

EXTERNALLY ASSISTED PROGRAMME

WBPCB-ICEF (India-Canada Environment Facility) Project on “Pollution prevention and waste minimisation of small-scale industrial units in Kolkata Metropolis Area”

Background

Deteriorating air quality in Kolkata is a major environmental concern for quite some time. Regular air quality studies showed that the city air is loaded with high levels of Particulate Matter, particularly the smaller and respirable fractions, which have direct health impact on the exposed city population. Studies conducted by the State Environment Department during 1997 to 2000 indicated that the lungs of the city residents was seven times more burdened with small particulate matters compared to their rural counterparts.

In order to prioritise the action programme for improving air quality of Kolkata, the West Bengal Pollution Control Board (WBPCB) in 2001 made an estimation of emission contribution from various industrial sectors in Kolkata. About 56 per cent of the emission

was contributed by the large and medium industries whereas, about 44 per cent were contributed by the small-scale units operating within the city limit. Although the WBPCB, through strict enforcement of emission standards and regular surveillance could contain the emission from the large and medium industries, uncontrolled emissions from the small-scale industries was the major headache of the Board for quite some time. These small units were using age-old technologies and were operating small coal-fired energy inefficient heating installations like boilers or furnaces. Besides, the coal-fired ceramic kilns operating in the fringe areas of the city were also contributing to the city air.

Conceptual Approach

As the major industrial sources of particulate pollution were the small industries operating

coal-fired boilers or furnaces and ceramic kilns in Kolkata and surrounding areas, who were enjoying much lenient particulate emission standards of 1200 mg/Nm³, the Board under the Environment (Protection) Rules introduced a stricter emission standard of 150 mg/Nm³ for regulating their emissions. This stricter standard was applicable for small boilers (steam generation capacity < 2 TPD), ceramic kilns and iron foundries operating within Kolkata Metropolitan Area (KMA).

As most of these industries are small-scale in nature and do not have adequate space and fund for installing emission control system required for achieving the stricter standard, the Board directed these small industries to convert their coal-fired heating installations to cleaner fuel-fired ones.

Financial Assistance under WBPCB-ICEF Project

On one hand, the Board being an environmental regulatory agency was ensuring the compliance to the stricter emission standard and fuel conversion in small industries through regulatory mechanism, it also realised the financial constraints of these small industries to put up the green field equipment. Therefore, in order to provide financial assistance to these small units, the Board commissioned a project titled "Pollution Prevention and Waste Minimisation of Small Scale Industrial Units in Kolkata Metropolis Area". The industries were required to invest upfront to complete the conversion and claim for reimbursement of 50 per cent of the cost of conversion. After successful conversion, compliance to the stricter standard and submission of the requisite documents, the reimbursement was to be made through the WBPCB-ICEF project.

Progress of the Project

Among the 212 units using small coal-fired boilers within KMC area who have applied for financial assistance under the project, 181

units have completed fuel conversion, 16 are at various stages of conversion and the rest are closed. Although these 181 units have applied for availing financial assistance under the project and completed conversion, only 149 units (153 cases) could be provided with the fund. The remaining units are yet to submit the documents required for releasing financial assistance. Among 23 ceramic kilns within KMA, 18 have completed conversion and the rest five do not have any kiln at present.

During the financial year 2005-2006, four Experts' Committee meetings were held for reviewing and approving the financial assistance to the industries. Financial assistance were provided to 36 units [Rs. 80,82,123/-]. Group counseling meeting was organised to apprise the stakeholders regarding the documents to be submitted for release of financial assistance. A total 373 inspections and 75 stack emission monitoring were conducted during 2005-2006.

The Environment Governed Integrated Organisation (EnGIO) has completed a study "Social Impact of the Project, Conversion of Coal Fired Industries to Oil Fired Ones, on the Industry, Stakeholders and Neighbourhood Populations" for assessing the socio-economic impacts of the WBPCB-ICEF project and submitted the final report. During the study, the owners of the industries admitted that the technology is user-friendly, time-effective and has resulted optimum fuel use with lesser wastage of fuel compared to coal-fired systems. The boiler or kiln operators overwhelmingly accepted the new technology and experienced better health and working environment as the new system is less labour-intensive. The neighbouring people appreciated that they could not find any black all-pervading smoke and feels that the new system would ensure better health. Even in some of the areas, the landuse pattern has been completely changed. The project has also built better industry-neighbourhood relationship.

One student of Masters of Technology from Jadavpur University conducted a study on the

project and another student from The Energy and Resources Institute, New Delhi worked in the project as a summer trainee.

Assessment

The success of the project is governed by the regulatory pressure and economic incentives. The project has been highly acclaimed by the industry associations, State and Central Government and also the international agencies like World Bank. Besides the direct environmental improvement of Kolkata, the project has also reduced the total CO₂ emissions (about 29,000 tonnes per annum) from these industries. The project has also resulted in better quality of products, improved work zone environment and better

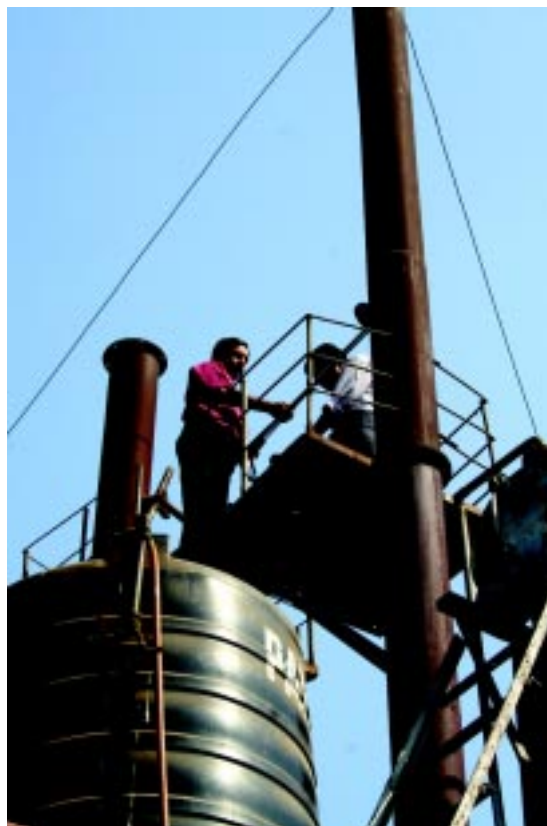
industry-neighbourhood relationship. This project has thus established the desire, responsibility and mindful role of the WBPCB and the ICEF in improving the environment of Kolkata.



New oil-fired boiler



New oil-fired tunnel kiln



Stack emission monitoring