

## Comments on the Standard Conditions to be Stipulated in Environmental Clearances for Thermal Power Plants, Issued by MoEFCC on 19 Nov 2018

Comments by Manthan Adhyayan Kendra

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These comments pertain only to conditions dealing with impacts related to water

On 19<sup>th</sup> Nov 2018, the Ministry of Environment, Forests and Climate Change (MoEFCC) issued [Standard Conditions for Thermal Power Sector](#) to be stipulated as conditions while granting the environmental clearance (EC). This note looks at these Standard Conditions to understand whether they strengthen the environmental protection regime vis-à-vis the conditions being stipulated currently while granting ECs.

1. The issuance of standardised conditions for stipulation in environmental clearance (EC) to thermal power plants is a welcome step, to the extent as it creates a common framework for all thermal power plants.

However, significant discretion is placed in the hands of the Expert Appraisal Committee (EAC) as the notification allows EAC “after due diligence” to “modify, omit and stipulate additional conditions.” It would have been better if these conditions were given as the basic minimum, with powers to EAC to add others. However, it is important that at least, the power to modify or omit conditions has to be exercised by the EAC after “due diligence”.

2. The re-iteration of all statutory requirements in Section A is useful. It may be pointed out that the Item A (5) mentions the water consumption limits for thermal power plants to be stipulated at 2.5 CuM/MWh. This is lower than that notified in the [28 Jun 2018](#) amendment of the [7 Dec 2015](#) Notifications. This is a welcome step as the amendment of Jun 2018 is certainly an unnecessary dilution in the norms. That this norm for water consumption is reiterated in condition F(1) indicates that this is considered important and feasible.
3. The Condition A (5) also mentions that plants located on the coast and using sea water for cooling purposes are exempt from the requirements of zero effluent discharge. It is suggested that this will allow all kinds of waste water to be discharged to the sea. Therefore, this exemption may be granted only for the discharge of cooling tower blowdown or cooling water recirculation, and rest all waste effluent generated should be subject to zero waste water discharge norms.
4. The provision in B(1) that requires the project to obtain modification of EC conditions based on an “incremental impact assessment” if there is more than 1% increase in ash content is a very welcome condition as ash is one of the biggest problems from such power plants. However, no mechanism is specified for actualising this provision, specifying how it will be triggered etc. This needs to be included.
5. Point E (3) requires “Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute...”. This is very important. However, the term “large water boides” is limiting, and may well miss some of

the serious impacts, on nallahs, smaller streams, groundwater and other 'small' water bodies being affected. Indeed, if the aim is to assess and prevent impact on human health, as this section is titled, then the smaller water bodies would be more crucial as these are often more directly used by people. Therefore, impact also needs to be assessed on nallahs, smaller streams, wells, drinking water facilities, contamination and pollution of ground water, small water bodies etc.

6. Further, the same point E(3) also requires the study to "include impact due to heavy metals associated with emission from power plant." The use of the word "emission" is limiting because generally, in context of thermal power plants, emission is taken to mean gaseous releases. It would be important to clarify that the study should include impact due to heavy metals released by the plant from anywhere and in any form: gaseous emissions, liquid effluents like waste water discharges, and solid wastes like ash and sludge.
7. F(2) requires environmental flows to be maintained when withdrawals of water are from a river. This is an important condition. However, 15% of the average flow of 120 consecutive leanest days is not appropriate; it is an *ad hoc* number, not based on any scientific assessment. The e-flow should be recommended based on a proper e-flow assessment process. Second, e-flow is not a single flow, but rather a flow regime that mimics the natural variation. Thus, the 15% recommended is a minimum flow rather than an environmental flow. The construction of the sentence is also confusing – for e.g. – it is not clear which two numbers are being referred to by the phrase "whichever is higher".
8. Condition F(5) calls for monitoring of ground water around ash ponds for heavy metals. While this is an important condition, in several instances, the Standard Conditions provide a weaker monitoring regime than what current EC conditions<sup>1</sup> provide, as far as heavy metals are concerned. The table at the end of this note sums up conditions related to heavy metals in these Standard Conditions as against conditions currently being stipulated.
9. Currently, EC conditions provide for monitoring of radioactivity in coal, fly ash and bottom ash. However, the Standard Conditions completely omit any monitoring of radioactivity, which current EC conditions provide. (See table at the end of this note)
10. The condition F(6) calls for treating and re-circulating and re-using effluents from different processes like DM plant, boiler blow down, ash pond etc. While this is an important provision, it needs to be further qualified in terms of what re-use is permitted for the treated effluents. This is in context that every thermal power plant installed after 1 Jan 2017 needs to comply with Zero Waste Water discharge norms. While there don't seem to be any guidelines by CPCB/MoEFCC for exactly what constitutes ZLD/ZWWD, draft guidelines circulated in 2015<sup>2</sup> stated "It is important to mention that in the name of ZLD, no forceful injection into ground water table is to be tried nor utilizing effluents / permeate for irrigation / or horticulture. ZLD would strictly mean recycling treated effluent back for re-use in industrial / or domestic purpose but, exclude use / disposed in ambient environment."

