

Wide-spread Non-Compliance as Thermal Power Plants don't Meet Water Use Norms



A Note by Manthan Adhyayan Kendra
Based on Information Obtained Under Right to Information Act
July 2019

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It is almost a month since the normal onset date of the monsoon, and headlines have been dominated by situation of drought and water scarcity over large areas of the country. Under the circumstances, it is a matter of serious concern that many thermal power plants – heavy water guzzlers and the largest industrial user of water – are failing to comply with the legally binding limits on how much water they are allowed to use. This situation has been revealed by information obtained under the Right to Information Act (RTI Act) by Manthan Adhyayan Kendra.

These power plants have violated the limits set by new regulations notified in Dec 2015 by the Ministry of Environment, Forests and Climate Change (MoEFCC). Such gross violation of water use limits shows negligence on part of both, the power plants, and the regulating body, that is the MoEFCC and reveals a lack of seriousness to implement these norms.

Only 51% Plant Meet Regulations

We could obtain compliance status (self-reported) for thermal power plants or units from 12 states. Just about 51% of the plants were found to be in compliance with the regulations.

Out of the total 156 plants/ units for which we could obtain the status, 66 claimed that they complied with the water consumption limits, while 30 admitted that they were non-compliant. For another 46 plants, either data was not available, or replies were ambiguous or the plants were closed. As other 14 plants were using sea water, they are exempted from the regulations.

What is equally important is that this compliance status is self-reported status by the various power plants. These figures or status have not been verified or cross checked either by the state pollution control boards (SPCBs) or any other independent agencies.

These 156 plants included a number of smaller, captive power plants. If we consider only the major power plants (those being monitored by the Central Electricity Authority in its Daily Generation list), then the number of plants for which we could get information was only 75, and in this 34 plants were compliant with the norms and 22 were not.

Background and Significance of the Norms

Coal based thermal power plants consume vast quantities of water, mainly for cooling needs and for disposal of ash. They are the largest industrial water users, accounting for close to 70% of all water used for industrial purposes in India. Given this, thermal power plants can cause significant water stress in the local area, especially if they are present in clusters.

It is due to the seriousness of the issue that the MoEFCC, in Dec 2015, brought out a notification amending the Environment Protection Rules 1986, setting limits on how much water a thermal power plant can use per unit of electricity generated. Before this, there was no limit and thermal power plants consumed needlessly excessive quantities of water in a completely unregulated

manner. The Dec 2015 rules set the following limits for how much water thermal power plants can use. (Table 1)

Table 1: Summary of Water Consumption Related Rules from the Dec 2015 Notification

Year of Installation of Power Plant	Water Use Limit	Remarks
Before 1 Jan 2017	3.5 Cubic Metres/ MWh	Equivalent to 3.5 litres of water per unit (KWh) of electricity generated.
After 1 Jan 2017	3.0 Cubic Metres/ MWh	Equivalent to 3.0 lits per unit of electricity. This limit was earlier set at 2.5 Cubic Metre/MWh, but was relaxed to 3.0 due to pressure from power projects vide an amendment dated 28 June 2018.

The power plants were to meet these norms within 2 years of the notification, that is, by 7 Dec 2017. Coastal power plants using sea water were also exempted from the limits vide amendment dated 28 June 2018.

A 2012 report by the Central Electricity Authority (CEA) noted that coal based thermal power plants (TPPs) were consuming 5-7 Cubic Meters/ MWh of water. The new norms require them to consume a maximum of 3.5 (or 3 in case of plants after 2017) cubic meters/MWh. To understand the implications, note that every reduction of 0.5 Cubic meters/MWh in the specific consumption of a 1000 MW plant will save enough water in a year to irrigate 700 ha of land; or provide drinking and domestic use water to 68,000 people for an entire year. Considering that many TPPs are in water stressed areas, the cutting down of water consumption by TPPs has huge benefits for the local areas. Hence, it is very important to implement these norms and ensure that the TPPs keep their specific water consumption within the limits set by these norms.

State-wise Details of Compliance

Unfortunately, as noted above, information obtained by us shows significant non-compliance to these water consumption norms. An overall picture of all states taken together is given in **Figure 1**.

