



VERIFICATION REPORT FOR

“1.6 MW BUNDLED RICE HUSK BASED
COGENERATION PLANT BY M/S MILKFOOD
LIMITED (MFL) IN PATIALA (PUNJAB) &
MORADABAD (U.P) DISTRICTS”



Document Prepared By LGAI Technological Center, S.A. (Applus+ Certification)

Project Title	1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts
Version	01.1
Report ID	BELL_VCS_VER_8721

Report Title	Verification Report for “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts ”
Client	M/s Milk Food Limited M/s Enen Green Services Private Limited

Pages	80
Date of Issue	22-September-2022
Prepared By	LGAI Technological Center, S.A. (Applus+ Certification)
Contact	Campus UAB – Ronda de la Font del Carme, s/n 08193 Bellaterra – Barcelona (Spain) Tel.:+34 93 567 20 08 Fax.:+34 93 567 20 01 www.appluscertification.com agustin.calle@applus.com carla.debat@applus.com
Approved By	LGAI Technological Center S.A. (Applus+ Certification) VVB Technical Manager – Mr. AgustínCalle de Miguel
Work Carried Out By	Lead Auditor & Technical Expert: Vivek Kumar Ahirwar, Technical Reviewer & Technical Expert: Simon Shen

Summary:

LGAI Technological Center, S.A. (here after referred as Applus+ Certification) has been contracted by M/s Milk Food Limited to conduct the verification of the project “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts”, VCS ID 784, against VCS Standard Version 4.1.

The verification includes confirming the implementation of the monitoring plan of the registered VCS PD and MR (Project ID 784) and the application of the monitoring methodologies as per AMS I.C. version 21: “Thermal Energy production with or without electricity” & AMS I.D version 18: “Grid connected renewable electricity generation”. A Verification remote visit was conducted to verify the data submitted in the monitoring report.

The purpose of this project activity isto utilize rice husk (biomass) available in the region for cogeneration of steam and electricity for captive consumption at two locations of M/s Milk Food Limited viz. Patiala and Moradabad. The Enen Green Services Private Limited is a new project proponent which include in project as VCS Project Consultant & Support for VCS project execution.

A risk based approach has been followed to perform this verification. In the course of verification, 01 Corrective Action request (CARs) and 03 Clarification request (CRs) were raised and successfully closed.00 Forward Action Request (FARs) raised during the validation of renewal crediting period is also closed.

The review of the project design documentation, monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up

interviews and stakeholders have provided Applus+ Certification with sufficient evidence to validate the fulfilment of the stated criteria.

Applus+ Certification confirms that the project is implemented in accordance with the registered VCS PD & MR. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the emission reductions from the project activity “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts” in India during the period 01/01/2021 – 31/12/2021(including both days) amount to 67,742 tonnes of CO₂e.

CONTENTS

1. Introduction	5
1.1 Objective	5
1.2 Scope and Criteria	5
1.3 Level of Assurance	6
1.4 Summary Description of the Project	6
2. Verification Process	8
2.1 Method and Criteria	8
2.2 Document Review	8
2.3 Interviews	8
2.4 Site Inspections	9
2.5 Resolution of Findings	11
2.6 Eligibility for Validation Activities	12
3. Validation Findings	12
3.1 Participation under Other GHG Programs	12
3.2 Methodology Deviations	13
3.3 Project Description Deviations	13
3.4 Grouped Project	13
4. Verification Findings	13
4.1 Project Implementation Status	13
4.2 Safeguards	14
4.3 AFOLU-Specific Safeguards	15
4.4 Accuracy of GHG Emission Reduction and Removal Calculations	15
4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals	15
4.6 Non-Permanence Risk Analysis	73
5. Verification conclusion	74
APPENDIX 1: Document References	76
APPENDIX 2: abbreviations	76
APPENDIX 3: Findings Overview	78
APPENDIX 4: Competency Statements	82

1. INTRODUCTION

1.1 Objective

Applus+ Certification has been contracted by M/s Milk Food Limited (project proponent), to undertake the verification of the renewable energy project titled “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts”(VCS ID- 784) The verifiers have reviewed the GHG data collected to date for the monitoring period from 01/01/2021 – 31/12/2021(both days included) covered in this verification. The objective of this verification is a thorough and independent assessment of registered project activities against the applicable VCS requirement by the VVB. The verification process shall determine whether the proposed project activity complies with the requirements of latest VCS guidelines, applicability conditions of the selected methodology, relevant host country regulations and guidance issued by the VCS Board.

