


|  <b>Monitoring report form for CDM project activity</b><br><b>(Version 09.0)</b> |  |   |  |
|---|--|---|--|
| <b>MONITORING REPORT</b>  |  |   |  |
| <b>Title of the project activity</b>  | 155 MW Gas based combined cycle power project at Hazira  |   |  |
| <b>UNFCCC reference number of the project activity</b>  | 1300 <sup>1</sup>  |   |  |
| <b>Version number of the PDD applicable to this monitoring report</b>   | 03   |   |  |
| <b>Version number of this monitoring report</b>   | 01   |   |  |
| <b>Completion date of this monitoring report</b>  | 11/04/2022   |   |  |
| <b>Monitoring period number</b>   | 04   |   |  |
| <b>Duration of this monitoring period</b>   | 01/11/2011 - 25/02/2018 (First and last date included)   |   |  |
| <b>Monitoring report number for this monitoring period</b>  | NA   |   |  |
| <b>Project participants</b>   | M/s Essar Steel Limited (ESTL)<br>M/s Bhandar Power Limited (BPL)  |   |  |
| <b>Host Party</b>   | India  |   |  |
| <b>Applied methodologies and standardized baselines</b>   | AM0029 - Baseline Methodology for Grid Connected Electricity Generation Plants using Natural Gas, Version 01.1 <sup>2</sup><br>Standardized baseline: Not Applicable |   |  |
| <b>Sectoral scopes</b>  | Sectoral scope 01: Energy Industries (renewable/non-renewable sources)   |   |  |
| <b>Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period</b>                             | <b>Amount achieved before 1 January 2013</b>   | <b>Amount achieved from 1 January 2013 until 31 December 2020</b> | <b>Amount achieved from 1 January 2021</b> |
|   | 89,290 tCO <sub>2</sub> e  | 39,048 tCO <sub>2</sub> e   | 0 tCO <sub>2</sub> e                       |
| <b>Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD</b>                                | 1,207,486 tCO <sub>2</sub> e   |   |  |

<sup>1</sup> <https://cdm.unfccc.int/Projects/DB/BVQ1187767050.75/view>

<sup>2</sup> [https://cdm.unfccc.int/UserManagement/FileStorage/CDMWF\\_AM\\_KTKZTS1HEG4JBIETV74WMLZY10061](https://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_KTKZTS1HEG4JBIETV74WMLZY10061)  
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## SECTION A. Description of project activity

### A.1. General description of project activity

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**Purpose of the project activity and the measures taken to reduce greenhouse gas emissions:**

Essar Steel Limited (ESTL) has setup a 500 MW natural gas based combined cycle power plant (CCPP) through a special purpose vehicle Bhandar Power Limited (BPL). The CCPP has been set up in two phases. The candidate project of 155 MW is Phase – I of the CCPP

The project activity power plant receives Natural Gas (NG) in pipelines from ESTL, and water is pumped from the Tapi river. BPL and ESTL have entered into a Power Purchase Agreement (PPA) under which BPL would supply power to ESTL.

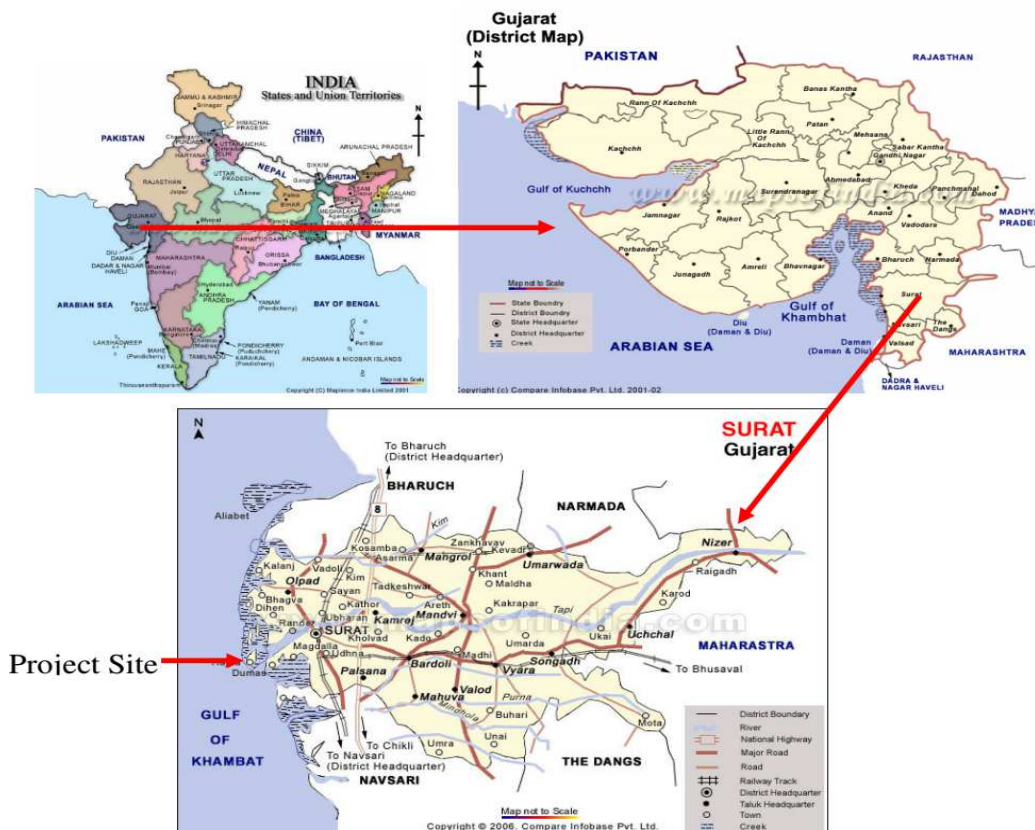
The project activity avoids requirement to purchase power from the Western grid of India that is predominantly supplied with coal/ lignite based power plants, and reduces requirement of power generation in the grid, thereby avoiding emission of Green House Gases.

### A.2. Location of project activity

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The project activity is located on a 20 hectare complex adjacent to an existing HBI manufacturing unit of Essar at Hazira at Longitude: 72°39'15"E; Latitude: 21°06'13"N and Altitude: 5.6 Meters (Above Mean Sea Level). This area is connected to the nearest city Surat (27 km away) by Surat-Hazira Road. The nearest port is at Hazira and railway station is at Surat. The Taluka is Choryasi and the District is Surat in the state of Gujarat.

**Host Party** : India  
**Region/State/Province** : Gujarat  
**City/Town/Community** : Village Hazira, Taluka Choryasi, District Surat  
**Location Map**



**A.3. Parties and project participants**

| Parties involved   | Project participants  | Indicate if the Party involved wishes to be considered as project participant (Yes/No) |
|--------------------|---|--|
| India (host Party) | M/s Essar Steel Limited (ESTL)<br>M/s Bhandar Power Limited (BPL) | No   |

**A.4. References to applied methodologies and standardized baselines**

&gt;&gt;

Approved baseline methodology AM0029: "Baseline Methodology for Grid Connected Electricity Generation Plants using Natural Gas", Version 01.1<sup>3</sup> dated 19 May 2006, has been applied to this project, having sectoral scope 01 – Energy Industries (Renewable/ Non-renewable).

