



MONITORING REPORT

CARBON OFFSET UNIT (CoU) PROJECT



Title: Chilwaria Biomass Grid Supply Power Project, Bahraich, Uttar Pradesh

UCR PROJECT ID: 266

MR Version 1.0

Date of MR: 27/01/2023

1st Monitoring Period: 01/01/2013 to 31/12/2021 (09 Years, 0 Months)

1st Crediting Period: 01/01/2013 to 31/12/2021



Monitoring Report (MR) CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION

Title of the project activity	Chilwaria Biomass Grid Supply Power Project, Bahraich, Uttar Pradesh
Scale of the project activity	Large Scale
UCR PROJECT ID	266
Completion date of the MR	27/01/2023
Project participants	<u>Project Proponent:</u> Simbhaoli Sugars Limited (SSL) <u>Aggregator:</u> M/S Gram Vikas Trust , Gujarat, UCR Seller #741215693
Host Party	India
Applied methodologies and standardized baselines	CDM UNFCCC Methodology ACM0006: Grid connected renewable electricity generation (Ver.16.0) UCR Standard for Baseline Grid Emission Factor
Sectoral scopes	01 Energy industries (Renewable/NonRenewable Sources)
Calculated amount of annual average GHG emission reductions	2013: 4150 tCO ₂ (4150 CoUs)
	2014: 55302 tCO ₂ (55302 CoUs)
	2015: 49283 tCO ₂ (49283 CoUs)
	2016: 41372 tCO ₂ (41372 CoUs)
	2017: 19702 tCO ₂ (19702 CoUs)
	2018: 58515 tCO ₂ (58515 CoUs)
	2019: 47592 tCO ₂ (47592 CoUs)
Calculated total GHG emission reductions this monitoring and crediting period	2020: 26306 tCO ₂ (26306 CoUs)
	2021: 16917 tCO ₂ (16917 CoUs)
Calculated total GHG emission reductions this monitoring and crediting period	319139 tCO₂ (319139 CoUs)

SECTION A. Description of project activity

A Purpose and general description of Carbon offset Unit (CoU) project activity >>

The project **Chilwaria Biomass Grid Supply Power Project, Bahraich, Uttar Pradesh** is located at Block: Chilwaria, District: Bahraich, State: Uttar Pradesh (UP), India – Pin: 271801

The details of the UCR project activity are as follows:

A.1 Purpose of the project activity:

The Chilwaria Biomass Grid Supply Power Project, Bahraich, Uttar Pradesh (UCR Project Activity) involves the renewable biomass (bagasse) based electricity generation within the Chilwaria Sugar Mills Ltd (CSML), which is a unit of Simbhaoli Sugars Mills Ltd. The purpose of the project activity is to generate electricity using renewable biomass with grid supply and thereby reducing GHG emissions by displacing fossil fuel dominated grid based electricity with biomass based renewable electricity. The commissioning date of this UCR project activity is the date of first commercial supply of power to the grid on **01/02/2008 (as per the PPA dated 21/03/2006)**.

Hence, the project activity is a grid-connected biomass (bagasse based) cogeneration power plant with a high pressure steam-turbine configuration. The high pressure boilers are fired by bagasse, a biomass by-product from the sugar manufacturing process, to generate steam which in turn is fed to the steam turbine to generate power. The overall business is integrated with alcohol distillation and power generation. The power co-generation units generate biomass based power for captive consumption of the sugar plant and the sale of surplus power to the state grid.

Renewable biomass power and steam generated from the cogeneration unit is supplied to the sugar plant for captive use, with the surplus power being exported to the UP state grid (132 kV Grid Substation Bahraich) under a long term PPAs (1 & 2 as in Annex I) at the published rate for bagasse cogeneration.

The UCR project activity currently involves two biomass boilers of 80 TPH each (one dumping grate and one retrofitted with a traveling grate), a bleed and back-pressure turbine with rated capacity of **20 MW**, a condensing extraction and bleed-type steam turbine-driven generator set with a rated capacity of **18 MW** and an old **12MW** turbine that operated till June 2013 within the project boundary.

Hence the total installed capacity during the first monitoring period (this report) is **50MW** for the period 2013-2021. The start date of the UCR project activity is the date of commercial power supply to the state grid on **01/02/2008**