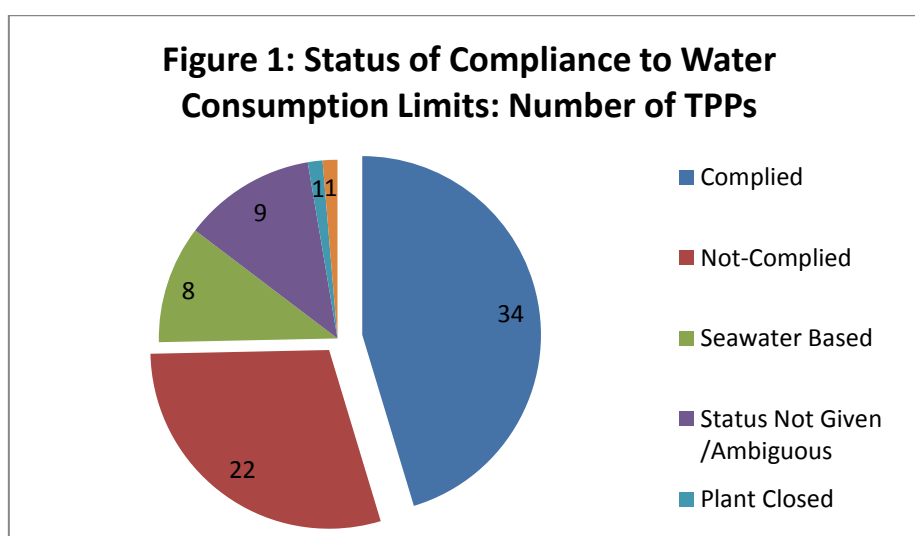


Table 2 below gives the state-wise details of status of compliance with water consumption norms for power plants listed in the DGR.

Table 2: State-wise Status of Compliance to Water Consumption Norm for Thermal Power Plants Listed in the DGR

S.No	State	No. Of TPPs in the state as per DGR (27.02.2019)	No of TPPs in DGR for whom info received	Status of Compliance as given in RTI Responses (Number of Plants in Each Status Category)					
				Complied	Not-Complied	Seawater Based	Status Not Given /Ambiguous	Plant Closed	Data Not Available
1	Tamil Nadu	15	11	4	2	4	0	1	0
2	Andhra Pradesh	9	5	0	2	3	0	0	0
3	Odisha	11	7	6	0	0	0	0	1
4	Telangana	8	9	6	3	0	0	0	0
5	Bihar	7	4	0	4	0	0	0	0
6	Jharkhand	8	5	5	0	0	0	0	0
7	Assam	1	1	0	0	0	1	0	0
8	Uttar Pradesh	19	10	4	6	0	0	0	0
9	Chhattisgarh	30	15	8	3	0	4	0	0
10	Gujarat	13	2	0	2	0	0	0	0
11	Madhya Pradesh	14	1	1	0	0	0	0	0
12	Maharashtra	24	5	0	0	1	4	0	0
	TOTAL	159	75	34	22	8	9	1	1

Issues of Concern with Compliance Information

Self-Reporting, No Independent Verification

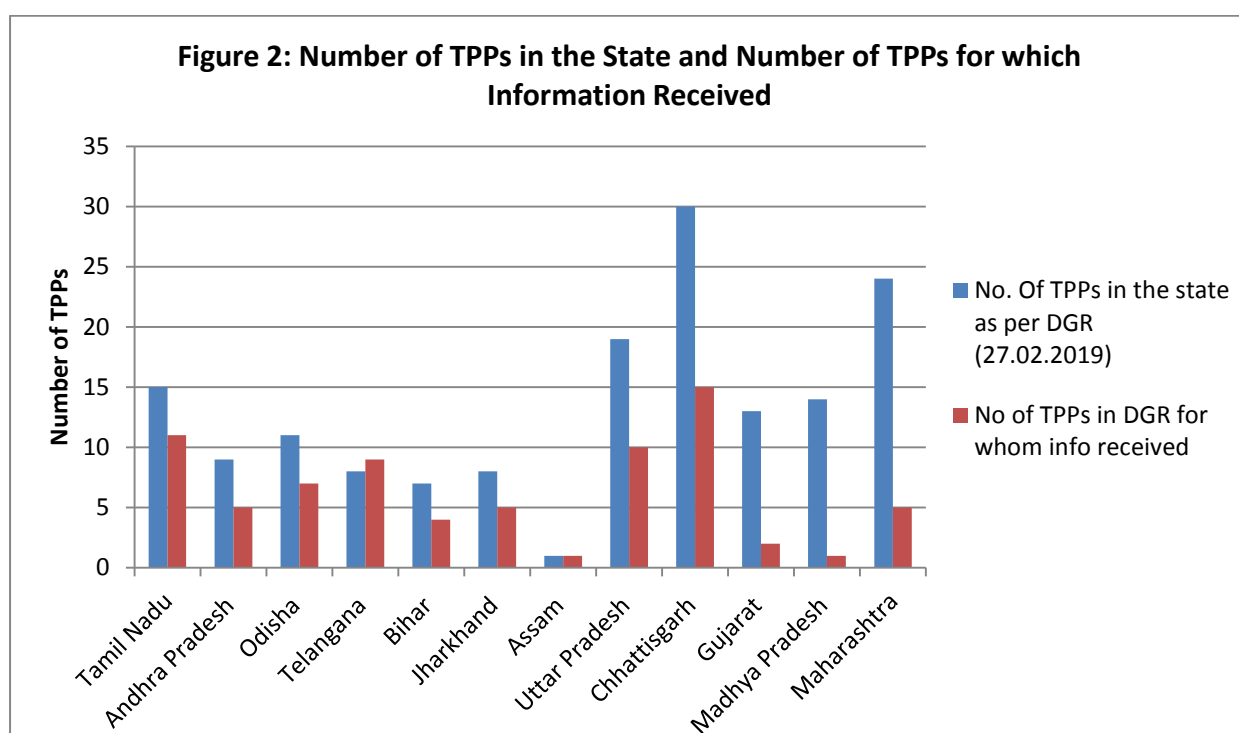
As pointed out above, the status of compliance with the regulations of water consumption is entirely self-reported by the respective power plants. The respective SPCBs just provided us with figures as submitted by the power plants, with no verification or vetting from their side or by any other credible, independent third party.