Standardized baselines : Not Applicable

**A.5. Crediting period type and duration**

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Type of crediting period : Fixed Crediting Period  
Crediting period : 26/02/2008 – 25/02/2018

**SECTION B. Implementation of project activity****B.1. Description of implemented project activity**

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**Brief Technical details of the project design**

The GT and generator package (MS 9161), GE Frame 9E, with a site rating of 100 MW capacity was procured from TEPCO's Sodegaura Gas Turbine Power Station in Japan. A dual pressure HRSG (manufactured by Deltak, USA) and a STG of 55 MW rated capacity at site conditions were added to make a combined cycle electricity generation system. No supplementary firing in HRSG is required.

In addition to the main plant equipment, auxiliary cooling water system, condenser cooling water system, electrical systems, evacuation of power, etc., are also parts of the power project. Also included are features for addressing environmental aspects and safety in operation and maintenance of the power project. Power generated from this project activity at BPL is evacuated at 220 kV to MRSS (main receiving sub-station) of ESTL which is connected to GETCO grid.

The necessary transmission lines for this purpose are installed by BPL. The GTG generator is connected to the bus in the switchyard through a 160 MVA generator transformer that steps up voltage from 15 kV to 220 kV provided with on load tap changers on the high voltage side. The STG generator is connected to the switchyard through a 70 MVA generator transformer that steps up voltage of 11 kV to 220kV. The connections from generator to respective generator transformers are through isolated phase bus ducts. The connection between HT side of generator transformers and the switchyard are by using overhead lines using ACSR conductor 220 kV HT cables.

The NG used as fuel for the project is a combination of NG and R-LNG (Re-gasified- Liquid Natural Gas) and is received from ESTL, who in turn receive it from various sources. The share of R-LNG is estimated to be 50% in energy terms.

<sup>3</sup>[https://cdm.unfccc.int/UserManagement/FileStorage/CDMWF\\_AM\\_KTKZTS1HEG4JBIETV74WMLZY10061](https://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_KTKZTS1HEG4JBIETV74WMLZY10061)  
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**Relevant dates for the project activity:**

The project activity is construction and operation of a 155 MW natural gas based power plant Industries Limited. Starting date of commercial operation of project activity is 15/01/2006 (COD). The project activity was not implemented in phases/ stages and thus single commercial operations start date is applicable.

There were no any events and situations reported during this monitoring period which may impact the applicability of the methodology.

**B.2. Post-registration changes****B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents**

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There are no temporary deviations from the registered monitoring plan, the applied methodologies, the applied standardized baselines or the other applied methodological regulatory documents during this monitoring period. Hence, Not Applicable

**B.2.2. Corrections**

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There are no corrections to project information or parameters fixed at the registration or renewal of crediting period of the project activity. Hence, Not Applicable

**B.2.3. Changes to the start date of the crediting period**

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There is no request for the change to the start date of the crediting period.

**B.2.4. Inclusion of monitoring plan**

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There is no post-registration change to include a monitoring plan into the PDD.

**B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents**

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There are no any permanent changes from registered monitoring plan or applied methodology.

**B.2.6. Changes to project design**

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There are no changes to project design of registered project activity.

**B.2.7. Changes specific to afforestation or reforestation project activity**

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Not applicable as this project activity is not afforestation or reforestation project activity.

**SECTION C. Description of monitoring system**

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**Monitoring Plan for CDM activity:**

The general conditions set out in this monitoring plan for metering, recording, meter inspections, test & checking; and communication are applicable for both electrical energy and natural gas, where relevant and applicable.

**I. Monitoring for Net Electricity Generation (EG<sub>y</sub>):  
Metering Plan**

The delivered energy (electricity) is metered by the Project proponent at the following locations:

1. Gas Turbine Generators

- Main meter - high Voltage side of the step up transformer using a 0.2 class energy meter
- Check meter – high voltage side of the step up transformer using a 0.2 class energy meter

2. Steam Turbine Generator

- Main meter - high Voltage side of the step up transformer using a 0.2 class energy meter
- Check meter - high Voltage side of the step up transformer using a 0.2 class energy meter

Metering equipments are electronic meters. The Gross electricity generation measurements from Gas Turbine Generator and Steam Turbine Generator are done using respective main meters and check meters. Sum of Gross generation from the Gas Turbine Generator and the Steam Turbine Generator are the gross generation from the plant. The metering equipment are maintained in accordance with electricity standards.

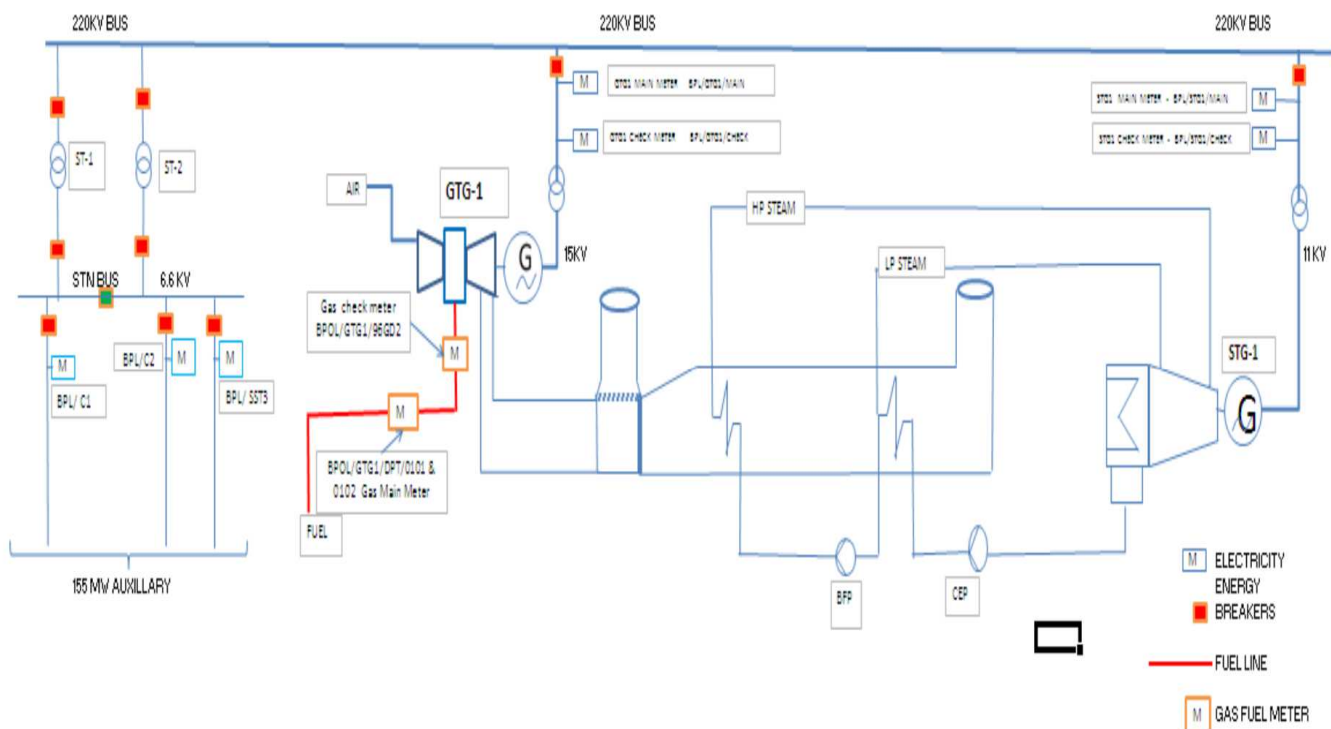
3. Auxiliary Consumption

- Main meter – C1 incomer at 6.6kV level using a 0.2 class energy meter
- Main meter – C2 incomer at 6.6kV level using a 0.2 class energy meter
- Main meter – SST 3 incomer at 6.6kV level using a 0.2 class energy meter

Auxiliary consumption for the power station is met by import of electricity through the station transformer. The measurement of electricity imported for auxiliary consumption are done using the main meter of accuracy class 0.2 installed at three numbers of 6.6kV level feeders for supplying auxiliary load. The sum of the energy meter reading of the three 6.6kV feeders gives the total auxiliary consumption. The metering equipment is maintained in accordance with electricity standards.

