



Delhi  
19 June 2018

To  
Member Secretary  
The Central Pollution Control Board  
New Delhi-110 032  
Email : [pcissidivision7@gmail.com](mailto:pcissidivision7@gmail.com)

Subject : ERC's suggestions on draft environmental standards and guidelines<sup>1</sup> for hot mix plants dated 9 June 2018

Dear Sir

EIA Resource and Response Centre (ERC) is a national level voluntary programme, keeping a watch on EC and FC processes. ERC regularly engages with Ministry of Environment, Forest and Climate Change (MoEF&CC) and its expert committees providing comments and suggestions on important proposals under consideration for clearances as well as on policy and law issues. Here we are sending suggestions on the draft environmental standards and guidelines for hot mix plants dated 9 June 2018.

Hot mix plants are mainly used for mixing of stone aggregates with liquid asphalt/bitumen<sup>2</sup> for construction of roads. A hot mix plant usually comprises of aggregate bins, feeder, weighing system, drying drum, bitumen and fuel storage tanks, air pollution control devices, hot mix storage silo and loading facilities. These plants are installed near construction site and highways, and operate for such time till the construction work continues. 15 hot mix plants with different type and size were selected to carry out emission monitoring, out of which 9 were batch mix plants and remaining 6 were drum type hot mix plants.

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<http://cpcb.nic.in/openpdf.php?id=TmV3c0ZpbGVzLzY2XzE1MjgyNzE3NTRfbWVkaWFwaG90bzE4OTc2LnBkZg==>

<sup>2</sup> Liquid asphalt/Bitumen – a product of crude oil distillation

### PM standard for batch mix plant should be less than 100 mg/Nm<sup>3</sup>

PM standard for batch mix plant has been set at 150mg/Nm<sup>3</sup>. It is important to mention here that, the standard is quite relaxed in nature and there is no justification of reaching to this figure of 150 mg/Nm<sup>3</sup> because as per the emission inventorisation data listed by CPCB for 9 such plants, there are batch mix plants with PM emission level as lower as 99mg/Nm<sup>3</sup>, 102 mg/Nm<sup>3</sup>, 112 mg/Nm<sup>3</sup> and so on. Therefore, with installation of Air Pollution Control Devices, the plants can easily meet emission level lower than 150 mg/Nm<sup>3</sup>.

### No New Drum Type Mix Plant Should be Allowed

For the drum type hot mix plants, PM standard has been set at 300 mg/Nm<sup>3</sup>. Setting such high limit for drum type hot mix plants will create pollution hot spot across cities engaged in frequent construction activities. Even though the batch hot mix plants are less polluting, given the small and medium scale units of drum type hot mix plants, probability of using the later one will be more. Therefore, new drum type hot mix plants should not be allowed.

### Set lower SO<sub>2</sub> emission limit

SO<sub>2</sub> emission as can be seen from the emission inventorisation experiment of CPCB for both type of hot mix plants are again ranged between 116 - 257 mg/Nm<sup>3</sup>, where as the standard has been set at 250 mg/Nm<sup>3</sup>.

### Set lower NO<sub>x</sub> emission limit

The standard for NO<sub>x</sub> has been set at 200 mg/Nm<sup>3</sup>, where as the monitored value for NO<sub>x</sub> showed as lower as 79mg/Nm<sup>3</sup>, 83 mg/Nm<sup>3</sup>, 108 mg/Nm<sup>3</sup>, 118 mg/Nm<sup>3</sup>, 119 mg/Nm<sup>3</sup> and likewise.

### Set Standard for CO, CO<sub>2</sub> and VOC

CPCB has not come out with any standard for CO, CO<sub>2</sub> and VOC in spite of their acknowledgement of emission of these gaseous pollutants from burning of fuel for preparation of bitumen mix.

### Address Process Related Emissions

While formulating the emission standard, CPCB did not take into account the various process related sources of emission. According to a study done by United States Environment Protection Agency (US EPA) in December 2000, titled "Hot Mix

Asphalt Plants-Emission Assessment Reports”<sup>3</sup>, emission of PM, VOC, CO, SO<sub>2</sub>, NO<sub>x</sub>, and various Hazardous Air Pollutants (HAPs) are attributed to mobile sources like diesel exhaust, material handling and road dust, fuel oil fired dryer, hot screens and mixed, load out, asphalt storage and yard. However the CPCB Draft is only based on stack emission monitoring and no other process related emission. Neither had the Draft mention any standard for any Hazardous Air Pollutants (HAPs), which are likely to generate from the various processes of a hot mix plant.

### Hot mix plant should be outside 500 m of habitation

In the matter of M.C. Mehta v. Union of India [(1997) 1 Scale (SP) 31], Supreme Court on 10-10-1996 directed all the hot mix plants to be shifted to areas outside the vicinity of Delhi.

The order further stated the place where the hot mix plants shall be installed for a period of one year only, shall be at least 2 km away from the residential areas and populace, and shall not cause any pollution or environmental hazards. This simply justify the fact that considering the probability of pollution exposure to human habitation, such order has been passed.