A.2. Location of project activity >>

Block: Chilwaria

Road: Gonda Road,

District: Bahraich,

State: Uttar Pradesh,

Country India

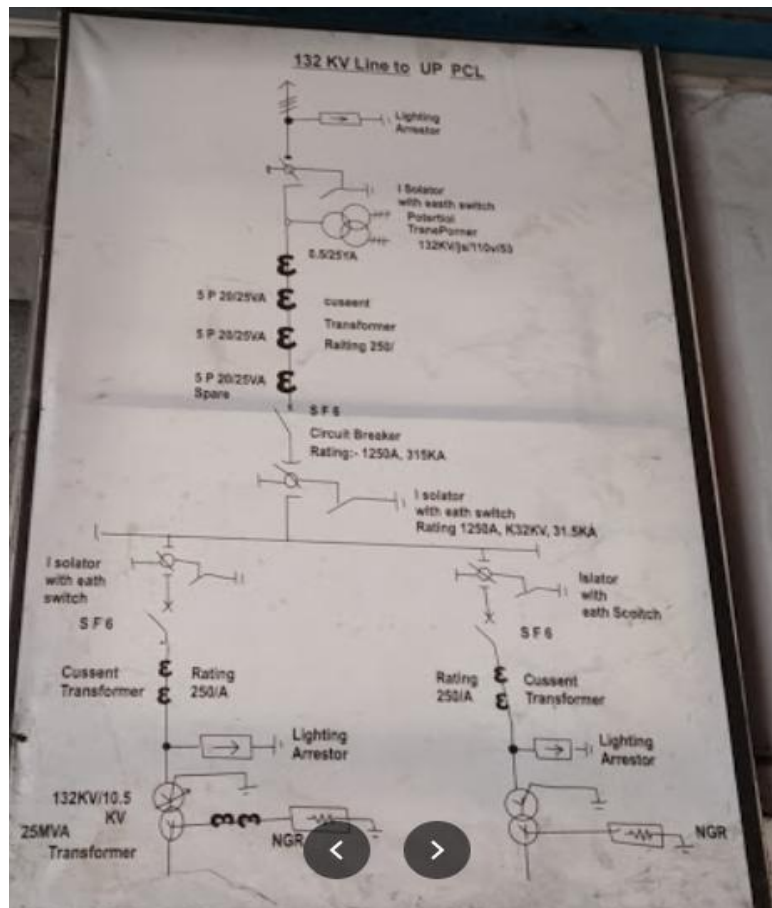
Latitude: 27° 30' 40.644" N

Longitude: 81° 41' 11.94" E



A.3. Technologies/measures >>

The UCR project activity is a grid-connected bagasse based cogeneration power plant with a high pressure steam-turbine configuration. The UCR project activity is the electricity generation capacity and the installation of facilities for allowing the export of electricity to the regional grid. The operation of bagasse based power plants for captive steam and electricity generation is common amongst the sugar industry. It is therefore fair to say that these options are consistent with the applicable laws and regulations as demonstrated by existing practices. There is no policy in India that mandates the generation of electricity **for grid supply from bagasse**, hence this is a voluntary project activity. The policy frameworks for bagasse based grid electricity supply are governed by the state electricity regulatory commissions which detail the terms of power purchase agreements for such investments.



The high pressure boilers are fired by bagasse, a by-product from the sugar manufacturing process to generate steam, which in turn powers the steam turbine to generate power.

The technology of biomass residue based high steam pressure power generation itself is known and in use in India. The use of high pressure system allows for increased efficiency levels for electricity generation.

Power is generated and supplied in the sugar season and off-season at 11 kV and stepped-up on-site to 132 kV before being transmitted to the nearby UPPCL sub-station located at Simbhaoli.

Boiler Details		
Date of Commissioning	2006	2008
Capacity (TPH)	80	80
Output Temp (°C)	510	510
Output Pressure (kg/cm ²)	87	87
Feed Water Temp (°C)	110	110

Turbine Details			
Date of Commissioning	2007	2008	2014
Capacity (MW)	12	20	18
Inlet Stem Temp (°C)	410	510	510
Inlet Steam Pressure (kg/cm ²)	45	87	87

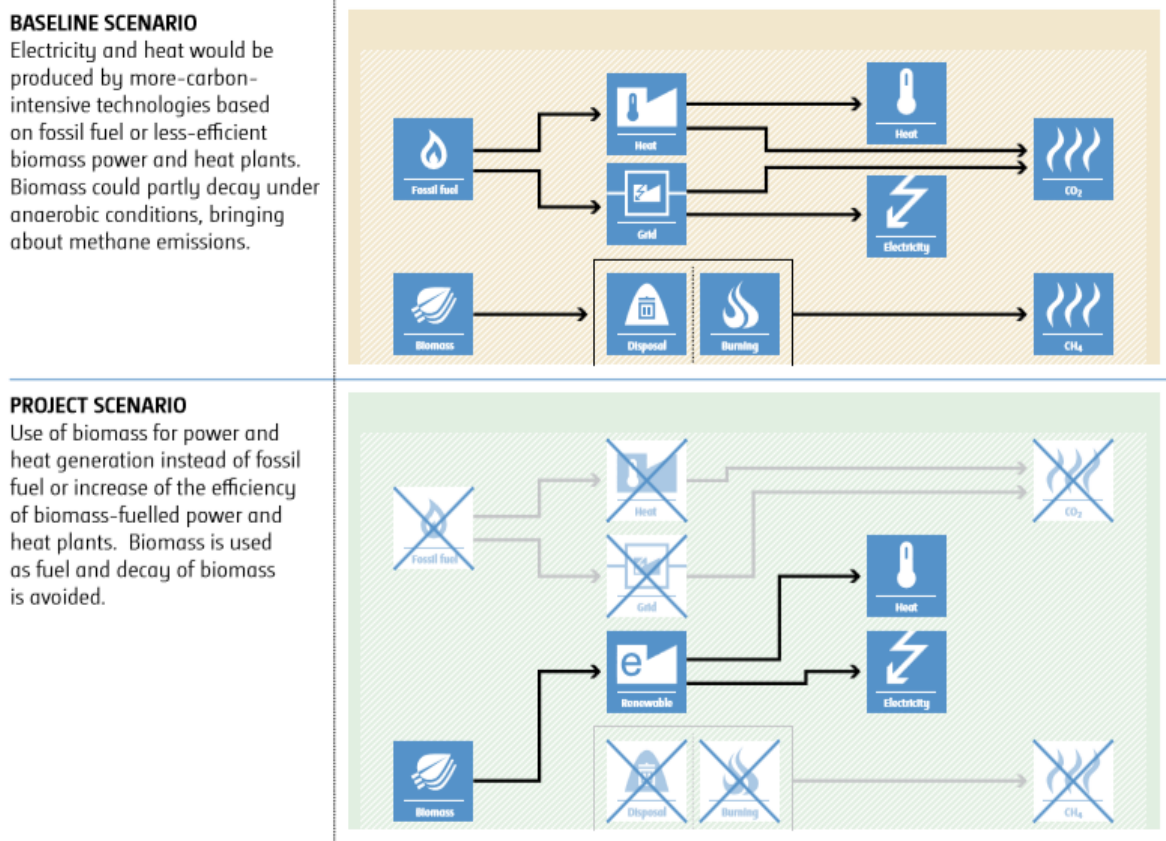
A.4. Parties and project participants >>

Project activity does not involve any public funding from Annex I Party, which leads to the diversion of the official development assistance.

Party (Host)	Participants/Aggregator
India	<u>Project Proponent:</u> Simbhaoli Sugar Mills Limited <u>Aggregator:</u> M/S Gram Vikas Trust , Gujarat, UCR Member #741215693 Email: gvtbiogas@gmail.com

A.5. Baseline Emissions>>

ACM0006 Electricity and heat generation from biomass



The approved baseline methodology has been referred from the indicative simplified baseline and monitoring methodologies for selected large scale UNFCCC CDM project activities that involve generation of power and heat in thermal power plants, including cogeneration plants using biomass.

Typical activities under ACM 0006 are new plants, capacity expansions, energy efficiency improvements or fuel switch projects.

The applicable methodology and simplified modalities and procedures for small scale CDM project activities is “the baseline scenario is displacement of more-GHG-intensive electricity generation in grid.”

Emission coefficient of fuel used in the baseline scenario

The CO₂ emission factor for grid connected power generation in year y calculated using UCR Standard emission factor is 0.9 tCO₂/MWh for the period 2013-2021.