The meter readings are recorded from the energy meters manually on a daily basis (00.00 Hrs every day) and are archived in electronic format, monthly. The joint meter reading indicating the net energy exported in the month are recorded and signed by BPL and ESTL at the end of each month. The joint meter readings are archived in paper form.

Line Diagram showing Energy and Gas Consumption metering point



**Meter Test / Checking for Energy Meter Reading (Gross Energy Generated):****Scheduled testing of meters**

The energy meter is tested for accuracy at least once in every 5 years against an accepted laboratory standard meter in accordance with electricity standards by an accredited third party. The meters are deemed to be working satisfactory if the errors are within specifications for meters of 0.2 accuracy class. The consumption registered by the main meter is hold well as long as the error in the meters is within the permissible limits.

The meters are tested / calibrated on site by an accredited third party. The testing / calibration is synchronized with scheduled maintenance of the plant whenever practical. Whenever the calibration of the meter does not coincide with the scheduled maintenance of the plant, the meter is made offline for the duration of the test / calibration. Under such circumstances, when the main meter is made offline for test / calibration, the reading recorded by the check meter is used for calculations. If the check meter is made offline for test / calibration, the reading recorded by the main meter is used for calculations.

**Comparison of Main meter and check meter readings**

If the recorded reading of the main meter and the check meter differ by more than 0.5 % in a month, both the meters are tested and calibrated on site immediately, one after the other. During the calibration / test, if the main meter readings are found to be within the permissible limits of error, then the readings recorded by the main meter is hold good. If the main meter reading are found to be beyond the permissible limits of error, and the check meter is working within the permissible limits of error, then the reading recorded by check meter is considered for calculations since last calibration / test or verification date whichever is later, up to the current calibration / test. If during the calibration and tests, both the main meter and check meter are found to be beyond permissible limits of error, then correction is applied to the reading registered by the main meter to arrive at the correct reading of energy supplied for the period beginning of the month up to that particular day.

**Meter Test / Checking for Energy Meter Reading (Auxiliary Consumption):**

The energy meter is tested for accuracy at least once in five years against an accepted laboratory standard meter in accordance with electricity standards by an accredited third party. The meters are deemed to be working satisfactory if the errors are within specifications for meters of 0.2 accuracy class. The consumption registered by the meter is hold well as long as the error in the meters is within the permissible limits. If during the calibration and test the meter is found to be beyond permissible limits of error, then correction is applied to the reading registered by the meter to arrive at the correct reading of energy for the period starting from the last calibration / test or verification date whichever is later, up to the current calibration / test.

**Missing Data:**

In case of any missing data due to a meter being taken out of service for calibration/ testing, last 3 months average is used to close the gap. The statistical techniques used shall conform to BIS or any other relevant international standards.

**II. Monitoring for Natural Gas Consumption ( $FC_{t,y}$ ):****Metering Plan**

The natural gas consumed is metered by the Project Proponent at the following locations

1. Main meter - Located at the Gas Conditioning Skid
2. Check meter - Located at the inlet of Gas Turbine

The meter readings are displayed in the plant DCS and is recorded from the DCS manually on daily basis (00.00 Hrs every day) in electronic format and are archived monthly in electronic format. The joint meter reading indicating the natural gas consumed for the month are recorded and signed by BPL and ESTL at the end of each month. The joint meter readings are archived in paper form.

**Metering Equipment for Natural Gas Consumption:**

Metering equipments consists of differential pressure type meters along with differential pressure transmitters, pressure transmitters for pressure measurement and RTD for temperature measurements. Changes in specific gravity reading are also considered in the computation of the natural gas flow, updated manually once in every shift. The Natural Gas Consumption metering is done using a main meter and a check meter. Both the meters are of AGA-3/API14.3 standard. The meters are installed and owned by the Project proponent. The metering equipment is maintained in accordance with relevant standards.

**Meter Test / Checking for Natural Gas Meter Reading (Natural Gas Consumed):**

The natural gas meter is tested for accuracy at least once in six months against an accepted laboratory standard meter in accordance with prescribed standards. The meters are deemed to be working satisfactory if the errors are within specifications for meters of AGA-3/API14.3. The consumption registered by the main meter is hold well as long as the error in the meters is within the permissible limits.

If the recorded reading of the main meter and the check meter differ by more than one percent in a month, both the meters are tested and calibrated immediately one after the other. During the calibration / test, if the main meter reading is found to be within the permissible limits of error, then the readings recorded by the main meter is hold good. If the main meter reading are found to be beyond the permissible limits of error, and the check meter is working within the permissible limits of error, then the reading recorded by check meter is considered for calculations since last calibration / test or verification whichever is later, up to the current calibration / test. If during the calibration and tests, both the main meter and check meter are found to be beyond permissible limits of error, then correction is applied to the reading registered by the main meter to arrive at the correct reading of natural gas consumed for the period starting from the last calibration / test or verification whichever is later, up to the current calibration / test.

The testing / calibration is synchronized with scheduled maintenance of the plant whenever practical. Whenever the calibration of the meter does not coincide with the scheduled maintenance of the plant, the meter is made offline for the duration of the test / calibration. Under such circumstances, when the main meter is made offline for test / calibration, the reading recorded by the check meter is used for calculations. If the check meter is made offline for test / calibration, the reading recorded by the main meter is used for calculations.

**Calibration Procedure:**

If any of the meter is found to be not working or faulty, the meter is taken out of service and calibrated / tested immediately. If one of the meters has been taken out for calibration / test, the natural gas consumption recorded by the other meter is recorded and used for calculations, during the time duration for calibration / test.

Calibration / test of the natural gas meters is done by BPL against master laboratory meter owned by the project participant. The master laboratory meter is in turn calibrated by an accredited third party as per a reputed & relevant international standard. All the calibration certificates including that of the master laboratory meter is maintained by the project participant.

**Missing Data:**

In case of any missing data, last 3 months average is used to close the gap. The statistical techniques used is conform to BIS or any other relevant international standards.

**III. Monitoring for Net Calorific Value of Natural Gas ( $NCV_{t,y}$ ):****Metering Plan**

The net calorific value of natural gas is measured by ESTL, the fuel supplier to the project. The sampling is done at the fuel supplier's end once in a shift (Total three times in a day) and the analysis is done using offline chromatograph located at ESTL laboratory.

The fuel analysis done is uploaded in the intranet from ESTL laboratory. The fuel analysis readings are displayed in the plant intranet terminal available at the control room. The net calorific value and the specific gravity of the natural gas is recorded from the intranet manually once in a shift.

The arithmetic average of the net calorific value for the three shifts in a day is considered as the calorific value of the natural gas for the day and the arithmetic average of net calorific value for all days in a month is considered as the net calorific value of the natural gas consumed for that month.

The monthly arithmetic average value of net calorific value is archived electronically.

**Metering Equipment for Natural Gas Net Calorific Value:**

Net calorific value of the natural gas is measured by ESTL using an offline chromatograph. The metering equipment is owned by ESTL and is maintained in accordance with relevant standards.

