Lalitpur thermal power station has a capacity of 1,980 MW with three units of 660 MW each (see Table 1: Compliance deadlines for units in Lalitpur thermal power station). It is operated by Bajaj Hindustan Ltd. It is located in Lalitpur district. It sources coal through railways from CCL coal mines and water from Burgaon dam. A case was filed recently against the plant for drawing water from the dam. NGT had ordered an inspection committee to recommend solutions.

Data Quality - The data collected from Central Pollution Control Board indicate severe underestimation of sulphur dioxide and oxides of nitrogen emissions. For e.g.: CEMS data report sulphur dioxide in the range of 290 mg/N.cu.m however CSE based on coal quality data stoichiometrically estimates emissions over 1000 mg/N.cu.m. Similarly, without installation of NOx control systems like SCR, achieving emissions as low as 135 mg/N.cu.m is not possible.

### Table 1: Compliance deadlines for units in Lalitpur thermal power station

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>Capacity in MW</th>
<th>Commissioning Year</th>
<th>Compliance deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>660</td>
<td>2016</td>
<td>Dec 2020</td>
</tr>
<tr>
<td>2</td>
<td>660</td>
<td>2016</td>
<td>Feb 2021</td>
</tr>
<tr>
<td>3</td>
<td>660</td>
<td>2016</td>
<td>Oct 2021</td>
</tr>
</tbody>
</table>

Source: Central Electricity Authority, 2019

### EMISSIONS AND SUGGESTED TECHNOLOGY:

- **Particulate matter:** The plant reports compliance with the norms (see Table 2: Particulate Matter emissions in Lalitpur thermal power station). The CEMS data of sulphur dioxide and oxides of nitrogen are under-reported. Hence to avoid discrepancies independent lab assessments of PM emissions could be of benefit.

### Table 2: Particulate Matter emissions in Lalitpur thermal power station

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>CEMS</th>
<th>Lab</th>
<th>Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38</td>
<td>NA</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>43</td>
<td>NA</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>43</td>
<td>NA</td>
<td>50</td>
</tr>
</tbody>
</table>

Source: Centre for Science and Environment, 2019
Table 3: Sulphur Dioxide emissions in Lalitpur thermal power station
Current emission level data is unavailable in public domain

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>CEMS</th>
<th>Lab</th>
<th>Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>290</td>
<td>NA</td>
<td>over 1000</td>
</tr>
<tr>
<td>2</td>
<td>297</td>
<td>NA</td>
<td>over 1000</td>
</tr>
</tbody>
</table>

Source: Centre for Science and Environment, 2019

Table 4: Oxides of nitrogen emissions in Lalitpur thermal power station
Plant reports compliance with the NO\textsubscript{x} norms

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>CEMS</th>
<th>Lab</th>
<th>CSE estimates</th>
<th>Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>128</td>
<td>NA</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>135</td>
<td>NA</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>135</td>
<td>NA</td>
<td>300</td>
<td></td>
</tr>
</tbody>
</table>

Source: Centre for Science and Environment, 2019

- **Sulphur dioxide**: The CEMS data is underreported. Based on coal quality data, CSE stoichiometrically estimates emissions over 1000 mg/N.cu.m (see Table 3: Sulphur Dioxide emissions in Lalitpur thermal power station). CEMS data under reports by more than two-third of the actual emissions.

- **Oxides of nitrogen**: The CEMS data is severely underreported, even without installation of NO\textsubscript{x} control systems like SCR, achieving emissions as low as 135mg/N.cu.m is not possible (see Table 4: Oxides of nitrogen emissions in Lalitpur thermal power station).

**CURRENT STATUS:**
- The power station states cost approval a reason for no further progress. Petition was filed with Uttar Pradesh Electricity Regulatory Commission (UPERC) for approval of capital cost for installation of FGD and other associated systems. UPERC directed them to approach Central Electricity Authority (CEA).

**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.
Unit 1 (660 MW)

- **Sulphur dioxide control**
- **Critical**

- **Sep-19**
  - Equipment erection – Absorber completion
- **Dec-19**
  - Electrical and C&I work completion
- **Mar-20**
  - Complete construction – Painting and insulation
- **Sep-20**
  - Trail run

- **2019**
- **2020**
- **2021**

**Source:** Centre for Science and Environment, 2019

Unit 2 (660 MW)

- **Sep-19**
  - Equipment erection – Booster fan work initiation
- **Dec-19**
  - Equipment erection – Absorber completion
- **Mar-20**
  - Electrical and C&I work completion
- **Jul-20**
  - Functioning equipment
- **Sep-20**
  - Trail run
- **Dec-20**
  - Collect documents on PG test performance
- **Feb-21**
  - Collect documents on PG test performance

- **2019**
- **2020**
- **2021**

**Source:** Centre for Science and Environment, 2019

Unit 3 (660 MW)

- **Sulphur dioxide control**
- **Critical**

- **Sep-19**
  - Civil foundation – final stages
- **Dec-19**
  - Equipment erection – Booster fan work initiation
- **Jun-20**
  - Equipment erection – Absorber installation
- **Mar-20**
  - Equipment erection – Absorber completion
- **Sep-20**
  - Electrical and C&I work completion
- **Dec-20**
  - Complete construction – Painting and insulation
- **Mar-21**
  - Functioning equipment
- **Oct-21**
  - Collect documents on PG test performance
- **Aug-21**
  - Trail run

- **2019**
- **2020**
- **2021**

**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.