Some States Gave No Information, Most did not Give for All Power Plants

Out of RTI applications filed with 15 states, we did not get information for even one TPP from three states – Bengal, Karnataka and Rajasthan. This, in spite of several formal appeals and discussions on phone with respective information officers. Most states did not give information about all the TPPs

in the states, leading us to wonder whether the states are actually monitoring compliance by all the plants or just passively collecting information from whichever plant submits it, and ignoring others.

The CEA monitors the electricity generation from all the major power plants in the country on a daily basis and puts out the Daily Generation Report (DGR). We used the DGR as a source of identifying operational power plant in each state. Maharashtra gave us information for only 5 TPPs out of 24 listed by the DGR in the state. Madhya Pradesh gave us information for 1 TPP, as against 14 plants in the state. Tamil Nadu and Odisha were the ones who provided most information. T.N. provided information for 11 out of 15 plants in the DGR for the state, and provided information for another 26 plants in the state that are not listed in the DGR. (These are normally smaller, captive plants, which the DGR does not list). Odisha gave us information for 7 out of 11 in the DGR, but also gave information for 32 other plants which are not in the DGR. Most other states were in-between. (See Figure 2).



No Uniform Format for Information Given

Moreover, there was no uniform format in which the information was provided to us. Some SPCBs provided the actual numbers (how many cubic meters of water was used per MWh of electricity produced), whereas many just replied saying “Complied”. Where numbers were provided, some provided only one number, other provide monthly averages for several months, still others provided daily averages for the last quarter. This is in spite of the fact that there is a prescribed standard format for reporting compliance with the regulations, and some states did provide information in this format (See **Annexure 1** for sample of the prescribed format) . It is astonishing that that all SPCBs are not collecting and maintaining the information on compliance with water consumption norms in a uniform prescribed standard. It may be pointed out that the notification itself does not give any indication as to for which period and how the specific consumption is to be measured. Thus the only fair interpretation is that on no occasion should the limit be breached.

Information Given is Old in Many Cases

In many cases, the information provided to us was several months old, or even from earlier years. For example, information given by Odisha for most plants was for the year 2017-18, though our applications were made in Dec 2018 / early 2019.

This raises the question as to whether the collection of compliance information is being done on a regular basis to ensure that latest status is available.

Inadequate, Evasive or Impossible to Understand Information

Some states gave us information only for the total water used by the power plants, whereas the norms are for water used per unit of electricity generated. So this information was inadequate in understanding if the regulations were being complied with.

Some of the regional offices of the state pollution control board in a particular state replied to us saying they are monitoring the thermal power plants in their jurisdiction and that these plants have been submitting the details of water consumption, but for compliance status, they just wrote “Thermal power plant has to comply with notification”!

In another state, most regional offices of the pollution control board said that they are monitoring the thermal power plants for water consumption norms, but about compliance status, said “The information asked is not available in form of record. If information for specific industry is asked, then it can be provided as per the provisions of RTI – Act 2005.” Yet, one regional office in the same state did give us the required information.