**Meter Test / Checking for Chromatograph Reading (Net Calorific Value):**

The chromatograph is tested for accuracy and calibrated at least once in four months against an accepted standard gas in accordance with prescribed standards. The composition of the standard gas is provided by the gas supplier. The calibration certificates of the chromatograph is maintained by the project participant.

**Missing Data:**

In case of any missing data, last 3 months average is used to close the gap. The statistical techniques used is conform to BIS or any other relevant international standards.

**IV. Internal Audit Plan:**

An internal audit team is constituted for verifying and auditing of the data recorded and archived with respect to the registered PDD and the monitoring plan. The audit team is also verify and audit the calibration plan and calibration record of the instruments with respect to the registered PDD and the monitoring plan. The audit team is meet once in three months (quarterly) to verify and audit the data collected, the process followed and the quality control and assurance measures. They have report any non-conformity to the Head – 500 MW CCPP, BPL, Hazira and he is take appropriate steps to rectify the non-conformity.

The following documents is made available to the internal audit team:

1. Copy of the registered PDD
2. Copy of the Power Purchase Agreement
3. Electricity meter reading recorded daily & archived monthly in electronic form
4. Natural gas consumption meter reading recorded daily & archived monthly in electronic form
5. Net calorific value reading archived monthly in electronic form
6. Joint monthly electricity meter reading archived in paper form
7. Joint monthly natural gas consumption reading archived in paper form
8. Natural Gas Logbook maintained in the control room indicating NCV
9. Daily data recorded in primary data collection forms for the quarter
10. Copy of invoices raised by BPL on ESTL
11. Copy of monthly MIS reports
12. Meter Calibration record

The internal audit team is also certify the annual consolidated data for the verification of CER. The team is also certify the calculations for arriving at actual CER.

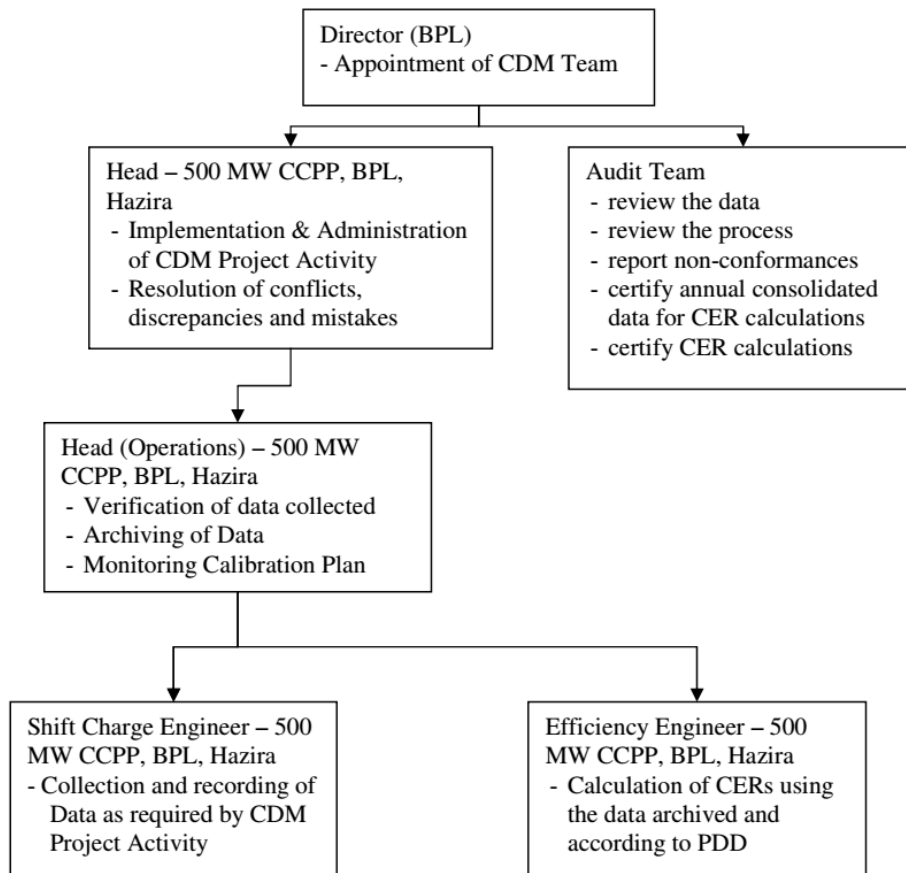
**Verification:**

The quantitative details indicating the net exported electrical energy, natural gas consumed and the net calorific value audited by the internal audit team constituted for the purpose is used, for verification of the CERs. Further, the joint energy meter reading jointly signed by ESTL and BPL and the invoices raised by BPL on ESTL is the base audit document for verification protocol.



**V. Team for CDM Monitoring Plan Implementation:**

The organization structure and division of responsibilities for implementation of CDM project activity is described below:



Director (BPL) is responsible for appointment of CDM team for the implementation of CDM project activity. Any change in the CDM team composition or responsibilities is notified by Director (BPL).

The shift charge engineer of BPL is responsible for collecting and recording all the data as required by the PDD and monitoring plan.

Head of Operation, 500 MW CCPP, BPL, Hazira is responsible for verifying the data collected and recorded on a day to day basis and archiving of the data. He is also responsible for ensuring the calibration of all the instruments are done according to the schedule and the requirement of monitoring plan.

Efficiency Engineer, 500 MW CCPP, BPL, Hazira is responsible for calculation of CERs from the archived data and according to PDD of the CDM Project Activity.

Head – 500 MW CCPP, BPL, Hazira is responsible for the overall implementation & administration of the monitoring plan. Conflicts, Discrepancies, Mistakes etc in relation to the monitoring plan of the CDM project activity is referred to Head – 500 MW CCPP, BPL, Hazira for resolution and his resolution in this regard is final and binding.

An audit team is constituted consisting of Head of Department – C&I and Head of the Department – Electrical Maintenance. The audit team is meet once in three months (Quarterly) at 500 MW CCPP, BPL, Hazira to review the data, process and report non-conformances with PDD, monitoring plan and Quality Control Measures.

**VI. Data Recording Procedure:**

All the relevant data as per the registered PDD and the CDM monitoring plan recorded daily (00.00 Hrs every day) in Primary Data Collection Form with form number BPOL/24HR/PH-1 and is signed by the on-duty shift charge engineer (SCE). The data recorded is archived at the end of every month in electronic format by Head (Operations) – 500 MW CCPP, BPL, Hazira in form number BPOL / PH-1/PR/00 HR.

The monthly joint meter reading indicating the energy exported for the month is recorded and signed at 00.00 Hrs on 1<sup>st</sup> of every month by the on duty shift charge engineers of 500 MW CCPP, BPL and MRSS, ESTL, in form number BPOL/JMR/ELECT/PH-1. The joint meter reading is verified and signed by Head (Operations) – 500 MW CCPP, BPL and Head – MRSS, ESTL.

The monthly joint meter reading indicating the natural gas consumption for the month is recorded and signed at 00.00 Hrs on 1<sup>st</sup> of every month by the on duty shift charge engineers of 500 MW CCPP, BPL and Production Planning Control, ESTL, in form number BPOL/JMR/NG/PH-1. The joint meter reading is verified and signed by Head (Operations) – 500 MW CCPP, BPL and Head – Production Planning Control, ESTL.

Any modification / changes required on the above forms for recording data is authorised by Head – 500 MW CCPP, BPL, Hazira.

