

Common Effluent Treatment Plants

Wrong Question. Wrong Answer

World Bank Project ID: 3334IN and 2252IN (1991); 3779 and 3789IN, and 2645IN

Abstract: World Bank knowingly popularized Common Effluent Treatment Plants, a technology that was inherently and technically inappropriate to deal with the complex problem of mixed effluents from polluting industries. By promoting CETPs, the Bank injected a false sense of complacency among the community, and indefinitely delayed the search for a real solution, even while pollution of groundwater and nearby lands went unchallenged. World Bank's endorsement of this technology has resulted in effects beyond the scope of the Bank-funded projects, as courts and Governments readily prescribed CETPs as the magic-wand solution to industrial pollution. The Bank has admitted in fine print that "CETPs generally fail to address toxic effluents." But project appraisal documents pin the failure on a poor monitoring and enforcement regime rather than on the technology itself. Indeed, the Project Performance Assessment Report (2007) for the projects that promoted CETPs continues to view CETP as a viable technological option for dealing with industrial effluent, despite the fact that the Bank has categorically stated that "By the mid-1990s, the Bank's Environment Department was already starting to recognize the possible drawbacks of CETPs and the traditional approach to pollution control (as opposed to pollution prevention and cleaner production.)"¹

Almost as if the 1984 Bhopal gas disaster were an indication of things to come, the years following the disaster were marked by angry public protests over rising pollution, degradation of farm lands and pollution of groundwater. Pollution issues were mobilizing communities and posing a political problem that Governments were forced to contend with. All this clearly posed a challenge to the Bank-led reform agenda that was being insinuated into India's decision-making circles.

The year 1991 is acknowledged by many as the "launch" date for India's liberalisation program. That same year, the World Bank approved the Industrial Pollution Control Project with an IBRD loan of \$124 million, and an IDA credit of \$31.6 million. A key component of this project was the financing of Common Effluent Treatment Plants (CETP) "at industrial estates and other sites with a heavy concentration of chemical and related industries, in particular of small size."² The project focused on four states – Gujarat, Maharashtra, Tamilnadu and Uttar Pradesh. In 1994, the Bank approved a second project – Industrial Pollution Prevention Project. While the project name

¹ "Central Effluent Treatment Plants (CETPs) and the World Bank in India [Background Note]." World Bank. Enclosed with letter from Richard Ackermann, Sector Director, Environment, South Asia Region, to Remi Parmentier, Greenpeace International, dated November 1, 2000.

² "Industrial Pollution Control Project." Staff Appraisal Report. Industry and Finance Division, Asia Technical Department. May 7, 1991. p. 18

suggested a shift from pollution control to prevention, the Bank continued to finance the setting up of CETPs as part of the IPPP.

Curiously, the World Bank predicts in 1991 what the Action Plan will say in 1993. Writing in 1991, the Bank argues that “The proposed [Industrial Pollution Control] project fits within the proposed Bank strategies in the environmental sector in India as described by the Environmental Action Plan now being developed by the Government with Bank assistance.” The Action Plan was published only in December 1993.

The Problem with CETPs

CETPs are an end-of-pipe technology. End-of-pipe technologies are known to be the most expensive (if ecological costs are to be considered as well) of measures to deal with pollution. Indeed, the Government of India acknowledges that “the adoption of clean technologies, waste minimization and resource recovery programs. . .frequently represent the cheapest alternative to treatment by providing technical assistance and financing development of suitable technologies.”³

CETPs may have limited utility in treating homogenous waste streams from similar industrial facilities. But they are technologically inappropriate to treat waste streams arising from diverse manufacturing processes. Even for single-process industrial clusters – like tanning, electroplating etc – the efficacy of CETPs hinges heavily on the monitoring and enforcement regime. Further, CETPs clean the wastewater by transferring the pollutants in the liquid medium to the air (volatile organic compounds) and the sludge (toxic metals and persistent chemicals). Besides air pollution in the vicinity of the CETPs, these units are a major source of toxic sludge that when dumped on land can leach poisons into the groundwater. At the time that CETPs were promoted in India, there was not even one secure landfill facility capable of safely storing the toxic sludge temporarily.

The World Bank knew much of this, but decided to use India as a guinea pig for an untested technology. The World Bank’s analysis questioning the suitability of this technology to address the rampant problem of discharge of untreated wastewater was to come more than a decade later.

By this time, however, following in the path set by the World Bank, judges and Governments across the country went about merrily ordering the setting up of CETPs as a relief to farmers frustrated about the discharge of untreated effluents.

