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MAKING THE WATER-GUZZLING THERMAL PLANTS ACCOUNTABLE

Relevant for: Geography | Topic: Distribution of Key Natural Resources - Energy Resources of the World

The second 600 MW unit of the Singareni Thermal Power Plant at Jaipur in Adilabad district. | Photo Credit: BY ARRANGEMENT;BY ARRANGEMENT - BY SPECIAL ARRANGEMENT

The advancing monsoon has brought relief to many parts of India, but its progress has been slower than average and the country is still in the midst of a rainfall deficit, with millions facing an acute water shortage. Water is essential for human survival, and for agriculture and industry. It is important that India — which has only 4% of the world's renewable water resources but about 18% of the world's population — consumes water more sensibly.

In India's pursuit of 100% electrification goal, the country's installed power capacity will need to be doubled. Even with the growth of renewable energy (RE), coal has been projected to be the backbone of the electricity sector till 2030 and beyond. Managing the electricity needs of a country that's already dealing with water scarcity will be a challenge.

Thermal power plants (TPPs) consume significant amounts of water during the electricity generation process. Most of India's TPPs are located in water-stressed areas, and water shortages have led to electricity-generation disruptions and significant revenue losses to the economy.

In December 2015, the Ministry of Environment, Forest and Climate Change issued a notification setting limits for water consumption by TPPs. However, the amended Environment Protection (EP) Rules codified in June 2018 ended up permitting TPPs to use more water than what was initially specified. There are certain mechanisms that need to be strengthened to make these regulations more effective.

The Central Electricity Authority (CEA) recently released the format for TPPs to report on their annual water consumption. The power plants were asked to specify both metered and un-metered usage, report on the source (like river, canal or sea), and state the percentage of deviation from the water norms, along with the reasons and the corrective measures undertaken.

These guidelines can be strengthened by including other relevant inputs. First, TPPs should disclose the amount of water consumed by them in previous years, so that a baseline for water consumption per TPP can be established, and subsequent reductions in water consumption can be quantified. Second, these reporting requirements — currently in the form of an Excel sheet on the CEA website — must be added to the EP Rules, to accord the disclosure process greater transparency and enforceability. Third, TPPs should also be required to submit verifiable evidence (for example, water bills) to support and substantiate the disclosures. Without these, the self-reporting guidelines will remain weak.

Finally, the data supplied by TPPs should be placed in the public domain, so that the parameters disclosed can be studied in the context of region-specific water shortages, outages in the plants, and future research and analysis in this field.

Section 15 of the EP Act provides for a blanket penalty for contravention of any provisions of the Environment Protection Act or EP Rules: up to five years of imprisonment and/or up to 1 lakh

fine along with additional daily fines for continuing offences. However, the Act does not stipulate specific penalties for specific offences. Perhaps this is an area for review by the government, so that we have a more nuanced framework for enforcement and penalties.

Further, the relevant officials in charge of enforcement, across the Ministry and the CEA, should be identified, and their roles clearly defined. The implementation of these norms should include milestones and time-based targets, and periodic monitoring of the progress of TPPs in making improvements.

In addition to reducing the stress caused by TPPs, shifting to a more aggressive RE pathway will help India achieve its global climate targets. However, this will need further work — particularly to regulate water consumption by specific RE technologies. The Ministry of New and Renewable Energy has taken a first step by issuing a notice to State governments on reducing water use for cleaning solar panels and to explore alternative mechanisms to ensure that solar panels remain efficient.

India will need to balance the needs of its growing economy with its heightening water stress. Stringent implementation of standards for judicious water use by TPPs, combined with the promotion of RE and energy efficiency, will offer pathways for achieving these goals.

The writers work with the energy programme at the World Resources Institute, India

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