Need to Put out Information *Suo Moto* as Required by RTI Act

Given the significance of compliance with water consumption norms, and given all the difficulties, outlined above, in obtaining this information, we urge that it is important for the SPCBs to put all the relevant data in the public domain *suo moto*. This is also required by the Right to Information Act 2005, whose Art 4 (2) clearly requires “every public authority to ...provide as much information *suo moto* to the public ...so that the public have minimum resort to the use of this Act to obtain information.” The case of data related to water consumption by thermal power plants is a most appropriate case for such *suo moto* disclosures.

We have started writing to some of the state information commissions requesting them to ensure this, but so far there has been no response.

No Timelines or Reporting to Supreme Court

It may also be mentioned that the Supreme Court is hearing the matter of implementation of the Dec 2015 norms as a part of the Writ Petition (Civil) 13029 of 1985. In this, the MoEFCC/CEA has submitted to the Court detailed time lines, plant by plant for implementation of the SO₂ and other air pollution emission related norms. However, no mention is made by MoEFCC/CEA of the implementation and any time lines for the water related norms of the same notification. The original matter pertains to air pollution in NCR (National Capital Region) and the MoEFCC / CEA may be using that as an excuse not to give information about the water norms. But we feel that the status of implementation and the timelines for water norms also must be submitted to the Supreme Court

because, one, the water norms are also part of the same notification, and more important, meeting air norms impacts the water use and waste water discharge. For example, to control the SO₂ emissions, all plants are to install Flue Gas Desulphurisation (FDG) units, which consume significant amounts of water.

Lack of Seriousness in PCBs to Ensure Implementation of Norms

While the non-compliance and the other above-mentioned issues are a cause for concern, equally worrying is the fact that neither the MoEFCC, nor the state pollution control boards (SPCBs) which are responsible for monitoring the compliance with regulations, seem to be serious about enforcing the norms.

The compliance monitoring figures are not in public domain, and it needed extensive, time-consuming RTI applications and appeals to SPCBs in 15 states to get the information. Even then, we could get only part of the information as many replies were incomplete, inadequate, evasive or impossible to understand. Having the latest status and information about compliance in the public domain is critical to ensure accountability of both, the thermal power plants as well as the PCBs. Information on whether plants are meeting the water consumption norms or not will be of great help to local communities who are directly affected if plants consume more water than allowed.

The Dec 2015 notification gave two years' time for the power plants to be fully compliant, and yet, there are many who are not meeting the standards more than a year after the expiry of this period. The only action that the SPCBs seem to have taken is to write to the concerned power plants to meet norms. For example, one state pollution control board said that for non-compliant plant, "The unit has been addressed to maintain water consumption below 3.5 m³/MWH." Other state replies also showed only similar "actions" being taken.

Last but not the least, it appears that the CPCB / MoEFCC has tried to allow the thermal power plants an open ended extension of time period to meet the standards in a manner that is legally questionable. Just as the deadline to meet the norms ended on 7 Dec 2017, the CPCB wrote, on 11 Dec 2017, to all power plants extending up to 2022 the deadline for meeting the air pollution / emission part of the norms in the Dec 2015 Notification. The legality of these directions is being questioned by lawyers, as they claim that the powers delegated to CPCB are to be used to ensure that regulations are met, and cannot be used to extend the deadlines for meeting norms.

In the case of water norms part of the Dec 2015 Notification, these letters of CPCB appear to be even more arbitrary and untenable, as they don't even set any deadline. All they say is that "the time line for compliance of water consumption limit shall also be finalised in consultation of plants." This is not only a patent conflict of interest situation but provides an ideal opportunity for rent seeking. Not only that, the time limit for meeting the norms is open-ended, but also there is no time period given by which the deadline has to be set. This effectively makes it an open ended exemption to the plants from meeting the water norms, and thus not only bypasses the provision of deadline in the original notification, and but effectively tries to render the original notification null and void. If the deadline to meet a regulation is not defined, then effectively the regulation is meaningless. Given this, the CPCB letter's legality is questionable on these grounds also.