1.2 Scope and Criteria

The scope of the verification was the independent and objective review and ex-post determination of the monitored reductions in GHG emissions from “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts”. The verification of this project was based on the registered project description/01/ & monitoring report /04/ and supporting documents submitted by the project proponent to the verification team. The documents were reviewed against the following guidance and protocols:

VCS Standard: Version 4.1, dated 22/04/2021/17/

Approved methodologies for small-scale CDM Project activities:

AMS I.C, version 21, Title “Thermal Energy production with or without electricity”/10/

AMS I.D, version 18, Title “Grid connected renewable electricity generation”./10/

VCS Program Definitions (v4.1, dated 15/04/2021) /19/

VCS Program Guide, Version 4.0, 19/09/2019 /18/

ISO 14064-3: Specification with guidance for the validation and verification of greenhouse gas assertions, 2006

The verification is not meant to provide any consulting towards the client. However, stated request for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Level of Assurance

The level of assurance of the verification report falls under reasonable assurance engagements as selected by the Client. The verification team verified the complete monitoring data for all the parameters of the monitoring plan and confirms that the reported emission reductions are free from any type of material errors. Materiality for the project is 5%.

1.4 Summary Description of the Project

The project activity utilizes rice husk available in the region for steam and electricity generation for captive consumption in industrial process of MFL. The project undertaken is a bundle of two cogeneration plants of capacity 1.0 MW (with 14TPH steam generation) and 0.6 MW (with 12 TPH steam generation) located at Bahadurgarh, Patiala in the state of Punjab and Mugalpur, Moradabad in the state of Uttar Pradesh respectively. The Enen Green Services Private Limited has joined as a new project proponent in VCS project which provided the VCS project consultancy and support for proper execution and management of VCS project. The project activity results in reductions of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change. The PP has monitored net electricity supplied to the electrical equipment and net steam supplied to process heat requirement during current monitoring period from 01/01/2021 – 31/12/2021. The calculation was assessed by the verification team and deemed as correct. Due to the project activity, the power supply had partially been displaced which was imported from NEWNE grid through respective state electricity grids and the steam generated from coal fired boiler had completely displaced by the new rice husk based co-generation plant.

The project proponent has applied the baseline methodology for small scale project activities AMS-I.D “Grid connected renewable electricity generation”, version 18. The baseline scenario for the proposed project activity is the grid-connected power plants and by the addition of new generation sources into the India national grid. As per CEA database version 15, 0.94193 tCO₂/MWh has been chosen as ex-ante emission factor of national grid of India and it has been used for the calculating the baseline emissions as per the methodology.

The project proponent has also applied the baseline methodology for small scale project activities AMS-I.C “Thermal Energy production with or without electricity”, version 21. The baseline scenario for the proposed project activity for steam generation was coal base boilers. The efficiency of the boiler using coal that would have been used in the absence of the project activity has been considered as 82% and chosen as ex-ante and it has been used for the calculating the baseline emissions as per the methodology.

The verification team has verified the two projects following turbines and boilers with below specifications:

Boilers:

Parameters	Units	Project I:Patiala –Punjab, India	Project II: Moradabad, Uttar Pradesh, India
Make	-	M/s Cheema Boilers Ltd.	M/S Industrial Boiler Ltd.
Design Capacity	TPH	14	12
Design Pressure	Kg/cm2	45	32
Steam Temperature	°C	420+/- 5°	400+/-5°
Fuel Used	-	Rice Husk	Rice Husk

Turbines:

Parameters	Units	Project I:Patiala –Punjab, India	Project II: Moradabad, Uttar Pradesh, India
Make	-	M/S Pentagon Turbines Pvt. Ltd.	M/S I.B. Turbo Pvt. Ltd.
Design Capacity	kW	1000	600
Inlet Steam Pressure	Kg/cm2	43	30
Inlet Steam Temperature	°C	430	360

Boiler specification was verified through photos of boiler in Verification On- visit and found to be in line with the details provided in the registered PD /01/.

Location of the project was verified through Latlong.net (<https://www.gps-coordinates.net/>) and found consistent with the data provided in the registered PD /01/.

The project qualifies the start date requirements under VCS and successfully Commissioned on Project activities I & II was 6 May 2009 and 4 June 2009 respectively. It has been checked against the commissioning certificate. Further in line with VCS guidelines, crediting period starts from 6 May 2009 which is earlier commissioned in bundle and hence the 2ndcrediting period is started from 6 May 2019 and end up-to 5 May 2029.The emission reductions from the project activity during the current monitoring period 01/01/2021 – 31/12/2021(including both days) amount to 67,742 tonnes of CO₂e.

