burden on State Pollution Control Boards. Therefore, they have to encourage the formation and functioning of CETP's. Enforcing strict monitoring on the effectiveness of the plants is essential.

3. State Government

The state governments are responsible to see that ecological balance is maintained. They have to encourage establishment of a number of CETP's in all industrial areas of the state by alloting land at reasonable price for housing treatment plants and offering subsidy wherever possible. They have to clear the approval of the scheme and release the grants on priority to avoid escalation of the project cost due to delay.

4. Scientific & Technical Organisations / Consultants

Since CETP's are meant for a social cause to keep our environment clean, assistance in the formation and functioning, particularly in trouble shooting - has to be available at reasonable cost. Various organisations such as IIT at Madras, Tamilnadu Leather Institute, NEERI, Electrochemical Society of India, National Productivity Council and others have already come forward to offer their services.

5. Financial Institutions

Industrial Development Bank and other Financial Institutions have to sanction loans expediously at low interest and release money on priority.

6. Environmental & Social Organisations

It is important to see that the CETP's do not exist as showpieces, leaving all the responsibilities to pollution control boards to monitor. Independant & voluntory organisations should watch the activities & bring malpractices and bad functioning associated with CETP's to the notice of the authorities concerned and public.

PRESENT STATUS OF CETP's IN INDIA

This scheme was initiated by the Government of India in the year 1991. 35 CETPs were approved upto April 1991 and 100 units were in the pipeline. However only a few units have reached, the stage of commissioning the plants. The following is the status of CETPs in different states.

1. Andhra Pradesh

Two units, one at Jeedimetla covering 97 units and the other at Pattancheru (44 units) have been commissioned. Four other plants are yet to be commissioned.

2. Gujarat

There are five plants at different stages of commissioning. The one at Vapi is supposed to cover 1500 units. The next large one is being set up at Ankleswar.

3. Karnataka

Three units in Bangalore city, two covering metal finishing industries and one for leather industries are being set up and they are at different stages of commissioning. One unit at Bidar, covering mainly bulk drug manufacturing units, is proposed. There is large scope for establishing CETPs in the industrial areas of each district.

4. Madhya Pradesh

CETPs are proposed to be established at Govindapura in Bhopal, Maharajapura, Gwalior, Raipur (140 units) and at Indore.

5. Maharashtra

Nine projects are on the anvil and some of them are in the advanced stage of commissioning. The one at Thane Belepur covering 320 units in the largest.

6. Tamilnadu

About 24 plants are at various stages of commissioning. Some of them are in the advanced stage. Most of them were projected under the old scheme of the Ministry of Environment & Forests. They are directly under the control of Tamilnadu Leather Research Institute and Tamilnadu State Pollution Control Board. The plant at Thirupur-1 covering 352 units is the largest.

Data from other states are not available.

In order to propogate this scheme, a workshop on CETP, sponsered by the Ministry of Environment & Forests in Technical Collaboration with the National Productivity Council was conducted by the Indian Institute of Public Administration at New Delhi on 6th & 7th June 1994. About 40 participants, representing promoters of CETP from different parts of India and concerned authorities such as Ministry of Environment and Forests, Govt. of India, Central and State Pollution Control Boards participated in the proceedings. The meet afforded an opportunity to discuss the problems mostly Financial and Technical matters and helped to know the present status of the scheme. Free discussions among the participants and group discussions brought out the following points:

a) Need to clear the project early to avoid escalation of project cost due to delay in approval.

b) Recommendation by the Central Government to State Governments to allot land on priority and to provide land filling location to dispose off hazardous solid waste from CETPs so that CETPs can be established at reasonable cost.

c) To accord all benifits sanctioned to small scale industries to CETP organisations.

d) Expedious payment of grants from State & Central Governments.

e) Provide training programmes for staff of CETP and assistance from professional organisations for troubleshooting in the plants.

CONCLUSION

This scheme is essential in all our industrial areas to cope up with the increasing hazards from industrial pollution. There is scope for establishing CETPs in each industrial area. Let us hope that by the turn of this century, thousands of CETPs blossom and flurish in our country to keep our environment clean