

Minutes of 17th meeting of Project Appraisal & Approval Committee (PAAC-EPC)

17th meeting of PAAC-EPC headed by Chairman CPCB was held on January 28, 2020 at CPCB, Delhi. List of participants is placed at Annexure – I.

The meeting commenced with briefing to PAAC-EPC on the overall status of projects received for consideration under EPC funds, the total funds received and sanctioned for the projects. DH AQM briefed about the agenda placed before the committee and informed that two revised proposals are placed for consideration of PAAC-EPC while progress/ outcome of three awarded projects will be presented.

Revised proposals

1. Pilot Study for Assessment of Reducing Particulate Air Pollution in Urban Areas by Using Air Cleaning System (Mostly referred to as Smog Tower) by IIT Bombay

DH AQM briefed that project proposal was presented during 16th PAAC-EPC meeting convened on 10.10.2019 and it was recommended to forward the proposal to DST Expert Panel for examination and comments. DST Expert panel after examination recommended on 20.11.2019 the project to be taken up for one experimental tower in Delhi. Further, the Hon'ble Supreme Court vide order dated 13.01.2020 directed that smog tower be installed at Anand Vihar in Delhi. Accordingly, CPCB requested Prof. YS Mayya, IIT Bombay to submit final proposal for consideration under EPC funds.

PI/Co-PI presented the revised proposal on smog tower and informed that Tata Projects have been roped in for construction, installation and operation and maintenance of proposed cleaning system in liaison with University of Minnesota. The smog tower has a clean air delivery rate of 960 m³/s. It was also apprised that the total duration of project is 03 years and that minimum 10 months shall be required for commissioning the project post availability of land. It was also apprised by PI that the time required for construction of towers include time required for fabrication and supply of filters from University of Minnesota. The project cost submitted in the initial proposal was Rs 15.46 crores which was subsequently revised to Rs 19.06 crores and now the final project cost is Rs. 21.08 Crores. IIT Bombay also informed that memorandum of understanding shall be signed between CPCB and IIT Bombay and IIT Bombay in turn will sign MoU with Tata Projects and University of Minnesota in order to clearly identify roles and responsibilities of individual institutions/ organisations.

PI was specifically requested to respond to this issue of 3 months' timeline given by Hon'ble Supreme Court & was requested to inform the committee if it was possible in any way to set up an experimental tower with in timeline (3 months) prescribed by Supreme Court.

PI responded by saying that possibility of setting up of experimental tower with reduced timelines of 3 months has already been examined from all possible angles & that after due examination and deliberation, PI is of the considered view that aforesaid time period of 10 months would be minimum time period necessary for this purpose.

The Committee approved the project and recommended following to be included in the scope of work:

- Sharing of performance evaluation protocol including monitoring noise levels with CPCB and Expert Committee.
- Development of indigenous capacity in terms of filters and preparation of detailed operation and maintenance manual to ensure continued use of the technology after completion of collaboration with University of Minnesota.
- Explore cleaner energy options for upscaling the technology.

PI/ IIT Bombay to submit response to CPCB on compliance of timelines prescribed by the Hon'ble Supreme Court of India and scale of cleaning (medium, large scale, etc.)

PAAC-EPC authorized Member Secretary, CPCB to examine the financials and finalize the project cost for award of work.

2

2. Big Data, Machine Learning and Predictive Modelling Approaches towards Assessing Estimating and Predicting Pollution Levels in Delhi NCR

PAAC-EPC was briefed that project proposal was discussed during EPC meeting convened on 20.8.2019 and it was recommended that proof of concept be established through implementation on small scale and a three-member committee including PI was constituted to work out the revised proposal. The committee convened its meeting on 23.08.2019 and made the following observations: i) requirement of updated emission inventory for the project, ii) implementation not possible on a small scale, iii) lack of experience of PI in field of predictive modelling for air quality management and iv) forecast already available under the TERI project.

PI informed that the proposal has been revised and IIT Delhi has been associated in the project to look into the technical aspects related to modelling, data quality, requirements etc. and further guide on EI requirements.

Revised proposal on creating dashboards in two phases was presented by Kam Kanakdurga Education & Consultancy Services Pvt. Ltd. along with Prof. Harsha Kota, IIT Delhi. During the first phase it is proposed to create a customised dashboard using existing air quality information followed by a predictive dashboard for air quality forecasting using based on data aggregated from various sources such as Google, ISRO, etc.