2 VERIFICATION PROCESS

The registered VCS project is undergoing second verification under second crediting period, the approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

Verification was conducted using Applus+ Certification's procedures in line with the requirements specified in the VCS standard Version 4.1 Requirements, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

It is to be assessed and determined whether the proposed implementation and operation of the project activity, and the steps taken to report emission reductions comply with the criteria and relevant guidance provided by the VCS Board. The validation/verification process consist of the following three phases;

- A desk review of the VCS PD and VCS MR
- Verification remote-Site visit and follow up interviews with project stakeholders
- The resolution of outstanding issues and issuance of final report and opinion.

2.2 Document Review

The verification is performed primarily as a document review of the registered VCS PD/01/, previous MR and Verification report and associated documents as stated in details in appendix 1 of this document. The assessment is performed by a verification team using a protocol. The cross checks between information provided in the Monitoring report, VCS PD and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background investigations.

2.3 Interviews

A remote audit was conducted for the project activity on 27-January-2022. Remote audit was conducted due to on-going COVID-19 pandemic situation in the entire state of India. Taking into account the rules of relevant national and local authorities (local to the VVB offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return). Moreover, The VCS Program does not explicitly mandate site visits as part of the verification process, only that VVBs must achieve a reasonable level of assurance on all validations and verifications (per Section 4.1.2 of the VCS Standard, v4.2)

The VVB has taken alternative measures to reach reasonable level of assurance and conducted remote audit through Skype/Telephone with site personal & consultant (refer section 2.3) with the PP representative. This is also in line with the COVID-19 travel guidance for projects of VERRA.

Technical details & metering/monitoring arrangement verified through onsite photographs/name plates and calibration certificates shared by PP. All the documents were cross checked to ensure conservative estimation of emission reduction.

During the remote audit, the PP representatives were questioned about the implementation of the project activity. Several topics like the verification of commissioning date of meters, the generation, recording, and monitoring of the data and the error accountability were discussed. To cross check the information provided by PP, various documents like technical specifications, commissioning certificates, PPA, JMR sheets, invoice, calibration certificates, s, etc. were also verified. The names of the persons interviewed during remote audit through skype & telephonic interview is given below;

S N	Name	Role	Organization
2	Mr. Sanjay Khanna	DGM(Engg.)	MFL
3	Mr. R N Singh	Manger (Maintenance)	MFL
4	Mr. Vishal Narrang	Engineer	MFL
5	Mr. Avinash Sharma	VCS Project Consultant & Support as a new project proponent in project	Enen Green Services Pvt. Ltd.

2.4 Site Inspections

As discussed in the above section, physical site inspection is not done for the current verification. However, to achieve a reasonable level of assurance, the assessment team has followed the alternative means to substantiate the verification criteria as described in the below table -

Assessment Criteria	Means of RCP Validation & verification/source documents	Assessment opinion
Description of project activity	i. Commissioning certificates /9/ ii. PPA signed with SEB/10/ iii. Latest VCS verification report /2.1/. iv. Interview with PP representatives on 27-January-2022	The information's with reference to project capacity, technology, plant equipment's and commissioning dates as provided in section 1.1 of MR are found consistent with the documents.
Compliance of the project implementation with the registered project design document	i. Monthly JMRs signed by TNEB/8/ ii. Geographical co-ordinates (Location of Project activity) verified through Google Map ¹ as well as sharing of live location from PP representative onsite. iii. Latest VCS verification report /2.1/.	Verified documents indicated the following information: <ul style="list-style-type: none"> • Serial number of energy meters (Main and Check) • Capacity of project • Name of project participant (Ownership of the project activity)

¹<https://www.gps-coordinates.net/>

Assessment Criteria	Means of RCP Validation & verification/source documents	Assessment opinion
	iv. PPA signed with TNEB /10/ v. Interview with PP representatives on 27-January-2022 vi. Latest photographs of major project equipment's installed at site (i.e. Turbine, generators, energy meters, weir intake, penstock, tailrace etc.)/18/	Location of power house is verified through Google Map. Daily generation records are verified on sample basis to check the operational status of project activity. Grid connectivity of the project is confirmed through the PPA. All the information's regarding the project implementation as discuss above are further verified through previous VCS verification report/2.1/ and found consistent.
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	i. Interview with PP representatives on 27-January-2022 ii. PPA signed with TNEB /10/ iii. Monthly JMRs signed by TNEB/8/ iv. Invoices raised by project developer to SEB/7/ v. Photograph of all the WTGs, energy meters installed at site and screen shots of online monitoring system/18/	The organizational structure, responsibilities and competencies of the personnel confirmed through interview with PP representatives. Frequency of monitoring of parameters listed under approved monitoring plan is verified through JMRs /Invoices. The methods used for measuring, recording, storing, aggregating, and reporting the data on monitored parameters are verified though PPA and interactions with site personnel. Procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the MR is confirmed through interview with PP representatives and found satisfactory.
Compliance with the calibration frequency requirements for measuring instruments	i. Calibration certificates of energy meters/6/ ii. Monthly JMRs signed by TNEB/8/ iii. PPA signed with SEB/10/	Calibration frequency and energy meter specifications (Sr.No., make, accuracy class) is verified through calibration certificates, photographs of energy meters and further