The applicable methodology and simplified modalities and procedures for small scale CDM project activities, states that “The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power

plants and by the addition of new generation sources into the grid.”

Emission coefficient of fuel used in the baseline scenario

The CO₂ emission factor for grid connected power generation in year y calculated using UCR Standard emission factor is 0.9 tCO₂/MWh.

A.6. Debundling>>

This project is not a debundled component of a larger registered carbon offset project activity.

SECTION B. Application of methodologies and standardized baselines

B.1. References to methodologies and standardized baselines >>

SECTORAL SCOPE - 01 Energy industries (Renewable/Non-renewable sources)

TYPE I - Renewable Energy Projects (Large Scale)

UCR Positive List Environmental Additionality

SCALE – Large Scale

CATEGORY- *ACM0006 Large-scale Consolidated Methodology*

Electricity and heat generation from biomass, Version 16.0

This methodology is applicable to project activities that operate biomass (co-)fired power and-heat plants. The project activity includes the installation of new plants at a site where currently power or heat generation occurs. The new plant replaces or is operated next to existing plants (capacity expansion projects). Project types included under this methodology are co-generation of power and heat using biomass. Typical activities include capacity expansions, as is the the current UCR project activity.

UCR CoU Standard is used to determine the baseline grid emission factor for the 2013-2021 period.

B.2. Applicability of methodologies and standardized baselines >>

The project activity is a power generation project using a biomass (bagasse) and displaces CO2 emissions from electricity generation in power plants that are displaced due to the project activity. Since the project activity utilises biomass (bagasse) for the generation of power and supplies it to the local grid, it displaces fossil fuel (coal), and hence it meets the primary applicability criteria of the methodology.
The project activity is a power-and-heat plant that encompasses cogeneration plants, i.e. power-and-heat plant in which at least one heat engine simultaneously generates both process heat and power. The total installed capacity of project activity is 50MW which is acceptable as per the applied large scale methodology.
The installation of a new biomass residue fired power generation unit, which replaces or is operated next to existing power generation capacity fired with either fossil fuels or the same type of biomass residue as in the project plant (power capacity expansion projects) is also included in this methodology.
For the purposes of this methodology, heat does not include waste heat, i.e. heat that is transferred to the environment without utilization, for example, heat in flue gas, heat transferred to cooling towers or any other heat losses.
The biomass used by the project plant is not stored for more than one year. The biomass used by the project plant is not processed chemically or biologically (e.g. through esterification, fermentation, hydrolysis, pyrolysis, bio- or chemical degradation, etc.) prior to combustion.
The Project Activity uses biomass residues from a production process (e.g. production of sugar), and the implementation of the project does not result in an increase of the processing capacity of (the industrial facility generating the residues) raw input (e.g. sugar) or in other substantial changes (e.g. product change) in this process

The project activity unit does not co-fire fossil fuel and/or does not exceed the limit of 25% co-firing fossil fuel criteria as per the UCR Protocol for such projects.
Biomass generated power is used for direct grid supply and for meeting the captive needs at the facility. The project activity involves the grid-connected bagasse based electricity generation capacity involving the installation of facilities for allowing the export of electricity to the regional grid
Biomass is not sourced from dedicated plantations. The existing installed turbo-generators are fired by bagasse, a by-product of the sugarcane processing and a biomass residue
Bagasse is burnt in boilers as generated from the sugar mill and does not require any specific technology for its preparation before combustion. No fuel preparation equipment has been installed at site for preparation of bagasse. Hence no significant energy quantities are required to prepare the biomass residues for fuel combustion.
The project activity also does not include any GHG emissions related to the decomposition or burning of biomass. The baseline heat emissions for the project activity are not included in the project boundary nor does it claim for emission reductions from heat.

B.3. Applicability of double counting emission reductions >>

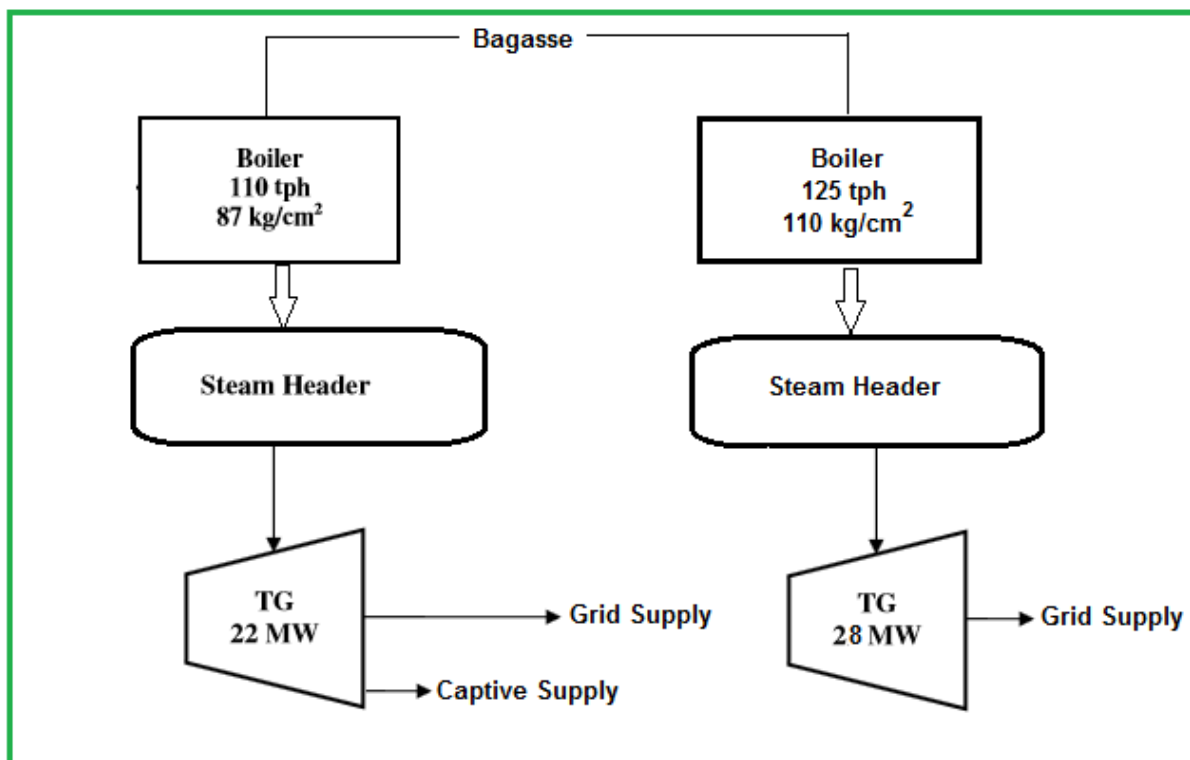
The biomass boiler and condensing turbo-generator unit have unique IDs, which are visible on the unit. The calibration of Meters & Metering for electricity exported to the grid is implemented according to national standards and rules (details provided in Section B.8.). All the records are documented and maintained by the project proponent. The details of the same are provided to the UCR verifier during the verification process.