**SECTION D. Data and parameters****D.1. Data and parameters fixed ex ante**

|  |  |
|--|--|
| <b>Data/Parameter</b>                                | EF <sub>BM,y</sub>   |
| Unit   | tCO <sub>2</sub> e/MWh   |
| Description  | Build Margin Emission Factor of Western Regional Electricity Grid  |
| Source of data                                       | “CO <sub>2</sub> Baseline Database for Indian Power Sector” Version 2.0 dated 21 June 2007 published by the Central Electricity Authority, Ministry of Power, Government of India.<br>The “CO <sub>2</sub> Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in">www.cea.nic.in</a> |
| Value(s) applied                                     | 0.630  |
| Choice of data or measurement methods and procedures | Build Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with ACM0002.  |
| Purpose of data/parameter                            | Calculation of baseline emissions  |
| Additional comments                                  | None   |

|  |  |
|--|--|
| <b>Data/Parameter</b>                                | EF <sub>OM,y</sub>   |
| Unit   | tCO <sub>2</sub> e/MWh   |
| Description  | Operating Margin Emission Factor of Western Regional Electricity Grid  |
| Source of data                                       | “CO <sub>2</sub> Baseline Database for Indian Power Sector” Version 2.0 dated 21 June 2007 published by the Central Electricity Authority, Ministry of Power, Government of India.<br>The “CO <sub>2</sub> Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in">www.cea.nic.in</a> |
| Value(s) applied                                     | 2003-04: 0.9903<br>2004-05: 1.0119<br>2005-06: 0.9933  |
| Choice of data or measurement methods and procedures | Operating Margin Emission Factor has been calculated by the Central Electricity Authority using the simple OM approach in accordance with ACM0002.   |
| Purpose of data/parameter                            | Calculation of baseline emissions  |
| Additional comments                                  | None   |

| <b>Data/Parameter</b>                                | <b>Carbon Emission Factor of Coal, Naphtha</b>   |
|--|--|
| Unit   | tCO <sub>2</sub> /TJ   |
| Description  | Emission factor of coal which has been identified as the baseline scenario fuel. This data also is used as an input for calculating the fugitive CH <sub>4</sub> emissions occurring in the absence of the project activity  |
| Source of data                                       | Carbon Emission Factor for Coal: Table 2.3 - India specific CO <sub>2</sub> emission coefficients, India's first National Communication to the United Nations<br>Carbon Emission Factor for Naphtha: Table 1.2 Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Workbook                    |
| Value(s) applied                                     | Carbon Emission factor of:<br>Coal: 26.13 t C/TJ<br>Naphtha: 20.00 t C/TJ  |
| Choice of data or measurement methods and procedures | As per AM0029, the fuel emission coefficient is to be determined based on national average fuel data if available. Accordingly we have used the data available in India's first national communication to the United Nations for our calculations where available, otherwise IPCC default values have been used. |
| Purpose of data/parameter                            | Calculation of Leakage Emissions   |
| Additional comments                                  | None   |

| <b>Data/Parameter</b>                                | <b>Oxidation Factor of Coal, Naphtha</b>  |
|--|---|
| Unit   | N/A   |
| Description  | Oxidation factor of coal which has been identified as the baseline scenario fuel. This data is used as an input for calculating the fugitive CH <sub>4</sub> emissions occurring in the absence of the project activity |
| Source of data                                       | Table 1.6 Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual  |
| Value(s) applied                                     | Oxidation factor of:<br>Coal: 0.98<br>Naphtha: 0.99   |
| Choice of data or measurement methods and procedures | Only IPCC default values are available.   |
| Purpose of data/parameter                            | Calculation of Leakage Emissions  |
| Additional comments                                  | None  |

| <b>Data/Parameter</b>                                | <b><math>\eta_{BL}</math> – Efficiency of Coal fired power generating stations</b>  |
|--|---|
| Unit   | N/A   |
| Description  | Energy efficiency of coal fired power plant which has been identified as the baseline scenario  |
| Source of data                                       | Calculated value based on fuel consumption, NCV of coal and electricity generation data for coal fired power stations published in the CEA General Review for western region. |
| Value(s) applied                                     | 38%   |
| Choice of data or measurement methods and procedures | Central Electricity Authority is Government of India undertaking mandated to publish information on performance of power sector in India by the Electricity Act 2003.         |
| Purpose of data/parameter                            | Calculation of Baseline Emissions   |
| Additional comments                                  | None  |

| <b>Data/Parameter</b> | <b>Coal Consumption in Coal fired power plants in the western region</b>                       |
|-----------------------|--|
| Unit                  | Million tonnes (MT)  |
| Description           | This data is used as an input for calculating the Energy efficiency of coal fired power plants |
| Source of data        | CEA CO <sub>2</sub> Baseline database  |

|  |   |                                   |
|--|---|-----------------------------------|
| Value(s) applied                                     | Coal fired stations   | Coal consumption (million tonnes) |
|  | Khaperkheda TPS   | 4,909                             |
|  | Sanjay Gandhi TPS   | 4,047                             |
|  | Vindhyachal STPS  | 10,860                            |
|  | Wanakbori TPS   | 7,404                             |
|  | Gandhinagar TPS   | 3,158                             |
|  | Chandrapur  | 12,234                            |
| Choice of data or measurement methods and procedures | Central Electricity Authority is Government of India undertaking mandated to publish information on performance of power sector in India by the Electricity Act 2003. All data is from CEA thermal review 2004 - 05 and CEA general review 2005 – 06. |                                   |
| Purpose of data/parameter                            | Calculation of Baseline Emissions   |                                   |
| Additional comments                                  | None  |                                   |

|  |   |
|--|---|
| <b>Data/Parameter</b>                                | <b>Calorific values of Coal, Natural Gas and Naphtha</b>  |
| Unit   | kCal/Kg or kCal/SCM   |
| Description  | This data is used as an input for calculating the Energy efficiency of coal fired power plants and the fugitive CH4 emissions occurring in the absence of the project activity                  |
| Source of data                                       | NCV of Coal – Table 6.3, CEA General Review 2006<br>NCV of Natural Gas and Naphtha: CEA Data on Petroleum fuels used by various Gas Turbines and Diesel Engine Power Plants in India in 2003-04 |
| Value(s) applied                                     | Net Calorific Values of:<br>Coal: 15.72 TJ/1000 tons<br>Natural gas: 34.12 TJ/Mcum<br>Naphtha: 46.89 TJ/1000 tons   |
| Choice of data or measurement methods and procedures | Central Electricity Authority is Government of India undertaking mandated to publish information on performance of power sector in India by the Electricity Act 2003                            |
| Purpose of data/parameter                            | Calculation of project and leakage emissions  |
| Additional comments                                  | None  |

|  |  |                        |
|--|--|------------------------|
| <b>Data/Parameter</b>                                | <b>Electricity Generation from Coal fired power plants in the Western Region</b>   |                        |
| Unit   | GWh  |                        |
| Description  | This data is used as an input for calculating the Energy efficiency of coal fired power plants   |                        |
| Source of data                                       | CEA CO2 baseline database  |                        |
| Value(s) applied                                     | Coal fired stations  | Gross generation (GWh) |
|  | Khaperkheda TPS  | 6,289                  |
|  | Sanjay Gandhi TPS  | 5,460                  |
|  | Vindhyachal STPS   | 17,831                 |
|  | Wanakbori TPS  | 10,883                 |
|  | Gandhinagar TPS  | 4,986                  |
|  | Chandrapur   | 15,925                 |
| Choice of data or measurement methods and procedures | Central Electricity Authority is Government of India undertaking mandated to publish information on performance of power sector in India by the Electricity Act 2003. In order to facilitate baseline emissions relating to electricity generation activities, CEA has published a database of CO2 emission factors for all the regional grids in India. This database also contains information on electricity generation from all major thermal power stations in the country. |                        |
| Purpose of data/parameter                            | Calculation of baseline emissions  |                        |
| Additional comments                                  | None   |                        |

