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Fuel Mix Flexibility at Trombay Power Station

Tata Power Company

Tata Power Company Ltd (TPCL) operates the Trombay Thermal Power Station on the outskirts of Mumbai in India. The station itself comprises four generating units, each with a different generating capacity and fuel mix capability. It is of strategic importance to the whole area and has a total generating capacity in the region of 1.4GW.

TPCL wished to improve the station's fuel mix flexibility to take better advantage of world markets, in particular, the market for low sulphur coals. TPCL wanted to increase the quantity of coal burned from 1400 Te/day to 5200 Te/day and to add a further 250MW of gas-fired capacity to one of the units. However, environmental consents placed restrictions on the quantity of coal that could be burned in addition to placing restrictions on dust and SO_2 releases.

Entec and TPCL developed a strategy involving three main elements to gain statutory approvals for the proposals:

- Generating and emissions profiles were prepared to demonstrate that, provided a degree of management on the sulphur content of coal and oil was exercised, the coal-burn limit could be immediately raised to 3000 Te/day without breaching the plants emission limits for dust or SO_2.
- An environmental impact assessment and risk assessment was prepared for the proposed increase in generating capacity to demonstrate the minimal impact of the proposal.
- A feasibility study was prepared that demonstrated the ability of the plant to burn up to 5200 Te/day of coal with appropriate modifications to the flue gas desulphurisation system.

The case for raising the coal limit to 3000 Te/day and the assessments for the proposed increase in generating capacity were approved by the relevant authorities. TPCL has retained the feasibility study internally to assist in future strategic decisions on the fuel and generating mix.

Helping achieve an increase in electrical generation capacity