The biomass boilers and turbines are constructed by the project proponent within the project boundary. The biomass boilers, turbines and meters have unique IDs, which is visible on the units. This UCR project activity has never been issued voluntary carbon credits for the current 2013-2021 vintage years and there is no double counting of the credits. Additionally, the same has been stated in the undertaking provided in the Double Counting Avoidance Assurance Document (DAA) by CSML.

B.4. Project boundary, sources and greenhouse gases (GHGs)>>

The project boundary includes the physical, geographical site(s) of:

(a) the project power plant and all power plants connected physically to the electricity system that the project activity is connected to.



Leakage Emissions (LE_y)

Leakage emissions is not applicable as the project activity does not use technology or equipment transferred from another activity.

Hence LE_y = 0

	Source	GHG	Included?	Justification/Explanation
Baseline	GHG Emissions from fossil fuel in Grid Baseline Power Generation	CO ₂	Included	Major source of GHG emissions
		CH ₄	Excluded	Excluded for simplification. This is conservative
		N ₂ O	Excluded	Excluded for simplification. This is conservative

	Uncontrolled burning or decay of surplus biomass residue	CO ₂	Excluded	Excluded for simplification. This is conservative
		CH ₄	Excluded	Excluded for simplification. This is conservative
		N ₂ O	Excluded	Excluded for simplification. This is conservative
	Emissions from Biomass Project Activity	CO ₂	Excluded	No fossil fuel / electricity is consumed at the project site due to the project activity. No biomass residue from off-site will be used for the project activity.
	On-site fossil fuel and electricity consumption due to the project activity (stationary or mobile)			Excluded for simplification. This is conservative
	Off-site transportation of biomass residue	CH ₄	Excluded	No fossil fuel / electricity is consumed at the project site due to the project activity. No biomass residue from off-site will be used for the project activity
	Combustion of biomass residue for electricity and / or heat generation			Excluded for simplification. This is conservative
	Storage of biomass residue	N ₂ O	Excluded	Excluded for simplification. This is conservative

Project Emissions (PE_y)

The project emissions (PE_y) under the methodology may include
CO₂ emissions from transportation of biomass residue to the project site,
CO₂ emissions from on-site consumption of fossil fuels due to project activity,
CO₂ emissions from electricity consumption at the project site that is attributable to the project activity and
CH₄ emissions from combustion of biomass.

where

PE_{Ty} = are the CO₂ emissions during the year y due to transport of the biomass to the project plant in tons of CO₂,

PE_{FFCO₂, y} = are the CO₂ emissions during the year y due to fossil fuels co-fired by the generation facility in tons of CO₂,

PE_{EC,y} = are the CO₂ emissions during the year y due to electricity consumption at the project site that is attributable to the project activity in tons of CO₂,

GWP_{CH₄} = is the Global Warming Potential for methane valid for the relevant commitment period and,

PE_{Biomass,CH₄,y} = are the CH₄ emissions from the combustion of biomass during the year y.

The proposed project activity does not have any CO₂ emissions due to off-site transportation of

biomass, or from fossil fuel co-firing and from electricity consumption at site. The project activity also doesn't include the CH₄ emissions from the combustion of biomass.

Hence,

$$PE_{T,y} = 0,$$

$$PEFF_{CO_2,y} = 0,$$

$$PE_{EC,y} = 0 \text{ and,}$$

$$PE_{Biomass,CH_4,y} = 0.$$

Therefore, $PE_y = 0$.

B.5. Establishment and description of baseline scenario >>

The baseline scenario identified at the PCN stage of the project activity is:

Renewable energy technologies that displace technologies using fossil fuels, wherein the simplified baseline is the *fuel consumption of the technologies that would have been used in the absence of the project activity, times an emission factor for the fossil fuel displaced.*

The baseline emissions due to displacement of electricity are determined by net quantity of electricity generation as a result of the project activity (incremental to baseline generation) during the year y in MWh times the CO₂ emission factor for the electricity displaced due to the project activity during the year y in tons CO₂/MWh

Given that steam and electric power generation for internal consumption is part of the present project activity, emission reductions are only claimed from on-site incremental power generation that is injected to the grid. Therefore, the baseline scenario is the emission of GHG from the present electricity generation mix of the UPPCL grid in the northern region.

Emission Reductions (ER_y) The emission reduction due to the project activity is calculated as the difference between the baseline emissions and the sum of the project emissions and the leakage:

$$ER_y = BE_y - (PE_y + LE_y)$$

BE_y= Baseline emissions in year y (t CO_{2e})

As mentioned in the methodology the baseline emissions are calculated as follows:

$$BE_y = EG_{pj,y} * EF_{grid,y}$$

Where:

EG_{grid,y} = Quantity of net electricity generation that is fed into the local grid as a result of the implementation of the project activity in year y (MWh)

EF_{grid,y} = The CO₂ emission factor for grid connected power generation in year y calculated using UCR Standard emission factor (0.9 tCO₂/MWh).

PE_y = Project activity emissions = 0

LE_y = Leakage emissions = 0

For this methodology, it is assumed that transmission and distribution losses in the electricity grid are not influenced significantly by the project activity and are therefore not accounted for.

Year	ER y (tCO ₂ eq)
2013	4150.00
2014	55302.00
2015	49283.00
2016	41372.00
2017	19702.00
2018	58515.00
2019	47592.00
2020	26306.00
2021	16917
Total	319139

B.6. Prior History>>

The project activity has not applied for carbon credits registration in the past or to any other GHG program for generation or issuance of carbon offsets or credits for the current crediting period.

B.7. Changes to start date of crediting period >>

There is no change in the start date of crediting period.