| <b>Data/Parameter</b>                                | <b>Carbon Emission Factor of Natural Gas (EF<sub>CO<sub>2</sub>,t,y</sub>)</b>   |
|--|--|
| Unit   | tCO <sub>2</sub> /GJ   |
| Description  | The CO <sub>2</sub> emission factor per unit of energy of natural gas in year 'y'  |
| Source of data                                       | IPCC default value has been applied (Source: Chapter-2 IPCC 2006 Guidelines for National Greenhouse Gas Inventories)   |
| Value(s) applied                                     | 56.1 tCO <sub>2</sub> /TJ  |
| Choice of data or measurement methods and procedures | As there are no national data available for the emission factor of the fuel used, default value based on Table 2.2 of 2006 IPCC Guidelines for National Greenhouse Gas Inventories has been applied. |
| Purpose of data/parameter                            | Calculation of Project Emissions   |
| Additional comments                                  | None   |

| <b>Data/Parameter</b>                                | <b>Oxidation Factor of Natural Gas (OXID<sub>i</sub>)</b>  |
|--|--|
| Unit   | No unit  |
| Description  | Oxidation factor of natural gas  |
| Source of data                                       | IPCC default value has been applied (Source: Chapter-2 IPCC 2006 Guidelines for National Greenhouse Gas Inventories) |
| Value(s) applied                                     | 0.995  |
| Choice of data or measurement methods and procedures | As there are no national data available, IPCC default value based on is considered                                   |
| Purpose of data/parameter                            | Calculation of Project Emissions   |
| Additional comments                                  | None   |

| <b>Data/Parameter</b>                                | <b>Station Heat Rate of the Project activity</b>  |
|--|---|
| Unit   | kCal/kWh  |
| Description  | Station Heat Rate has been used to calculate the quantity of Natural Gas consumption associated with the expected electricity generations from the project activity. This data is used as an input for calculating Project Emissions. |
| Source of data                                       | From EPC contractor (value based on gross calorific value 2000 kCal/kWh; based on net calorific value 1,800 kCal/kWh)   |
| Value(s) applied                                     | 1,800 kCal/kWh  |
| Choice of data or measurement methods and procedures | Not applicable  |
| Purpose of data/parameter                            | Calculation of Project Emissions  |
| Additional comments                                  | None  |

| <b>Data/Parameter</b>                                | <b>CO<sub>2</sub> emissions from Build Margin Power plants in the western region</b>  |
|--|---|
| Unit   | tCO <sub>2</sub> e  |
| Description  | This data is used as an input for calculating the fugitive CH <sub>4</sub> emissions occurring in the absence of the project activity   |
| Source of data                                       | CEA CO <sub>2</sub> Baseline database   |
| Value(s) applied                                     | Please refer Annex 6 of registered PDD  |
| Choice of data or measurement methods and procedures | Central Electricity Authority is Government of India undertaking mandated to publish information on performance of power sector in India by the Electricity Act 2003. In order to facilitate baseline emissions relating to electricity generation activities, CEA has published a database of CO <sub>2</sub> emission factors for all the regional grids in India. This database also contains information on CO <sub>2</sub> emissions of all major thermal power stations in the country. |
| Purpose of data/parameter                            | Calculation of Leakage Emissions  |
| Additional comments                                  | None  |

## D.2. Data and parameters monitored

| Data/Parameter                        | $FC_{f,y}$   |
|---------------------------------------|--|
| Unit                                  | m <sup>3</sup> (cum)   |
| Description                           | Total volume of natural gas combusted in the project plant in year y   |
| Measured/calculated/default           | Measured   |
| Source of data                        | From plant fuel consumption log data   |
| Value(s) of monitored parameter       | 113,760,046.   |
| Monitoring equipment                  | Flow Meter (Please refer Appendix I for calibration details)   |
| Measuring/reading/recording frequency | Daily  |
| Calculation method (if applicable)    | Not Applicable   |
| QA/QC procedures                      | The meters are calibrated as per the standard procedures and documents for the same are maintained throughout. Refer Section C for more details. |
| Purpose of data/parameter             | Calculation of project and leakage emissions   |
| Additional comments                   | 100% of data is monitored.   |

| Data/Parameter                        | $NCV_f$  |
|---------------------------------------|--|
| Unit                                  | kCal/SCM   |
| Description                           | The net calorific value (energy content) per volume unit of natural gas in year 'y' as determined from ESTL data |
| Measured/calculated/default           | Measured   |
| Source of data                        | From ESTL  |
| Value(s) of monitored parameter       | 8,417  |
| Monitoring equipment                  | Chromatograph  |
| Measuring/reading/recording frequency | Daily  |
| Calculation method (if applicable)    | Measured by ESTL using chromatograph, the value will be supplied by ESTL once in a shift in electronic form.     |
| QA/QC procedures                      | No additional QA/QC procedures may need to be planned.   |
| Purpose of data/parameter             | Calculation of project and leakage emissions   |
| Additional comments                   | The data will be archived electronically   |

| Data/Parameter                        | $EF_{co2,f,y}$  |
|---------------------------------------|---|
| Unit                                  | tCO <sub>2</sub> e/GJ   |
| Description                           | CO <sub>2</sub> Emission Factor of Natural Gas                            |
| Measured/calculated/default           | Default   |
| Source of data                        | IPCC default values for Carbon Emission Factor (15.3 tC/tJ)               |
| Value(s) of monitored parameter       | $EF_{co2,f,y} = 15.3 \times 44/12 = 56.10 \text{ tCO}_2\text{e/tJ}$       |
| Monitoring equipment                  | Not Applicable  |
| Measuring/reading/recording frequency | This data is recorded annually based on latest IPCC information available |

|                                    |  |
|------------------------------------|--|
| Calculation method (if applicable) | Default values for Carbon Emission Factor of Natural Gas as per Table 1.2 Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Workbook has been considered. This is also in conformity with the recommendations of the GHG inventory information report submitted by India's Initial National Communication (Chapter 2) where in it is mentioned that in the case of petroleum products and natural gas, the use of default emissions would be fairly accurate due to relatively low variation in quality of these fuels across the globe, as compared to coal. This data will be recorded annually based on latest IPCC information available and will be archived in electronic/paper form. Archived data will be kept up to two years from the end of crediting period or the last issuance, which ever occurs later. |
| QA/QC procedures                   | No additional QA/QC procedures are planned.  |
| Purpose of data/parameter          | Calculation of Project Emissions   |
| Additional comments                | Carbon Emission factor of natural gas will be updated as per the latest guidelines available from IPCC on national greenhouse gas inventory on year to year basis.   |

