

PRESS RELEASE

Tata's thermal power plant at Trombay wins award in India's first-ever environmental rating of coal-based power plants

Sector performance way below global benchmarks

- Centre for Science and Environment's (CSE) Green Rating Project releases its analysis and rating of India's coal-based thermal power plants
- 47 plants, accounting for 50 per cent of India's thermal power output, covered. Six of the 47 plants are from Maharashtra.
- Sector immensely polluting, scores poorly on all parameters getting a mere 23 per cent score compared to 80 per cent that a plant following all best practices can get; 40 per cent of the plants studied received less than 20 per cent score
- Inefficient in use of resources, technologically backward and ill-equipped, mostly non-compliant with air, water and solid waste norms – says the rating report card. Immense scope for improvement
- Plants operating at 60-70 per cent capacity only. If improved, sector can meet additional power requirement without building new plants
- West Bengal-based plant comes out at the top. NTPC's Badarpur plant one of the most polluting in the country
- Ratings and the study report – *Heat on Power* – released by 'father' of the Green Revolution M S Swaminathan, in the presence of Ashok Lavasa, secretary, Union ministry of environment, forests and climate change and Arvind Subramanian, chief economic advisor, Government of India

New Delhi/Mumbai, February 21, 2015: Tata-Trombay's power plant at Trombay has received an award for being the third in ranking in a first-ever study of the coal-based power plants across the country. Six of the 47 plants (total capacity 54 GigaWatt – almost half of the total thermal power output in the country) were from Maharashtra. The two-year long research study done under the Green Rating Project (GRP) by Centre for Science and Environment (CSE) found the Indian thermal power sector to be among the most inefficient in the world and contributing greatly to carbon emissions. The study is the first of its kind rating of this industrial sector for its environmental performance and compliance.

However, only three of the six plants participated in the rating. The state-owned plants (MAHAGENCO-Nasik and Chandrapur) did not participate. They were one of the most polluting plants in the sample and we observed extremely high levels of emissions billowing from chimneys of these plants. A CSE researcher who visited Nasik says, "The area around the Nasik thermal power plant is the only part of the district, known for its grape farming, where the farmers are unable to grow the crop due to the pollution."

However, better performers were also from Maharashtra. The Tata Power Company Ltd., Trombay, JSW Energy Ltd., Ratnagiri, Reliance Infrastructure Ltd., Dahanu were ranked 3rd, 4th and 5th respectively in the rating.

Nationally, three top power plants were awarded for their overall environmental performance, while two others received awards for their efficient use of resources such as energy and water. The awards were handed over by M S Swaminathan, the 'father' of India's Green Revolution and emeritus chairperson of the Chennai-based M S Swaminathan Research Foundation. The study report was released jointly by Dr Swaminathan; Ashok Lavasa, secretary, Union ministry of environment, forests and climate change; and Arvind Subramanian, chief economic advisor, Government of India.

In a statement, CSE director general Sunita Narain said, “The objective of the study was to give a clear picture of the environmental performance of the sector. Our finding is that in India, where the demand for power is increasing, power plants are getting away without adhering to standards. Given the rapid increase in coal-based power projected by the government, stress on precious resources like water and coal will increase and air and water pollution will worsen, unless corrective measures are taken by the industry and policy-makers.”

Speaking about the rating programme, Chandra Bhushan, CSE’s deputy director general, said: “The Green Rating Project is one of the very few public-disclosure projects in the world in which a non-governmental, non-industry organisation rates the environmental performance of industries and makes the results public. We follow a robust and transparent process and the outcomes of our ratings have been used by companies as well as policymakers to improve policies and practices.”

The project, started in 1997, has so far rated five major industrial sectors of India – pulp and paper, iron and steel, chlor-alkali, cement and automobiles. The coal-based power sector is the sixth it has rated.

What did the rating study find?

“Our analysis essentially says that this sector has a lot of room for improvement,” points out Bhushan. The key findings of the rating exercise were:

