

HARDUAGANJ THERMAL POWER STATION

Harduanj thermal power station is operated by UPRVUNL. It has two units of 210 MW each in operation (see Table 1: Compliance deadlines for units in Harduanj thermal power station). Two units of 660 MW each are under construction. The plant is located in the outskirts of Aligarh district. It is 100 km away from Delhi, a critically polluted area. It sources coal through

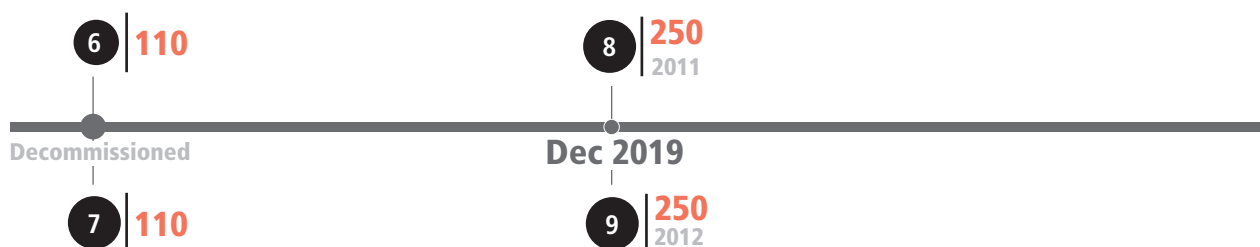
railways from nearby NCL coal mines and water from Upper Ganges Canal.

Data Quality - Sulphur dioxide data is under-reported. For e.g.- According to CEMS data sulphur dioxide is reported in the range of 390 mg/N.cu.m while CSE based on coal quality data, stoichiometrically estimated it to be around 990 mg/N.cu.m.

Table 1: Compliance deadlines for units in Harduanj thermal power station

Urgent measures are needed to comply

● Unit No. ■ Capacity in MW ■ Commissioning Year ■ Compliance deadline



Source: Central Electricity Authority, 2019

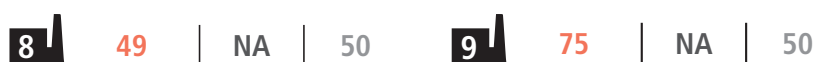
EMISSIONS AND SUGGESTED TECHNOLOGY:

● **Particulate matter:** The plant reports compliance with the norms in Unit 8 (see Table 2: Particulate Matter emissions in Harduanj thermal power station). Unit 9 exceeds the norms. Minor up-gradation of the ESP will be required to meet the norms.

Table 2: Particulate Matter emissions in Harduanj thermal power station

One unit requires up-gradation

■ Unit No. ■ CEMS ■ Lab ■ Norm



Source: Centre for Science and Environment, 2019

● **Sulphur di oxide:** The plant violates limits of sulphur dioxide emission; reduction of over 50 per cent is required (see Table 3: Sulphur Dioxide emissions in Harduanj thermal power station). CEMS is also underestimating the emissions by nearly half the CSE estimate. The plant is in cognizance of the under reportage by CEMS. They have floated tenders to install DSI systems.

Table 3: Sulphur Dioxide emissions in Harduaganj thermal power station

All the units require up-gradation

■ Unit No. ■ CEMS ■ Lab ■ CSE estimates ■ Norm



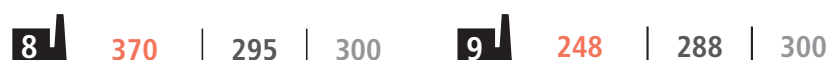
Source: Centre for Science and Environment, 2019

- **Oxides of nitrogen:** The emissions were reported in the range of 250 – 350mg/N.cu.m (see Table 4: Oxides of nitrogen emissions in Harduaganj thermal power station). The plant has low-NO_x burners and over-fire air systems. It will need to ensure efficient operations by combustion optimisation to meet the new norms.

Table 4: Oxides of nitrogen emissions in Harduaganj thermal power station

All the units require up-gradation

■ Unit No. ■ CEMS ■ Lab ■ Norm



Source: Centre for Science and Environment, 2019

CURRENT STATUS

- The plant has received offer for Pre-award consultancy from BHEL/GE. ESP up-gradation planned in Dec-19.
- Tender floated for DSI. Bid was opened.

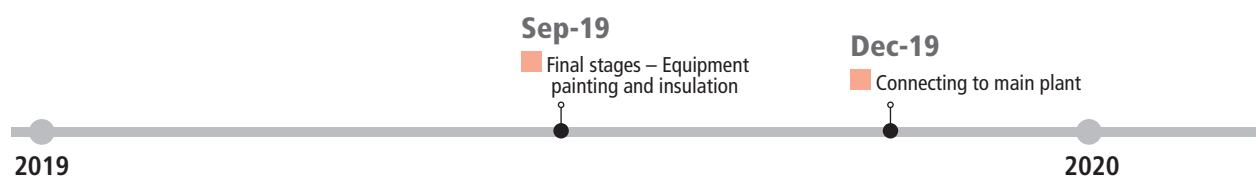
ACTION PLAN

- CSE has prepared unit-wise action plan for all three pollutants. The action plan is based on deadlines given under Section 5 notices sent by the Central Pollution Control Board in December, 2017, which were also submitted to the Supreme Court. In turn, the deadlines were based on the Phase-in Plan prepared by the CEA and the Regional Power Committees.
- The Action plan has been based on discussions with industry experts and manufacturers on time taken for various stages. We have converted the major project processes/stages into key milestones that can be used by PCB officials to track progress.
- A fair share of activities has been presumed to have already been undertaken. Below stage of work completion is required to meet the norms.

Penalty may be levied for not meeting the Particulate matter norms. Particulate matter norms must be complied on an immediate basis according to the show cause issued by Central Pollution Control Board.

Unit 8-9 (2X250 MW)

■ Sulphur dioxide control



Source: Centre for Science and Environment, 2019

Disclaimer – The analysis/timelines mentioned in this document for preparing action plan has been made based on the inputs provided by various technology suppliers.