|                                       |  |
|---------------------------------------|--|
| <b>Data/Parameter</b>                 | <b>OXID<sub>f</sub></b>  |
| Unit                                  | No unit  |
| Description                           | Oxidation Factor of Natural Gas  |
| Measured/calculated/default           | Default  |
| Source of data                        | IPCC   |
| Value(s) of monitored parameter       | 0.995  |
| Monitoring equipment                  | Not Applicable   |
| Measuring/reading/recording frequency | This data will be recorded annually based on latest IPCC information available   |
| Calculation method (if applicable)    | Default values as per Table 1.6 Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual has been considered. This is also in conformity with the recommendations of the GHG inventory information report submitted by India's Initial National Communication (Chapter 2) where in it is mentioned that in the case of petroleum products and natural gas, the use of default emissions would be fairly accurate due to relatively low variation in quality of these fuels across the globe, as compared to coal. This data will be recorded annually based on latest IPCC information available and will be archived in electronic/paper form. Archived data will be kept up to two years from the end of crediting period or the last issuance, which ever occurs later. |
| QA/QC procedures                      | No additional QA/QC procedures are planned.  |
| Purpose of data/parameter             | Calculation of project emissions   |
| Additional comments                   | Oxidation factor of natural gas will be updated as per the latest guidelines available from IPCC on national greenhouse gas inventory on year to year basis.   |

|                                       |  |
|---------------------------------------|--|
| <b>Data/Parameter</b>                 | <b>EG<sub>PJ,y</sub></b>   |
| Unit                                  | MWh/ year  |
| Description                           | Net electricity generation in the project plant during the year y                                      |
| Measured/calculated/default           | Measured   |
| Source of data                        | From the electronic meters installed at the project site.  |
| Value(s) of monitored parameter       | 454,080.21   |
| Monitoring equipment                  | Energy Meter (Please refer Appendix I for calibration details)   |
| Measuring/reading/recording frequency | The daily reading are archived electronically. Monthly joint meter reading are archived in paper form. |

|                                    |  |
|------------------------------------|--|
| Calculation method (if applicable) | Not applicable   |
| QA/QC procedures                   | The meters are calibrated as per the standard procedures and documents for the same will be maintained throughout. |
| Purpose of data/parameter          | Calculation of baseline emissions  |
| Additional comments                | N/A  |

|                                       |   |
|---------------------------------------|---|
| <b>Data/Parameter</b>                 | $EF_{BM,y}$   |
| Unit                                  | tCO <sub>2</sub> /MWh   |
| Description                           | Build Margin Emission factor for western grid   |
| Measured/calculated/default           | Calculated  |
| Source of data                        | "CO <sub>2</sub> Baseline Database for Indian Power Sector" published by the Central Electricity Authority, Ministry of Power, Government of India.   |
| Value(s) of monitored parameter       | 0.865   |
| Monitoring equipment                  | Not Applicable  |
| Measuring/reading/recording frequency | Build Margin Emission Factor are taken from the CO <sub>2</sub> baseline database published by CEA.   |
| Calculation method (if applicable)    | In case the CEA database is not updated, the project proponent are calculate the Build Margin number using CEA data. This data are computed annually based on latest available information and are archived in electronic/paper form. |
| QA/QC procedures                      | No additional QA/QC procedures are planned.   |
| Purpose of data/parameter             | Calculation of baseline emissions   |
| Additional comments                   | Archived data are kept up to two years from the end of crediting period or the last issuance, whichever occurs later.   |

|                                       |   |
|---------------------------------------|---|
| <b>Data/Parameter</b>                 | $EF_{BL,upstream,CH4}$  |
| Unit                                  | tCO <sub>2</sub> e/MWh  |
| Description                           | Emission factor for upstream fugitive methane emissions occurring in the absence of the project activity electricity generation   |
| Measured/calculated/default           | Calculated  |
| Source of data                        | CEA CO <sub>2</sub> baseline database   |
| Value(s) of monitored parameter       | 0.01128   |
| Monitoring equipment                  | Not Applicable  |
| Measuring/reading/recording frequency | Annually  |
| Calculation method (if applicable)    | $EF_{BL,upstream,CH4}$ is calculated for power plants included in the Build Margin, inline with the baseline emission factor selection. Therefore in line with the AM0029 requirement of ex-post determination of the Build Margin, the Emission factor for upstream fugitive methane emissions occurring in the absence of the project activity electricity generation (tCH <sub>4</sub> or tCO <sub>2</sub> e/MWh) are also be determined ex-post. This data are computed annually based on latest available information and are archived in electronic/paper form. |
| QA/QC procedures                      | No additional QA/QC procedures are planned.   |
| Purpose of data/parameter             | Calculation of leakage emissions  |
| Additional comments                   | Archived data are kept up to two years from the end of crediting period or the last issuance, which ever occurs later.  |



**D.3. Implementation of sampling plan**

&gt;&gt;

Not Applicable

**SECTION E. Calculation of emission reductions or net anthropogenic removals****E.1. Calculation of baseline emissions or baseline net removals**

&gt;&gt;

**Baseline Emissions:**

Baseline emissions are calculated by multiplying the electricity generated in the project plant ( $EG_{PJ,y}$ ) with a baseline CO<sub>2</sub> emission factor ( $EF_{BL,CO_2,y}$ ), as follows:

$$BE_y = EG_{PJ,y} * EF_{BL,CO_2,y}$$

$$BE_y = 454,080 \text{ MWh} * 0.865 \text{ t CO}_2/\text{MWh}$$

$$BE_y = 392,779 \text{ CO}_2$$

**E.2. Calculation of project emissions or actual net removals**

&gt;&gt;

The project activity is on-site combustion of natural gas to generate electricity. The CO<sub>2</sub> emissions from electricity generation ( $PE_y$ ) are calculated as follows:

$$PE_y = \sum_f FC_{f,y} \times COEF_{f,y}$$

$$COEF_{f,y} = \sum NCV_y \times EF_{CO_2,f,y} \times OXID_f$$

Sample calculation of project emission for Jan 2012 are given below

|                 |   |  |                        |         |
|-----------------|---|--|------------------------|---------|
| $PE_y$          | = | Project Emission   | tCO <sub>2</sub>       | 11,066  |
| $FC_{f,y}$      | = | Total volume of natural gas or other fuel 'f' combusted in the project plant or other start up fuel m <sup>3</sup> or similar) in year(s) 'y'  | MSCM                   | 6       |
| $COEF_{f,y}$    | = | CO <sub>2</sub> emission coefficient (tCO <sub>2</sub> /m <sup>3</sup> or similar) in year(s) for each fuel  | tCO <sub>2</sub> /MSCM | 1930.02 |
| $NCV_y$         | = | Net calorific value (energy content) per volume unit of natural gas in year 'y' (GJ/m <sup>3</sup> ) as determined from the fuel supplier, wherever possible, otherwise from local or national data; | kcal/SCM               | 8219    |
|                 |   |  | TJ/MSM                 | 34.40   |
| $EF_{CO_2,f,y}$ | = | CO <sub>2</sub> emission factor per unit of energy of natural gas in year 'y' (tCO <sub>2</sub> /GJ) as determined from the fuel supplier, wherever possible, otherwise from local or national data; | tCO <sub>2</sub> /TJ   | 56.1    |
| $OXID_f$        | = | Oxidation factor of natural gas  |                        | 1       |

For monitoring period 01/11/2011 to 25/02/2018 project emission are as follows

$PE_y = 221,436 \text{ tCO}_2\text{e}$  (roundup) – please refer ER sheet for more details

**E.3. Calculation of leakage emissions**

&gt;&gt;