B.8. Permanent changes from PCN monitoring plan, applied methodology or applied standardized baseline >>

There are no permanent changes from registered PCN monitoring plan and applied methodology

B.9. Monitoring period number and duration>>

Monitoring Period: 01

1st Monitoring Period: 9 Years, 0 Months

1st Crediting Period: 01/01/2013 to 31/12/2021

1st UCR Monitoring Period: 01/01/2013 to 31/12/2021 (both days inclusive)

B.8. Monitoring plan>>

The monitoring of electricity consists power generation from the turbine generators and the auxiliary consumption of power plants. All auxiliary units at the power plant are metered and there is also a main meters attached to each turbine generator to determine their total generation. The PP has been provided identical sets of ABT compliant energy meters, with the facility for downloading data to measure the quantity and time details of the power exported from and imported by the PP, conforming to the specifications approved by UPPCL, along with all necessary associated equipment. These meters are installed and maintained by UPPCL. These meters are installed at the grid substation of UPPCL at the interconnection point. One set of export/import meter is termed as

the Bill Meter and other set will serves as the Check Meter. The complete metering system consisting of meters and transformers conform to the 0.2 accuracy class, individually and comply with the technical standards, accuracy and calibration requirements of the Indian Electricity Rules and the specifications of the Bureau of Indian Standard and the guidelines of CEA for installation of meters. The meters have AMR facility.

Meter	Serial No	Make	Last Calibration
Bill Meter	APM42425	Secure	19/11/2022
Check Meter	APM42426	Secure	19/11/2022

The total amount of bagasse generated by the sugar plant is calculated from the amount of cane crushed in the season (monitored value), which is obtained from the RT8C records.

Bagasse has been calculated using the formula:

Bagasse = Cane + Added water – Juice

This is cross checked using an annual energy balance using the monitored steam values. The total heat generated as well as the heat generated by the project activity is monitored using the temperature and pressure values and calculating the enthalpies of the steam generated and the feed water using standard steam charts/tables. The project activity has ISO 9001:2008/20 and ISO 14001:2004 quality assurance and environmental management system implemented, therefore the management system of the UCR project activity is in place with the responsibilities properly identified and in place. In order to verify quality, the project activity works in accordance with a quality assurance procedure that are embedded in their management system, which establishes that the operational and management structure is implemented. An internal audit for the data pertaining to the project activity can be checked on site to confirm the effectiveness of the management system. Monitoring shall consist of metering the electricity generated by the renewable technology. For projects where only biomass or biomass and fossil fuel are used the amount of biomass and fossil fuel input is monitored. For projects consuming biomass a specific fuel consumption of each type of fuel (biomass or fossil) to be used should be specified ex-ante. The consumption of each type of fuel shall be monitored.

As fossil fuel is not used for the generation of electricity, the electricity metered need not be adjusted to deduct electricity generation from fossil fuels using the specific fuel consumption and the quantity of fuel consumed. The PP has the responsibility of the monitoring plan implementation. In this MR, emission factor of the project activity is determined as per the UCR CoU guidelines. Therefore the electricity supplied to the grid by the project activity is defined as the key data to be monitored. The monitoring plan is designed first of all to focus on monitoring of the electricity output of the project activity. The second critical data to be monitored is coal consumption (which in this case is nil). Therefore the second focus of the monitoring plan is ignored (i.e. coal consumption data). The other elements following the monitoring methodology concern the comparison of values using two different approaches, and choosing the more conservative of two values.

As per the methodology,

Monitoring consists of metering the electricity generated by the renewable technology.

The amount of biomass and fossil fuel input is monitored.

For projects consuming biomass a specific fuel consumption of each type of fuel (biomass or fossil) to be used should be specified ex-ante.

The consumption of each type of fuel is monitored. Since fossil fuel is used, the electricity generation metered should be adjusted to deduct electricity generation from fossil fuels using the specific fuel consumption and the quantity of fossil fuel consumed.

Data and parameters measured ex post or during the monitoring period

Data/Parameter	MWh/annum																						
Data unit	MWh																						
Description	Total export to UPPCL in kwh – monthly joint meter reading (JMR) statement; summed for annual figure in MWh																						
Source of data Value(s) applied	<table border="1"> <thead> <tr> <th>Year</th><th>MW h</th></tr> </thead> <tbody> <tr><td>2013</td><td>4611.60</td></tr> <tr><td>2014</td><td>61447.68</td></tr> <tr><td>2015</td><td>54759.36</td></tr> <tr><td>2016</td><td>45969.12</td></tr> <tr><td>2017</td><td>21892.08</td></tr> <tr><td>2018</td><td>65016.96</td></tr> <tr><td>2019</td><td>52880.64</td></tr> <tr><td>2020</td><td>29229.18</td></tr> <tr><td>2021</td><td>18797.74</td></tr> <tr> <td>Total</td><td>354604.35</td></tr> </tbody> </table>	Year	MW h	2013	4611.60	2014	61447.68	2015	54759.36	2016	45969.12	2017	21892.08	2018	65016.96	2019	52880.64	2020	29229.18	2021	18797.74	Total	354604.35
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2018	65016.96																						
2019	52880.64																						
2020	29229.18																						
2021	18797.74																						
Total	354604.35																						
Measurement methods and procedures	The Kwh data is cross-checked against relevant electricity sales receipts and/or records from the grid for quality control. Since the data required to be monitored consists of JMR by the project owner and the grid company, the JMR is used as guidance on data collection and documentation. The reading of the JMR (Bill Meter) forms the basis for the energy account, provided that the magnitude (i.e. absolute value) of the difference between the Check and Bill Meter reading is within one percent of the Bill Meter reading. Calibration of Meters & Metering is implemented according to national standards and rules. And all the records are documented and maintained by the project owner for DOE's verification. Calibration, inspection and testing of meters and the associated equipment is the responsibility of UPPCL, who bears the related costs.																						
Monitoring frequency	Meter readings are daily, while the billing is monthly																						
Purpose of data	Baseline Emissions. The net quantity of electricity generated in the project plant during the year y can be compared with the monthly sales to the connected grid and actual supplied electricity can be verified.																						