NGT Southern bench in the matter of Kumbeswaran vs. TNPCB (OA 10/2016) ordered that no hot mix plant shall be set up within 500 m of an approved habitation/approved layout. The court further observed that the hot mix plants shall be situated outside the radius of 500 m and at any point it won't be less than 500 m.

## **Case Studies**

### West Bengal

If such siting guideline is followed, an area under KMDA where construction is an ongoing regular activity will bring ‘n’ number of pollution hotspots.

Hot mix plant is categorized as Orange Category<sup>4</sup> project, in the State of West Bengal (Sl. No. 37). According to a siting guideline by West Bengal Pollution Control Board, the siting for hot mix plants within KMC and HMC areas will be location specific and will be decided by the board<sup>5</sup>. The same guideline had proposed a total ban on establishing new industrial units and expansion of the existing industries within 10 Km from the Victoria Memorial Hall (as per the order of High Court) which may emit

<sup>3</sup> <https://www3.epa.gov/ttn/chief/ap42/ch11/related/ea-report.pdf>

<sup>4</sup> <http://www.wbpcb.gov.in/writereaddata/files/WBPCB%20Orange-30-6-2016%282%29.pdf>

<sup>5</sup> [http://www.wbpcb.gov.in/writereaddata/files/siting%20policy\\_2016\\_30-6-2016\\_3.pdf](http://www.wbpcb.gov.in/writereaddata/files/siting%20policy_2016_30-6-2016_3.pdf)

CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub> or other gaseous substance which form acids in contact with moisture in the atmosphere<sup>6</sup>.

If the new Draft standard is implemented, there will be no bar on a hot mix plant from coming up as close as 2-5 m from Victoria Memorial. This will eventually lead to the formation of acids in contact with moisture in the atmosphere, as the hot mix plants will be allowed to emit SO<sub>2</sub> and NO<sub>x</sub> to the tune of 250 mg/NM<sup>3</sup> and 200mg/NM<sup>3</sup> respectively. A study titled Impact of Anthropogenic Activities on the Environment: Case Study of Victoria Memorial, had already revealed the damages being caused to the marble stone of the Victoria Memorial Hall due to the effect of the SO<sub>2</sub> which being exposed to urban multi-pollutants, enters unto chemical reactions and lead to the formation of green patches, gypsum formation and copper joints<sup>7</sup>.

### Tamil Nadu

Tamil Nadu Pollution Control Board on 29-07-2016 has come out with guidelines for hot mix plants with regard to an NGT order in the matter of Kumbeswaran vs. TNPCB (OA 10/2016), wherein they have proposed siting criteria of not less than 500 m from approved habitation area and 5 km away (or buffer zone) from the wildlife sanctuary, reserve forest, national monuments.

### **Suggestions**

- PM standard for batch mix plant be less than 100 mg/Nm<sup>3</sup>
- Phase out old drum type hot mix plants and do not allow new ones
- SO<sub>2</sub> emission standard should be way less than 250 mg/Nm<sup>3</sup>
- NO<sub>x</sub> emission standard limit should be way below 200 mg/Nm<sup>3</sup>
- Set Standard for CO, CO<sub>2</sub> and VOC
- Process related emissions should be addressed
- Hot mix plant should be outside 500 m of habitation (NGT (Southern bench) in Kumbeswaran vs. TNPCB (OA 10/2016) Order)

The Draft Standards are actually giving leverage to highly polluting units and would discourage others (who are working at lower levels of emission than the proposed standards) from adopting devices like bag filters, or dual cyclones which reduce pollutants level from stack emissions.

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<sup>6</sup> [http://www.wbpcb.gov.in/writereaddata/files/siting%20policy\\_2016\\_30-6-2016\\_3.pdf](http://www.wbpcb.gov.in/writereaddata/files/siting%20policy_2016_30-6-2016_3.pdf)

<sup>7</sup>

[http://www.academia.edu/31781830/Impact\\_of\\_Anthropogenic\\_activities\\_on\\_the\\_environment\\_Case\\_Study\\_of\\_Victoria\\_Memorial](http://www.academia.edu/31781830/Impact_of_Anthropogenic_activities_on_the_environment_Case_Study_of_Victoria_Memorial)

We are sure, CPCB (MoEF&CC) would consider and acknowledge the issues raised and suggestions made, and let us know of the action taken.

Thanks, with regards

Pushp Jain, Kankana Das & Gitanjali Sreedhar  
EIA Resource and Response Centre (ERC)  
Legal Initiative for Forest & Environment (LIFE)  
N-71, LGF, G.K. I, New Delhi - 110 048. India  
Ph: 91-11-49537774, Web : [ercindia.org](http://ercindia.org);  
Email : [pushp@ercindia.org](mailto:pushp@ercindia.org); [pushp@lifeindia.net.in](mailto:pushp@lifeindia.net.in)