The leakage emissions are calculated as follows:

$$LE_y = LE_{CH_4,y} + LE_{LNG,CO_2,y}$$

Sample calculation of project emission for Jan 2012 are given below

**Upstream fugitive emissions on account of use of natural gas by the project activity**

| Fugitive Emissions due to gas usage     | Unit                 | Formula | Value |
|---|----------------------|---------|-------|
| Fugitive CH <sub>4</sub> emission facto | tCH <sub>4</sub> /PJ |         | 296   |

|   |                      |                               |       |
|---|----------------------|-------------------------------|-------|
| Fugitive CO2 emission factor  | tCO <sub>2</sub> /TJ | = (296) x 21 /10 <sup>3</sup> | 6.22  |
| Annual Gas consumption (based on 100% NG of the total NG consumption) | Mcum                 | -                             | 6     |
| Calorific Value   | kCal/SCM             | -                             | 8,219 |
|   | TJ/Mcum              | -                             | 34.41 |
| Equivalent CO2 emissions  | tCO <sub>2</sub>     | -                             | 1,226 |

#### Upstream fugitive emissions on account of use of LNG by the project activity

| Fugitive Emissions due to gas usage                                   | Unit                 | Value |
|---|----------------------|-------|
| Upstream LNG Fugitive Emissions Factor                                | tCO <sub>2</sub> /TJ | 6     |
| Annual Gas consumption (based on 100% NG of the total NG consumption) | Mcum                 | 6     |
| Calorific Value   | kCal/SCM             | 8,219 |
|   | TJ/Mcum              | 34.41 |
| Equivalent CO2 emissions  | tCO <sub>2e</sub>    | 1,184 |

#### Upstream fugitive emission occurring in the absence of the project activity

| Fugitive Emissions due to gas usage                            | Unit                  | Value     |
|--|-----------------------|-----------|
| Net Export to grid, MWh<br>(Export to Grid - Import from Grid) | MWh                   | 23,760.91 |
| Fugitive Emission Factor in Baseline                           | tCO <sub>2</sub> /MWh | 0.01152   |
| Equivalent CO2 emissions                                       | tCO <sub>2e</sub>     | 273.73    |

**Leakage Emissions for Jan 2012 = 1,226 tCO<sub>2</sub> + 1,184 tCO<sub>2</sub> - 273.73 tCO<sub>2</sub> = 2,136 tCO<sub>2</sub>**

For monitoring period 01/11/2011 to 25/02/2018 project emission are as follows  
LE<sub>y</sub> = 43,005 tCO<sub>2e</sub> (roundup) – please refer ER sheet for more details

#### E.4. Calculation of emission reductions or net anthropogenic removals

|              | Baseline GHG emissions or baseline net GHG removals (t CO <sub>2e</sub> ) | Project GHG emissions or actual net GHG removals (t CO <sub>2e</sub> ) | Leakage GHG emissions (t CO <sub>2e</sub> ) | GHG emission reductions or net anthropogenic GHG removals (t CO <sub>2e</sub> ) |                                  |                 |              |
|--------------|---|--|---|---|----------------------------------|-----------------|--------------|
|              |   |  |   | Before 01/01/2013   | From 01/01/2013 until 31/12/2020 | From 01/01/2021 | Total amount |
| <b>Total</b> | 392,779   | 221,436  | 43,005                                      | 89,290  | 39,048                           | 0               | 128,338      |

#### E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

| Amount achieved during this monitoring period (t CO <sub>2e</sub> ) | Amount estimated ex ante for this monitoring period in the PDD (t CO <sub>2e</sub> ) |
|---|--|
| 128,338   | 1,207,486  |

##### E.5.1. Explanation of calculation of “amount estimated ex ante for this monitoring period in the PDD”

>>

Estimated Emission Reduction according to PDD = 190,876 tCO<sub>2e</sub> per annum  
Total number of days in this monitoring period = 2,309 days

The ex-ante estimated ER for the current monitoring period has been calculated by factorizing the annualized projected ER value for the equivalent days of the current monitoring period.

$$= (190,876 * 2309) / 365 = 1,207,486 \text{ tCO}_2\text{e}$$

**E.6. Remarks on increase in achieved emission reductions**

&gt;&gt;

During the present monitoring period, actual emission reductions achieved are 128,338 tCO<sub>2</sub>e whereas estimated emission reductions was 1,207,486 tCO<sub>2</sub>e. The actual emission reduction is 89.37% less than the estimated figure as per registered PDD.

**E.7. Remarks on scale of small-scale project activity**

&gt;&gt;

The installed capacity of the plant is still 155 MW which is more than 15 MW. The project activity is not a small-scale project activity

## Appendix I: Calibration Details

| Meter No.       | Location Identification   | Make              | Accuracy Class | Meter Sr. No.   | Calibration Frequency | Calibration Date | Due date of Calibration |
|-----------------|---------------------------|-------------------|----------------|-----------------|-----------------------|------------------|-------------------------|
| BPL/GTG1/ MAIN  | GTG Main Meter            | Power Measurement | 0.2            | PK-04-05A102-01 | 3 Year                | 04/05/2010       | 03/05/2013              |
| BPL/GTG1/ CHECK | GTG Check Meter           | Secure Meters Ltd | 0.2            | GJU04775        | 3 Year                | 04/05/2010       | 03/05/2013              |
| BPL/STG1/ MAIN  | STG Main Meter            | Power Measurement | 0.2            | PK-04-05A081-01 | 3 Year                | 04/05/2010       | 03/05/2013              |
| BPL/STG1/ CHECK | STG Check Meter           | Secure Meters Ltd | 0.2            | GJU04776        | 3 Year                | 04/05/2010       | 03/05/2013              |
| BPL/C1          | Main Meter (C1 incomer)   | Secure Meters Ltd | 0.2            | GJU04768        | 3 Year                | 04/05/2010       | 03/05/2013              |
| BPL/C2          | Main Meter (C2 incomer)   | Secure Meters Ltd | 0.2            | GJU04770        | 3 Year                | 04/05/2010       | 03/05/2013              |
| BPL/SST-3       | Main meter (SST3 incomer) | Secure Meters Ltd | 0.2            | GJU04777        | 3 Year                | 04/05/2010       | 03/05/2013              |

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### Document information

| <i>Version</i> | <i>Date</i>     | <i>Description</i>  |
|----------------|-----------------|---|
| 09.0           | 8 October 2021  | Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 03.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN).</li> </ul>   |
| 08.0           | 6 April 2021    | Revision to: <ul style="list-style-type: none"> <li>• Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).</li> </ul>  |
| 07.0           | 31 May 2019     | Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN);</li> <li>• Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period;</li> <li>• Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes;</li> <li>• Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods;</li> <li>• Make editorial improvements.</li> </ul> |
| 06.0           | 7 June 2017     | Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN);</li> <li>• Make editorial improvements.</li> </ul>   |
| 05.1           | 4 May 2015      | Editorial revision to correct version numbering.  |
| 05.0           | 1 April 2015    | Revisions to: <ul style="list-style-type: none"> <li>• Include provisions related to delayed submission of a monitoring plan;</li> <li>• Provisions related to the Host Party;</li> <li>• Remove reference to programme of activities;</li> <li>• Overall editorial improvement.</li> </ul>   |
| 04.0           | 25 June 2014    | Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1;</li> <li>• Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>;</li> <li>• Editorial improvement.</li> </ul>  |
| 03.2           | 5 November 2013 | Editorial revision to correct table in page 1.  |

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| <i>Version</i> | <i>Date</i>     | <i>Description</i>  |
|----------------|-----------------|---|
| 03.1           | 2 January 2013  | Editorial revision to correct table in section E.5.   |
| 03.0           | 3 December 2012 | Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB 70, Annex 11). |
| 02.0           | 13 March 2012   | Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).  |
| 01.0           | 28 May 2010     | EB 54, Annex 34. Initial adoption.  |

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Decision Class: Regulatory  
Document Type: Form  
Business Function: Issuance  
Keywords: monitoring report

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