Data / Parameter:	Tonnes/annum				
Data unit:	Tonnes coal				
Description:	Total used – computerised daily feed values				
Value(s) applied	<table border="1"> <thead> <tr> <th>Year</th><th>Tonnes</th></tr> </thead> <tbody> <tr> <td>2013-2021</td><td>0</td></tr> </tbody> </table>	Year	Tonnes	2013-2021	0
Year	Tonnes				
2013-2021	0				
Measurement procedures (if any):	-				
Monitoring frequency:	Monitored continuously.				
Any comment:	Electronic data sheets and invoices maintained-				

Data / Parameter:	Tonnes/year																				
Data unit:	Tonnes Biomass																				
Description:	Total used – computerised daily feed values																				
Measurement procedures (if any):	Belt weigher -																				
Value(s) applied	<table border="1"> <thead> <tr> <th>Year</th><th>Quantity of Biomass (t)</th></tr> </thead> <tbody> <tr><td>2013</td><td>259451</td></tr> <tr><td>2014</td><td>164699</td></tr> <tr><td>2015</td><td>57899</td></tr> <tr><td>2016</td><td>176359</td></tr> <tr><td>2017</td><td>91507</td></tr> <tr><td>2018</td><td>185871</td></tr> <tr><td>2019</td><td>231082</td></tr> <tr><td>2020</td><td>124619</td></tr> <tr><td>2021</td><td>92462</td></tr> </tbody> </table>	Year	Quantity of Biomass (t)	2013	259451	2014	164699	2015	57899	2016	176359	2017	91507	2018	185871	2019	231082	2020	124619	2021	92462
Year	Quantity of Biomass (t)																				
2013	259451																				
2014	164699																				
2015	57899																				
2016	176359																				
2017	91507																				
2018	185871																				
2019	231082																				
2020	124619																				
2021	92462																				
Monitoring frequency:	-Monitored continuously by PP. The quantity of bagasse is being measured daily through the belt weigher system installed at the project activity and stock changes in the yard. The daily records are aggregated monthly and reported in the monitoring report after adjusting it for the moisture content. The monitoring approach has been found consistent with the accepted revised monitoring plan which requires monthly reporting																				
QA/QC procedures:	-The values can be cross checked against the daily purchase records and stocks records. RT8 (C) form (Final manufacturing report) for sugar season 2013-2021 submitted to Central Excise Department for taxation purposes.																				
Any comment:	-Baseline emission calculation.. The entire quantity of biomass residue (bagasse) combusted in the project activity is generated in the crushing process of the cane in the sugar industry where the project activity is located. The reported consumption of bagasse can be crosschecked with the plant logbooks. It is noteworthy to mention here this parameter is not used in the determination of emission reductions but as a crosscheck for EG project plant, y, EG total,y, Q project plant,y and Q total,y. It is also confirmed that it is industrial practice to keep a small amount of bagasse for the commencement of boiler operation in next season, which usually has a gap of 6/7 months (due to cropping season of cane) and therefore does not exceed one year in any case. The quantity of bagasse combusted in the project activity serves the purpose of cross check to assess the electrical efficiency of plant and in no manner used in the emission reduction. Further it is confirmed that the entire quantity of biomass residue (bagasse) is generated in house and therefore does not create project emissions (on account of transportation or leakage).																				

Data / Parameter:	Fixed
Data unit:	Kg Biomass/kWh
Description:	Specific Biomass consumption
Measurement procedures (if any):	Calculated from CSML computer data. These results are obtained from external lab and therefore do not have any measurement equipment under the scope of calibration by the PP
Value(s) applied	1.13 kg/kWh
Monitoring frequency:	Default
Comment:	Baseline emission calculation -

Data / Parameter:	Fixed
Data unit:	Kg coal/kWh
Description:	Specific Coal consumption
Source of data:	Calculated from Neeraj Power Pvt Ltd computer data
Value(s) applied	1.19 kg/kWh
Measurement procedures (if any):	<i>Default</i>
Monitoring frequency:	-
QA/QC procedures:	-
Any comment:	Fossil fuel electricity generation from total grid supply calculations.

Data / Parameter:	Moisture content of biomass residues
Data unit:	% water content
Description	Moisture content of each biomass residue k
Measured /Calculated /Default:	Measured
Source of data:	On-site measurements. The moisture content is measured daily and based on the analysis conducted at laboratory in house. The daily results are determined by science graduates who are trained and follow procedure as defined in the approved revised monitoring plan and internal SOPs part of management system. The monthly average values were used for reporting purpose in the monitoring report.
Value(s) of monitored parameter:	50.89
Indicate what the data are used for	Baseline emissions
Monitoring equipment (type, Calibration frequency, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Type: Weighing balance, Calibration frequency: Annually The weighing balance used for the measurement calibrated in line with the national standards

ANNEX 1

GENERATING EQUIPMENT:

BOILERS: 77 TPH 43 ata (Existing) + 110 TPH 87 ata (Proposed)

TURBO-GENERATOR SETS: 3x3 MW i.e. 9MW Existing
(Commissioned between 1993 to 2003)
37 MW Proposed (22 MW+15 MW)

CO-GENERATION VOLTAGE: 10.5 KV

SPEED: ---

TYPE OF GOVERNOR: Electro

TRANSFORMER: 10.5 KV/132 KV

(INITIAL OPERATION DATE) : January, 2008

Commercial Operation : February, 2008



[Signature]
CE. (P.P.A.)
U. P. P. C. L.
Shakti Bhawan Extn.
Lucknow.

PPA 1 extract

GENERATING EQUIPMENT: :

BOILERS: : 77TPH, 43 ata (existing) + 80 TPH 87 Ata
(Existing)+80 TPH 87 Ata (Proposed)

TURBO-GENERATOR SETS: : 1x12 MW TG Set- Existing
1x 20 MW TG Set-Existing
1x 18 MW TG Set (Proposed)

CO- GENERATION VOLTAGE: : 10.5 KV

SPEED: :

TYPE OF GOVERNOR: : Electro

TRANSFORMER: : Switchyard 25MVA Transformer
10.5 KV/132 KV (proposed)

(INITIAL OPERATION DATE) : 1x 12 MW-01.09.2007

COMMERCIAL OPERATION : 1x20MW - 01.09.2007
1x18MW – 10.05.2014

[Signature]
CE. (P.P.A.)