As air quality forecast and spatial mapping of pollutants to predict pollutant levels at unmonitored regions is already available with CPCB through SAFAR and TERI-VITO project sanctioned under EPC. The Committee was of the opinion that current proposal shall add value to existing structure if machine learning can be used for providing decision support system and accordingly approved the proposal in principle with following recommendations:

- First phase of proposal may focus identifying requirements of regulator from dashboard and kind of database required for creating such dashboards to facilitate Decision Support System which can be used to initiate ground level actions for air quality management.
- Financials may be accordingly reworked as well as after re-examining software application cost and submitted for examination to CPCB IT Division and approval by Member Secretary, CPCB
- PI may submit revised proposal.

Ongoing projects:

1. Multiple antenna high density ion generator for pollution control in New Delhi & Monitoring and Evaluation of Ionization based Air Purifying Technology

The Committee was briefed that Department of Science and Technology (DST) appointed Expert Panel had reviewed the project and observed that clear evidence for significant reduction in Particulate Matter could not be ascertained and as per ion profile, zone of impact is unlikely to exceed about 4-5mtr. Hence its outdoor utility is not demonstrated. In view of the above PAAC EPC committee suggested that DST may review ionisation projects undertaken in Israel for air pollution mitigation in order to take a final decision on such technologies.

2. Pilot Project to Demonstrate Effectiveness of Air Pollution Mitigation by Pariyayantra Filtration

The Committee was briefed that DST appointed Expert Panel had reviewed the project and observed that technology was not deemed useful as CFD analysis indicated that for critical bus geometry, there won't be any air flowing through air filter. For geometry used in the study with top half front face inclined at 9 degrees' angle, only 50% of air will pass through fresh air filter. Hence, air filter proposed in this study has limited application.

PAAC EPC Committee suggested exploring optimal design of such technologies using CFD in order to understand efficacy of filters mounted on buses for air pollution control.

3. Control of Dust Emission using dust suppressant

PAAC-EPC was briefed that project was awarded to EPRI in association with NEERI and that the study has been completed and final report received by CPCB. As per the study 30% reduction was observed in PM reductions upto 6 hrs of application. Based on the findings, advisory has been issued to SPCBs to direct concerned agencies for ensuring use of dust suppressant at construction sites, roads etc. Project may be considered as closed.

4. Any other item

Criteria for consideration of proposals

Committee suggested that a subcommittee may be constituted at DST for preliminary screening of proposals on air pollution mitigation technology and only those proposals which pass muster should then be presented before the larger committee.

Meeting ended with vote of thanks to the Chair.



List of Participants:

1. Sh. S. P. Singh Parihar, Chairman, Central Pollution Control Board
2. Dr. Prashant Gargava, Member Secretary, Central Pollution Control Board
3. Mrs. Sanjeeta Chatterjee, Under Secretary, IFD, MoEF&CC
4. Dr. V. K. Soni, Head, EMRC and Sc. 'E', IMD/MoES
5. Dr. J. B. V. Reddy, Sc. 'E', DST
6. Sh. R. K. Jaiswal, Development officer, DHI/MoHIPE
7. Dr. Rashid Hasan, Advisor., SIAM, IHC
8. Sh. B. L. Chawla. SEE, DPCC
9. Sh. Randeep Sindhu. AEE, HSPCB
10. Sh. A. K. Kaushik, ASO, UPPCB, Noida

List of Proponents:

1. Sh. Mounik Pani, Director, Kam Kanakdurga Pvt. Ltd.
2. Ms. Kamana Jha, Managing Director, Kam Kanakdurga Pvt. Ltd.
3. Dr. Harsha Kota, Assistant Professor, IIT Delhi (via VC)
4. Dr. Y. S. Mayya, Professor, IIT Bombay (via VC)
5. Dr. Manoranjan Sahu, Assistant Professor, IIT Bombay (via VC)

CPCB Officials:

1. Sh. V. K. Shukla, Sc. 'E' and Head, AQM
2. Sh. B. Vinod Babu. Sc. 'E' and Head, IT Division
3. Sh. Ankush Tewani, Scientist 'D', AQM
4. Sh. Gautam Sharma, Scientist 'B', AQM
5. Ms. Parinita Baruha, JRF, AQM
6. Ms. Nidhi Shukla, JRF, AQM
7. Sh. Toshesh Bhargava, JRF, AQM
8. Sh. Hrishi Kaushik, SRF, IT Division