- The sector’s overall score was a low 23 per cent (a plant adopting all the best practices would have scored 80 per cent). The average efficiency of the plants in the study was 32.8 per cent, one of the lowest among major coal-based power producing countries. Average CO₂ emission was 1.08 kg/kWh, 14 per cent higher than China’s.
- The top performers were West Bengal-based CESC-Budge Budge, followed by JSEWL-Toranagallu (Karnataka), Tata-Trombay (Maharashtra) and JSW-Ratnagiri (Maharashtra). In addition, Tata-Mundra (Gujarat) received an award for having the highest energy efficiency, while Gujarat Industries Power Company Ltd (GIPCL), Surat, won an award for lowest water use.
- A disappointing 40 per cent of the plants in the study received less than a 20 per cent score, pointing to the dismal state of the sector.
- India’s thermal power plants are estimated to withdraw around 22 billion cubic metre of water, which is over half of India’s domestic water need. Even the plants with cooling towers use an average of 4 m³/MWh; the average water consumption in Chinese plants is 2.5 m³/MWh.
- Fifty-five per cent of the units were violating air pollution standards which are already extremely lax – particulate matter (PM) norms are at 150-350 mg/Nm³ (milligram per normal metre cube) compared to Chinese norms of 30 mg/Nm³.
- Fly ash disposal remains a major problem. Presently, only about 50-60 per cent of the 170 million odd tonne of fly ash generated by the sector is “utilised”; the remaining is dumped into poorly designed and maintained ash ponds. Currently, about a billion tonne of these toxic ashes lie dumped in these ponds, polluting land, air and water. By 2021-22, the sector will produce 300 million tonne of fly ash every year.
- Ash slurry, which has toxic heavy metals, was found in river and reservoirs of 20 plants. Nearly 40 per cent of the plants did not meet the basic total suspended solid (TSS) norms for effluents discharged by them.
- Thirty-six of the 47 plants were unable to meet the MoEF’s mandated target of utilising 90 per cent of the solid waste (ash) generated – average use was only 54 per cent.
- **The performance of the NTPC Ltd., the largest coal-power producing company in India, was found to be below par. NTPC Ltd. did not disclose its data, and hence was rated based on a primary survey and publicly available information. The six plants of NTPC Ltd. that were rated received scores of 16-28 per cent. The worst of the lot was Delhi’s Badarpur plant.**

The rating study methodology

Industries assessed under the GRP project are awarded leaves for their performance – the highest being five leaves and the lowest being none. In the current rating, only four plants scored between 40 and 60 per cent and received the Three Leaves award.

The project selected a diverse group of plants from all regions, of various vintages, sizes and technologies and owned by all major companies, including state and central ones, to ensure as wide a representation as possible. GRP is a participatory process -- companies voluntarily disclose data and permit the GRP team to independently scrutinise the plants and their records.

The plants were rated on around 60 parameters covering everything from coal and water use and plant efficiency to air and water pollution and ash management. Local community views and impacts on them were given due weightage along with the plants' compliance record and environment policies. The ratings involve comparing the performance of the plants against the global best or norms.

Priyavrat Bhati, programme director of CSE's Sustainable Industrialisation team (which is behind this rating project), said: "The most striking part of the ranking is that 20 plants did not get a single leaf, which is a reflection of their particularly poor environmental performance. Some of the plants did not want to participate. Yet, we assessed them on the basis of field-level surveys and publicly available data."

He added: "We were encouraged by the transparency showed by a number of state-owned plants that voluntarily disclosed data despite being inefficient and highly polluting."

What is the way ahead?

- National norms for PM are very weak and need to be brought in line with global standards.
- National norms for SO_x, NO_x and mercury are absent and need to be established with short breathing room to install new abatement technologies.
- Monitoring by regulators should be strengthened – they should be given more powers (including imposing stiff penalties) to enforce compliance.
- Ash policy should support higher usage of ash. Utilisation targets for individual plants should keep in mind scope for utilization.
- Coal washing capacity needs to be doubled to meet increased use.
- Regulations/incentives to ensure improvement in capacity utilisation.
- Approvals for new capacities should be only for supercritical/ultra supercritical plants.
- Old inefficient plants should be closed at an aggressive pace.
- Efficiency improvement schemes like Perform, Achieve and Trade (PAT) should be strengthened with ambitious targets and more thorough analysis of plants' performance.
- The dispatch order (i.e. the sequence in which plants are asked to supply power) should ensure polluting plants are not called first because they are the cheaper.
- Clearances given to new capacities should be based on best achievable water consumption practices and levels.
- Water tariffs should increase to curb excessive use.

Said Chandra Bhushan: "The good news is that environment damage can be limited – technologies exist to cut air pollutants, while ash generated from burning coal can be gainfully used. We found some of the plants implementing these technologies. However, a concerted effort by the industry and regulators is urgently required."

Narain added: "The bottom line is that we cannot afford to continue discounting the environmental and health costs of polluting coal-based power plants. This is the clear message from our rating. We hope that the industry and government will listen to this message and act on it."

- *For more on this, please contact Anupam Srivastava, asrivastava@cseindia.org / 9910093893.*
- *For the study report and other related documents, please visit www.cseindia.org*