For SINGHOLI POWER PRIVATE
[Signature]
Managing Director

PPA 2 extract

Latest Calibration Records of Plant Meters

	BAGSON CALIBRATION LAB. PVT. LTD. B-14, DSIDC Complex, Patpar Ganj Industrial Area, Delhi-110082 • Email : lab@bagson.com Ph. : 011-22147878, 22157878, 22167878, 9899897878	CALIBRATION CERTIFICATE OF Energy Meter (18 MW Energy Meter)																					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Certificate No. : CAL/EM/92138</td> <td style="width: 40%;">Calibration done on : 08/10/2022</td> <td style="width: 20%; text-align: right;">Page 1 of 1</td> </tr> <tr> <td>Certificate date : 08/10/2022</td> <td>Next suggested due date : 08/10/2023</td> <td></td> </tr> <tr> <td>Date of receipt of item : 08/10/2022</td> <td>Condition of the item : Ok</td> <td></td> </tr> </table>			Certificate No. : CAL/EM/92138	Calibration done on : 08/10/2022	Page 1 of 1	Certificate date : 08/10/2022	Next suggested due date : 08/10/2023		Date of receipt of item : 08/10/2022	Condition of the item : Ok													
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03. Calibration Results: <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 50%;">1- AC. Voltage test</td> <td style="width: 10%; text-align: center;">:</td> <td style="width: 40%; text-align: center;">Ok</td> </tr> <tr> <td>2- Test of No load</td> <td style="text-align: center;">:</td> <td style="text-align: center;">Ok</td> </tr> <tr> <td>3- Test of starting current condition</td> <td style="text-align: center;">:</td> <td style="text-align: center;">Ok</td> </tr> <tr> <td>4- Power Consumption test</td> <td style="text-align: center;">:</td> <td style="text-align: center;">Ok</td> </tr> <tr> <td>5- Load Test</td> <td style="text-align: center;">:</td> <td style="text-align: center;">Ok</td> </tr> <tr> <td style="text-align: right;">Full Load</td> <td style="text-align: center;">:</td> <td style="text-align: center;">+0.2 %</td> </tr> <tr> <td style="text-align: right;">Half Load</td> <td style="text-align: center;">:</td> <td style="text-align: center;">+0.1 %</td> </tr> </table>			1- AC. Voltage test	:	Ok	2- Test of No load	:	Ok	3- Test of starting current condition	:	Ok	4- Power Consumption test	:	Ok	5- Load Test	:	Ok	Full Load	:	+0.2 %	Half Load	:	+0.1 %
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**BAGSON CALIBRATION LAB. PVT. LTD.**

B-14, DSIDC Complex, Patpar Ganj Industrial Area,
Delhi-110092 • Email : lab@bagson.com
Ph. : 011-22147878, 22157878, 22167878, 989897878

CALIBRATION CERTIFICATE OF

Steam Flow meter
(BL1-FT-02)

Certificate No. : CAL/WFM/92133	Calibration done on : 08/10/2022	Page 1 of 1
Certificate date : 08/10/2022	Next suggested due date : 08/10/2023	
Date of receipt of item : 08/10/2022	Condition of the item : Ok	

Calibrated for M/s.

Simbhaoli Power Pvt. Ltd

Power Division Compound
Gonda-Bahraich Road,
Chilwaria, Distt.: Bahraich.

**01. Identification on UUC (Unit Under Calibration)**

Size / Range	0 to 10000 mmwc	Ref. Standard / Procedure	Indian Standard
Least count	1 mmwc	BCL Identification mark	CAL/92133
Manufactured by	Siemens	Calibration performed at	LAB.
Manufacturer Sr. No.	7MF4433-1FA02-2AC1-Z	Model / Type	Sitrans P Pedsep
Party ID mark		Location	Boiler No-01

Environmental conditions(s) : Temperature: 25 $\pm$ 2 Degree C. Relative Humidity : 50 $\pm$ 10%**02 Standard & major equipment(s):**

Standard(s) & Equipments	Range / Serial No.	Calibrating Agency	Traceability Cert. No.	Certificate Date	Valid Up to
Digital Pressure Gauge	-1 to 10 bar/D 11B241	R & D Instrument Services	CS/21/LB/MP/755-02	15/03/2022	15/03/2023

THE STANDARDS USED ARE TRACEABLE TO NATIONAL STANDARDS.**03. Calibration Results:**

Value on UUC in mmwc	Standard Value Observed in mmwc	Error in mmwc
0	0.000	0.000
1000	1000.000	0.000
3000	3000.002	-0.002
5000	5000.004	-0.004
8000	8000.005	-0.005
10000	10000.006	-0.006

Uncertainty of measurement : $\pm$ 2.0 mmwcThe reported uncertainty is at coverage factor $k=2$ which corresponds to a coverage probability of approximately 95% for a normal distribution.

- The Calibration results in this certificate are valid at the time of and under the stated conditions of measurements.
- This report should not be reproduced except in full without our prior permission in writing.
- This certificate relates only to the item Calibrated.

Calibrated By :**Authorized By :**

JYOTI K SHARMA

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Ph. : 011-22147878, 22157878, 22167878, 989897878

CALIBRATION CERTIFICATE OF

Feed Water Flow meter
(BL2-FT-01)

Certificate No. : CAL/WFM/92135	Calibration done on : 08/10/2022	Page 1 of 1
Certificate date : 08/10/2022	Next suggested due date : 08/10/2023	
Date of receipt of item : 08/10/2022	Condition of the item : OK	

Calibrated for M/s.

Simbhaoli Power Pvt. Ltd

Power Division Compound
Gouda-Bahraich Road,
Chilwaria, Dist: Bahraich.

**01. Identification on UUC (Unit Under Calibration)**

Size / Range	0 to 5000 mmwc	Ref. Standard / Procedure	Indian Standard
Least count	1 mmwc	BCL Identification mark	CAL/92135
Manufactured by	Yokogawa	Calibration performed at	LAB.
Manufacturer Se. No.	EJA110E JMS5J-912EB	Model / Type	-----
Party ID mark	-----	Location	Boiler No-02

Environmental condition(s) : Temperature: 25 +/- 2 Degree C, Relative Humidity : 50 +/- 10%

02 Standard & major equipment(s):

Standard(s) & Equipments	Range / Serial No.	Calibrating Agency	Traceability Cert. No.	Certificate Date	Valid Up to
Digital Pressure Gauge	-1 to 10 bar/D 11B241	R & D Instrument Services	CS/21/LB/MP/755-02	15/03/2022	15/03/2023

THE STANDARDS USED ARE TRACEABLE TO NATIONAL STANDARDS.**03. Calibration Results:**

Value on UUC in mmwc	Standard Value Observed in mmwc	Error in mmwc
0	0.000	0.000
1000	1000.002	-0.002
2000	2000.002	-0.002
3000	3000.004	-0.004
4000	4000.005	-0.005
5000	5000.005	-0.005

Uncertainty of measurement : +/- 2.0 mmwc

The reported uncertainty is at coverage factor k=2 which corresponds to a coverage probability of approximately 95% for a normal distribution.