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<sup>1</sup> "Current EC conditions" refer to conditions that are found in several, though not necessarily every EC.

<sup>2</sup> Guidelines On Techno – Economic Feasibility Of Implementation Of Zero Liquid Discharge (Zld) For Water Polluting Industries, CPCB, January 2015 (Draft)

In this context, the EC conditions need to clarify what re-use will be permitted and what reuse is not permitted.

11. Condition F(8) mentions that for a power plant within 50 km of a sewage treatment plant shall use specified quantity of treated sewage in place of freshwater. This is a welcome step, but the EAC needs to call for an impact assessment of the diversion of sewage also. Because, it should be noted that sewage is often being used for some or the other purpose, and treated sewage discharged back is also counted as regeneration of water and therefore as “available” for downstream uses. For e.g., [a study by Manthan](#) found that in Solapur, Maharashtra, where it is proposed to divert swage to the NTPC plant, several hundred families are already using that sewage to irrigate their fields and grow fodder, supporting a thriving dairy industry with significant employment.
12. Condition I(4) requires disposal of “unutilised” ash by high concentration slurry disposal (only). But the very next condition I(5) provides for allowing disposal via lean or medium concentration slurry too. This is a contradiction that needs to be resolved.
13. One important point missing in these conditions is that currently, several ECs stipulate a condition on the power plants that “No ash shall be disposed off in low lying area.” Conditions in several ECs also state that “Fly ash shall not be used for agricultural purpose. The disposal of fly ash in the mine void shall not be undertaken without prior geo-hydrological study.” These are in recognition of the risks of land and water contamination due to ash, especially ash used in unbound manner. However, these important conditions are missing from the Standard Conditions.
14. Several existing ECs have conditions requiring that the natural drainage of the area does not get affected by the thermal power plant. A case in point is the EC for Trombay TPS. A condition therein states –  
  
“(xvi) No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.”  
  
The proposed Standardised Conditions have no conditions to ensure existing drainage is not disturbed. Such a condition is particularly important with respect to ash ponds which disrupt local drainage due to construction of dykes/ walls.

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**TABLE**

Parameter Monitored	Applicable to	As per conditions in Current ECs <sup>3</sup>	As per new Standardised Conditions for ECs
Radio-activity	Coal	Yes	No
	Fly ash	Yes	No
	Bottom ash	Yes	No
Heavy metals	Coal	Yes	No
	Fly Ash	Yes	
	Bottom ash	Yes	Yes
	Effluents emanating from ash ponds	Yes	Yes
	Groundwater around ash ponds	Yes	Yes
	Groundwater <u>in and around</u> ash pond area		Yes
	Ground water around the (plant) area	Yes	
	Surface water in the area		Yes, weak
	Other Waste water discharged		

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<sup>3</sup> Conditions in current ECs refer to conditions being included in many, but not necessarily all, ECs currently.