Recommendations

Given the massive consumption of water by thermal power plants, and location of many thermal power plants in water stressed areas, it is very important that the limits on how much water a power plant can consume be strictly enforced and adhered to. In other words, the Dec 2015 regulations must be implemented fully. Moreover, the status of implementation, with all the relevant data, must be available in the public domain so that local communities and others can help in the accountability of thermal power plants and regulatory agencies like SPCBs. This is the core of transparent and participatory democratic functioning. More specifically:

1. All SPCBs and the CPCB must ensure that all TPPs meet the water consumption norms given in the Dec 2015 Notification with immediate effect, as the deadline has long passed.
2. Without prejudice to (1) above, where power plants have used the letter of CPCB of 11 Dec 2017 to avoid the deadline given in the original Notification, the respective SPCBs must immediately set new deadlines and these deadlines should be made public. In any case, we suggest tht these deadlines should not be more than three months from now, that is, not beyond Sept 2019. Even with this, power plants would have got almost 2 years additional to meet the norms.
3. All SPCBs should collect the data related to compliance with these water consumption norms in a regular manner.
4. Such data should be in the uniform, prescribed format for all TPPs no matter in which state.
5. All this data along with the compliance status should be put out *suo moto* in public domain. This is also required by the Art 4 (2) of the Right to Information Act.
6. Compliance can be self-reported, but verification by independent credible agencies and the SPCBs is a must.
7. SPCBs should initiate action against those not meeting regulations, and put that in public domain so that local communities can follow up.

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1 July 2019

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Cover Photos:

Top: Water intake structure for power plants under construction at Saradih on Mahanadi river in Chhatisgad.

Middle: Water intake structure for Vedanta power plant under construction on the Hirakud reservoir in Odisha.

Bottom: Pipes for water transfer near Saradih.

All photos by Shripad Dharmadhikary, Manthan. All file photos.

ANNEXURE 1: Sample of the prescribed format for reporting compliance with Dec 2015 Norms and how data is being reported using this format by some TPPs/SPCBs

Format for quarterly reporting of water consumption data and compliance with respect to the limit notified vide notification dated 07.12.2015 for coal/lignite based thermal power plants

Name of the Power Plant: **Rihand Supper thermal power plants**
 State: **Uttar Pradesh**
 Capacity (Total in MW): **3000**
 Unit wise Capacity: **50000**
 Applicable SWC Standard: **3.5m³/MWh**
 Zero Waste Water Discharge Condition mandatory or not: **YES**

Date	Power Generation (Mw)	Water Consumption (Daily m ³)	Sp. Water Consumption (Daily Avg. in Ltr/Kwh)
October 2018			
01-Oct-18	54.434	162971	
02-Oct-18	54.21	147867	2.90
03-Oct-18	56.07	166340	2.72
04-Oct-18	57.5	152835	3.02
05-Oct-18	54.15	159523	2.91
06-Oct-18	54.196	159910	2.95
07-Oct-18	52.997	165791	2.89
08-Oct-18	54.41	162763	3.07
09-Oct-18	63.66	152224	2.99
10-Oct-18	47.924	158872	2.84
11-Oct-18	47.85	149746	3.25
12-Oct-18	55.139	156896	3.14
13-Oct-18	57.952	167912	2.95
14-Oct-18	58.794	149805	2.72
15-Oct-18	58.644	161256	2.95
16-Oct-18	59.792	162767	2.75
17-Oct-18	58.491	153584	3.22
18-Oct-18	49.703	163033	2.72
19-Oct-18	48.377	168043	3.28
20-Oct-18	57.866	171139	3.27
21-Oct-18	60.026	183836	2.96
22-Oct-18	60.126	158532	2.73
23-Oct-18	60.138	159622	2.84
24-Oct-18	59.043	154970	2.65
25-Oct-18	59.81	150307	2.59
26-Oct-18	59.568	144274	2.51
27-Oct-18	60.179	154488	2.41
28-Oct-18	59.075	153534	2.57
29-Oct-18	59.853	163303	2.80
30-Oct-18	62.441	149748	2.73
31-Oct-18	60.51	168197	2.46
TOTAL	1744.995	4886747	2.80
			Avg. Sp. Water Consumption for Oct'18: 2.80 Ltr./Kwh

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[Continued next page]

QUARTERLY AVERAGE SPECIFIC WATER CONSUMPTION

Month / Year	Generation (MLs)	Water Consumption (m ³)	Sp. Water Cons. (Ltr/Kwh) Monthly Avg.
Oct'18	1744.995	4886747	2.80
Nov'18	1937.869	4952431	2.56
Dec'18	1865.116	4829458	2.59
Qtrly. Avg. Sp. Water Consumption for OCT'18 - DEC'18: 2.64 Ltr/Kwh			

Remark 1: Zero Waste Water Discharge Status: Complied

Remark 2: If SWSL limit not complied, explain if any: Complied

Ramdarsh
 11/2019
 (Name & Designation of authorised official)
 With Seal

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