- The Calibration results in this certificate are valid at the time of and under the stated conditions of measurements.
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- This certificate relates only to the item Calibrated.

Calibrated By :

RKS

Authorized By :

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CALIBRATION CERTIFICATE OF

Steam Flow meter
(BL2-FT-02)

Certificate No. : CAL/WFM/92134	Calibration done on : 08/10/2022	Page 1 of 1
Certificate date : 08/10/2022	Next suggested due date : 08/10/2023	
Date of receipt of item : 08/10/2022	Condition of the item : Ok	

Calibrated for M/s.

Simbhaoli Power Pvt. Ltd

Power Division Compound
Gonda-Bahraich Road,
Chilwaria, Distt.: Bahraich.

**01. Identification on UUC (Unit Under Calibration)**

Size / Range	0 to 10000 mmwc	Ref. Standard / Procedure	Indian Standard
Least count	1 mmwc	BCL Identification mark	CAL/92134
Manufactured by	Siemens	Calibration performed at	LAB
Manufacturer Sr. No.	7M14433-11A02-2BC1	Model / Type	Sitrans P Pedsep
Party ID mark	*****	Location	Boiler No-02

Environmental condition(s) : Temperature: 25 +/- 2 Degree C. Relative Humidity : 50 +/- 10%

02. Standard & major equipment(s):

Standard(s) & Equipments	Range / Serial No.	Calibrating Agency	Traceability Cert. No.	Certificate Date	Valid Up to
Digital Pressure Gauge	-1 to 10 bar/D 11B241	R & D Instrument Services	CS/21/LB/MP/755-02	15/03/2022	15/03/2023

THE STANDARDS USED ARE TRACEABLE TO NATIONAL STANDARDS.

03. Calibration Results:

Value on UUC in mmwc	Standard Value Observed in mmwc	Error in mmwc
0	0.000	0.000
1000	1000.000	0.000
3000	3000.002	-0.002
5000	5000.004	-0.004
8000	8000.006	-0.006
10000	10000.005	-0.005

Uncertainty of measurement : +/- 2.0 mmwc

The reported uncertainty is at coverage factor k=2 which corresponds to a coverage probability of approximately 95% for a normal distribution.



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Calibrated By :**Authorized By :**

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Delhi-110092 • Email : lab@bagson.com
Ph : 011-22147878, 22157878, 22167878, 9898897878

CALIBRATION CERTIFICATE OF

Energy Meter
(22 MW Energy Meter)

Certificate No. : CAL/EM/92137	Calibration done on : 08/10/2022	Page 1 of 1
Certificate date : 08/10/2022	Next suggested due date : 08/10/2023	
Date of receipt of item : 08/10/2022	Condition of the item : Ok	

Calibrated for M/s,

Simbhaoli Power Pvt. Ltd

Power Division Compound
Gonda-Bahraich Road,
Chilwaria, Distt : Bahraich,

**01. Identification on UUC (Unit Under Calibration)**

Size / Range	As Per Instrument	Ref. Standard / Procedure	Indian Standard
Least count	As Per Range	BCL Identification mark	CAL/92137
Manufactured by	Satec	Calibration performed at	LAB.
Manufacturer Sr. No.	TG1	Model / Type	*****
Party ID mark	*****	Declared accuracy	*****

Environmental conditions(s) : Temperature: 25 $\pm$ 2 Degree C, Relative Humidity : 50 $\pm$ 10%

02 Standard & major equipment(s):

Standard(s) & Equipments	Range / Serial No.	Calibrating Agency	Traceability Cert. No.	Certificate Date	Valid Up to
Multiproduct calibrator	As per Fluke Catag/2560904	Anshaankan (India) Pvt. Ltd.	AIPL/2022/0596	19/08/2022	19/08/2023

THE STANDARDS USED ARE TRACEABLE TO NATIONAL STANDARDS

03. Calibration Results:

1- AC, Voltage test	:	Ok
2- Test of No load	:	Ok
3- Test of starting current condition	:	Ok
4- Power Consumption test	:	Ok
5- Load Test	:	Ok
Full Load	:	+0.1 %
Half Load	:	-0.1 %

Uncertainty of measurement : $\pm$ 2 %

The reported uncertainty is at coverage factor k=2 which corresponds to a coverage probability of approximately 95% for a normal distribution.



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Ph. : 011-22147878, 22157878, 22167878, 9899897878

CALIBRATION CERTIFICATE OF

Feed Water Flow meter
(BLI-FT-01)

Certificate No. : CAL/WFM/92136	Calibration done on : 08/10/2022	Page 1 of 1
Certificate date : 08/10/2022	Next suggested due date : 08/10/2023	
Date of receipt of item : 08/10/2022	Condition of the item : Ok	

Calibrated for M/s.

Simbhaoli Power Pvt. Ltd

Power Division Compound
Gondi-Bahraich Road,
Chilwaria, Distt : Bahraich.

**01. Identification on UUC (Unit Under Calibration)**

Size / Range	0 to 5000 mmwc	Ref. Standard / Procedure	Indian Standard
Least count	1 mmwc	BCI Identification mark	CAL/92136
Manufactured by	Siemens	Calibration performed at	LAB.
Manufacturer Sr. No.	7MF4433-1EA02-2AC6-Z	Model / Type	Sitrans P Pedsep
Party ID mark	-----	Location	Boiler No-01

Environmental conditions(s) : Temperature: 25 +/- 2 Degree C. Relative Humidity : 50 +/- 10%

02 Standard & major equipment(s):

Standard(s) & Equipments	Range / Serial No.	Calibrating Agency	Traceability Cert. No.	Certificate Date	Valid Up to
Digital Pressure Gauge	-1 to 10 bar/D 11B241	R & D Instrument Services	CS/21/LB/MP/755-02	15/03/2022	15/03/2023

THE STANDARDS USED ARE TRACEABLE TO NATIONAL STANDARDS

03. Calibration Results:

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5000	5000.006	-0.006

Uncertainty of measurement : +/- 2.0 mmwc

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Calibrated By :**Authorized By :**

RKS
RAJKUNTAIR SINGH

[Signature]