

Minutes of the 28th meeting of the Project Appraisal & Approval Committee
(PAAC-EPC) held on 26.04.2024

28th meeting of the Project Appraisal & Approval Committee (PAAC-EPC) for utilization of EPC funds, chaired by Chairman, CPCB, was held on April 26, 2024 via video conferencing. Members of CPCB constituted Technical Committee (TC), which evaluated the overall feasibility of the smog tower installed at Anand Vihar, also participated in the meeting. List of participants is placed at Annexure - I.

02. AQM division briefed the committee that the smog tower at Anand Vihar was installed in compliance of directions of Hon'ble Supreme Court. In this regard, MoEF&CC had submitted an affidavit in the Hon'ble Supreme Court, indicating that on the analysis of efficiency of the demonstration tower, a decision may be taken on installing multiple towers. The performance evaluation study of the smog tower at Anand Vihar was done by IIT Bombay and the same was completed in December 2023. IITB was also requested to conduct the performance evaluation during Jan-March 2024, however, IITB expressed that the project is closed from their side.

03. In order to review the overall feasibility of the smog tower and its further utility, a technical committee was constituted by CPCB, comprising expert members from CSIR, NEERI, IIT Bombay, IIT Delhi, IIT Kanpur as well as CPCB. The representatives from IIT-Bombay did not participate in the committee proceedings, citing conflict of interest as they were proposers and executors of the project. Further, the committee convened four meetings and discussed the reports and findings therein submitted by IIT Bombay. The committee also worked on the cost-effectiveness of smog tower vs other air quality interventions, i.e. Conversion of diesel autos (BSIII/BSIV) to electric autos & BSVI CNG autos, and construction/repair of unpaved/deteriorated roads. Besides this, the committee also looked at the performance data of similar design based smog tower installed at Connaught Place (CP), Delhi so that performance of the two towers installed and operated in different air quality scenarios and local conditions may be compared. The committee had also sought detailed performance data from IIT Bombay but in response, IIT Bombay had suggested the final report should be used as a baseline document for any further assessment. Based on the available data, the Committee prepared its draft report and this meeting was convened to discuss the

 

findings/observations of the report of the Committee and to take a decision on further operation of smog tower.

04. A detailed presentation was made by CPCB on the methodology adopted for doing cost-effectiveness analysis, results of the assessment and overall findings/observations of the Technical Committee regarding performance of tower, cost-effectiveness and its utility. The observations of Technical Committee are summarized as under:

- I. Smog Tower is based on universally known and tested filtration technique, which works well where the 'zone' or 'space' is well defined/ partially enclosed.
- II. Though the intrinsic efficiency was reported to be around 80-90%, the effectiveness of the Smog Tower in Anand Vihar was observed to be limited, with around 20% PM reduction up to a distance of 400 m. Further, similar performance has been observed in the case of Connaught Place smog tower where no immediate source of pollution was present unlike RRTS construction in the case of Anand Vihar.
- III. PM reduction in the given zone of influence was not found to be sustained under variable PM loadings and meteorological factors.
- IV. There are other technical challenges such as night time operations, hindrances to clean air flow due to obstacles, complex operations, high energy demand and land requirements.
- V. As per the cost-effectiveness assessment done in case of smog tower vs other two air quality improvement interventions, least cost-effectiveness was observed in case the smog tower and highest cost-effectiveness was observed in case of construction of unpaved roads.
- VI. High operating and capital costs may not be a significant deterrent in matters concerning environmental protection and human health, however, considering the overall effectiveness and other observations made related to functioning of smog tower, further operation of the tower may not be appropriate. The smog tower is neither a viable technology at 'local' or 'zonal' or 'urban' scale, nor a stable technology with respect to maintaining the level of PM concentration in the filtered air jet at the outlet in a sustained manner.



05. PAAC appreciated the evaluation carried out by the Technical Committee and further discussed the status of smog tower set up in China and views of DPCC on operation of smog tower installed at Cannought Place (CP).
06. Regarding status of smog tower in China, Prof. Khare informed that as per the last update available with him, operation of smog tower installed at Xi'an City, China had been stopped and it is presently a tourist cum educational site. He was requested to obtain information on the present status of smog tower there and performance findings, if available.
07. Regarding performance of smog tower installed at CP, DPCC informed that significant impact of smog tower in terms of PM reduction was not observed beyond a distance 100m, besides having large cost implications. Further, matter was also discussed with DPCC board and the board has also expressed that these towers cannot significantly improve air quality and the same has been communicated to Delhi Government also. He was requested to share a copy of the communication sent to Delhi Government regarding operation of smog tower.
08. Representative, UPPCB informed that a similar ambient air cleaning system by BHEL is being operated in Noida on trial basis, and that the results so far are not very convincing. He was also requested to share the trial results with CPCB.
09. PAAC expressed that inputs received on China tower, DPCC tower and UPPCB tower may also be added by the Technical Committee in its report and further a section may be added outlining the changes in Particulate Matter concentration and Air Quality Index (AQI) before and during the smog tower operation for Anand Vihar location, and also for further utility options.
10. PAAC expressed that considering the findings of Technical Committee indicating limited effectiveness of smog tower and inputs received on status/performance of other towers indicating similar outcome, it may not be prudent to operate it further at this stage, as it is not techno-economic feasible and would not result in gainful utilization of public funds. However, the tower should be kept in operational condition. There may be some fixed costs, even if the tower is not operating, for meeting the bare minimum requirements, and a proposal to that end may be sought by CPCB. Regarding the spare batch of filters, these may be utilized in further research works. Further, since the Hon'ble Supreme Court had directed MoEFCC to monitor



the project, the revised draft report incorporating the points discussed today may be shared with MoEFCC for consideration, and based on the guidance received, further decision may be taken on fate of the smog tower.

11. PAAC also granted post-facto approval for 01 months' (April 2024) extension of O&M through TPL, NBCC and other agencies as per existing charges, considering that the matter of feasibility of smog tower was under deliberation of the Technical Committee during April.

Meeting ended with thanks to and from the Chair.



List of PAAC Members:

1. Sh. Tanmay Kumar, Additional Secretary, MoEF&CC and Chairman, CPCB
2. Sh. Bharat Kumar Sharma, Member Secretary, CPCB
3. Dr. V.K. Soni, Scientist F and Head, EMRC, IMD
4. Sh. Mrityunjay Jha, Director (OR), MoPNG
5. Sh. Suresh Kumar, Director, IFD, MoEF&CC
6. Sh. R.K. Agarwal, Director, CAQM
7. Sh. Vivek Roy, CEO1, UPPCB
8. Dr. Rashid Hasan, Senior Advisor, SIAM
9. Sh. Prasoon Tripathi, Under Secretary, MoEF&CC (CP Division)
10. Dr. Anwar Ali, SEE, DPCC
11. Sh. Nirmal Kashyap, SEE, HSPCB
12. Sh. Nilesh Tagad, Scientist B, MoRTH

List of Technical Committee Members:

1. Dr. Rakesh Kumar, Former OSD, CSIR
2. Dr. Mukesh Khare, Professor Emeritus, IIT Delhi
3. Dr. K.V. George, Chief Scientist and Head-Air Pollution Control Division, CSIR-NEERI

CPCB Officials:

1. Sh. Pankaj Agarwal, Scientist F & Head, AQM Division
2. Sh. Ankush Tewani, Scientist E, AQM Division
3. Sh. Gautam Kumar Sharma, Scientist C, AQM Division
4. Ms. Tarushi Singh, Consultant, AQM Division
5. Sh. Toshesh Bhargava, SRF, AQM Division
6. Sh. Amit, IT Division