At least 88 CETPs, with total capacity of 560 million litres per day, were financed as part of these projects.⁴ Between 2002 and 2005, the Central Pollution Control Board studied the performance of 78 CETPs. Only 5 out of 78 were found to be compliant with the standards for basic parameters of COD, BOD, TDS and TSS. The CPCB concluded that “the performance of CETPs has been very unsatisfactory.”⁵

³ “Industrial Pollution Control Project.” Cited above. Page 14.

⁴ “Performance Status of Common Effluent Treatment Plants in India 2002-2005.” Central Pollution Control Board.

⁵ “Performance Status of Common Effluent Treatment Plants in India. 2002-2005.” Central Pollution Control Board. <http://www.cpcb.nic.in/Water/CETPS.html>

In November 2000, in response to protests by residents and Greenpeace downstream of a CETP in Vapi, Gujarat, the World Bank wrote to Greenpeace that “we agree with you on the dangers of CETPs.” The Bank’s Environment Director for South Asia Region also enclosed a note that acknowledged that “CETPs generally fail to address toxic effluents.” Citing an internal review of the IPCP and IPPPs in the late 1990s, the Bank highlighted a range of problems associated with CETPs, including: procedural delays, problems with ownership structures of CETPs, cost overruns, management of toxic sludge and the enforcement of pretreatment requirements among CETP member companies.

Despite its open observations against CETPs, the Bank continued to promote CETPs with minor modifications, none of which address the problems arising from the inherent limitations of the technology and from operating such a flawed technology in a virtually unregulated environment.

For instance, in a January 2007 appraisal report, the Bank concludes that “preventing and controlling pollution from small and medium-scale establishments through better functioning CETPs. . .appears to be the principal ongoing challenge. . .Both at the Central and State Government levels, GOI recognizes the need to improve the design, implementation and operation of CETPs to focus more on smaller polluting industries.”⁶

The multimillion dollar IPC and IPP projects scored very poorly in the Bank’s appraisal process. Both the Bank and the Government’s performance have been rated unsatisfactory. However, it is not them but communities at the receiving end of pollution that will pay for these mistakes.

Case Study: Common Effluent Treatment Plants in Gujarat

In 1999, Greenpeace conducted a comprehensive analysis of the “treated” wastewater discharged by the Vapi Common Effluent Treatment Plant, and sludge taken from the CETPs or treated wastewater channels in Ankleshwar and Nandesari.

The analyses highlighted the presence of extremely toxic substances and high levels in the treated wastewaters and the sludge. In the absence of any storage facility for the sludge, the toxic residue from CETPs were dumped on open land and riverbanks. CETPs have themselves been responsible for the contamination of groundwater reserves.

CETP at Ankleshwar Industrial Estate

Sludge from the CETP contained high levels of copper, and persistent organic pollutants including hexachlorobenzene, chlorinated benzenamines and several environmentally toxic polychlorinated biphenyl isomers. Samples of water from the river receiving “treated” wastes from the CETP were found to contain high levels of manganese, copper, cadmium, chromium, nickel and zinc. River sediment contained elevated levels of chromium, mercury, and copper.

CETP at Nandesari Industrial Estate

⁶ “Project Performance Assessment Report: Industrial Pollution Control Project; Industrial Pollution Prevention Project.” Independent Evaluation Group, The World Bank. January 2007. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/05/21/000020953_20070521110522/Rendered/PDF/38472.pdf

A mixed chemical industrial estate, Nandesari was one of the earliest estates to set up a CETP. Treated wastewaters are transported through a surface channel to the Gulf of Khambat more than 55 kilometres away. The channel used to be an agricultural irrigation canal, on either side of which are farmlands.

The sludge from the CETP settling pond revealed at least 49 chemicals, including di-, tetra-, penta- and hexa-chlorobenzenes, benzenamines, chlorinated toluenes, chlorinated naphthalenes and hexachlorobutadiene. The latter is an indicator of the presence of dioxins.

Treated wastewater collected from the effluent channel contained alkylated benzenes, dichlorobenzene, naphthalene and butylated hydroxytoluene (BHT).

CETP at Vapi Industrial Estate

“Treated” effluents from the Vapi CETP are discharged into the Damanganga River, an important river from a fisheries point of view. A sample of the treated effluent from the Vapi CETP contained 12 organic compounds, including chlorobenzenes and chlorinated benzenamines, apart from cadmium, chromium, copper, lead, mercury, nickel and zinc.