Assessment Criteria	Means of RCP Validation & verification/source documents	Assessment opinion
		<p>verified through monthly JMRs and there is delay in calibration found during reported monitoring period and same has been discussed under section 4.3 of this joint validation and verification report.</p> <p>Responsibility of calibration and maintenance of energy meters is solely under control of SEB; this is verified through the PPA.</p>
Assessment of data and calculation of emission reductions or net removals	<ul style="list-style-type: none"> i. Monthly JMRs signed by SEB/8/ ii. Invoices raised by project developer to SEB/7/ iii. Latest VCS verification report for last verification/2.1/ 	<p>Monthly values of monitoring parameters used in ER calculation are verified through JMRs and cross verified with the invoices.</p> <p>Methods, formulae and emission factor for calculating baseline emissions have been followed are in accordance with the applied methodology /14/ and as described in the previous approved VCS verification report/2.1/.</p>

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and Verification On-site assessment. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and non-conformities, which may be of following types;

CAR (Corrective Action Request) is raised if one of the following occurs:

- Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;

- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CR) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CRs raised by the Applus+ Certification during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

During the current verification, 09 Corrective Action request (CARs) and 01 Clarification request (CRs) and 00 Forward Action Request (FARs) were raised and successfully closed.

All the findings that are raised and communicated to project participant during the verification are included under Appendix 3. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

NO FAR was raised during the earlier verification and during current verification.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification, as Applus+ Certification holds the accreditation for Validation of projects under this Sectoral Scope.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is also registered under CDM mechanism of UNFCCC. Reference no of project is 5219. Credits from period 14/02/2012 - 31/01/2014 is claimed CERs under CDM verification. However for the current monitoring period there is no application for verification under CDM mechanism in order to avoid double counting. The PP also confirms that net GHG emission reductions or removals generated during this monitoring period (01/01/2021 – 31/12/2021) shall not be used for compliance under any other programs or mechanisms. This was confirmed through a declaration/15/ submitted by the PP and hence accepted by the assessment team.

3.2 Methodology Deviations

There is no methodology deviation identified during the current monitoring period.

3.3 Project Description Deviations

No project deviation identified during the current monitoring period. There is no deviation from registered project description.

3.4 Grouped Project

Not applicable. The project activity is not a grouped project

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity involves the installation and operation of two cogeneration plants of capacity 1.0 MW (with 14TPH steam generation) and 0.6 MW (with 12 TPH steam generation) located at Bahadurgarh, Patiala in the state of Punjab and Mugalpur, Moradabad in the state of Uttar Pradesh respectively. The two project activities I & II are located at Milk food Limited at P.O. Bahadurgarh and Patiala District of Punjab with latitude 30°21'55.23" N and longitude 76°28'17.59" E and at Village: Mugalpur and Moradabad district of UP with latitude and longitude of 28° 57'43.34" N and 78° 54'20.65" E respectively. The implementation of the project activity was as described in the VCS validated PD, checked against supportive documents presented. The verification team was able to verify that there was no change in project design compared to the design presented in the VCS validated PD; version 03 dated 28/08/2020. The installation and specification of boiler and turbine has been checked with commissioning certificates/12/ and site assessment/20/. The commissioning has also been duly validated in the VCS validation report of the project activity/02/. There was no major breakdown or shut downs during the monitoring period which might affect the applicability of methodology or might cause material errors in emission reductions.

Assessment team concludes the following:

- a) The implementation status of project activity was found to be in compliance with registered PD
- b) VVB has conducted the site visit to confirm the implementation status of the project.
- c) The commissioning date of the project activity was found to be accurately and consistently recorded.

- d) The actual operation of project activity was found to be in compliance with the flow diagram provided in registered PD.
- e) There was no increase in emission reduction from estimates made in registered PD, and hence no further justification to be provided for the same.
- f) The project is registered under VCS program only.

4.2 Safeguards

4.2.1 No Net Harm

There is no negative impact to any socio economic conditions of the region due to the project activity. Being renewable power generation project there is no negative environmental and socio-economic impacts in fact project activity contributes positively by providing environment friendly power generation leading to sustainable development of the region (as referred under the section 1.11). Also, the generation of local employment has directly supported the socio-economic development of the status of the project region.

Rational:As per the notifications issued by Ministry of Environment and Forest(Government of India) notification dated 14/09/2006 and notification dated 01/12/2009 (ref: <http://moef.nic.in/downloads/rules-and-regulations/3067.pdf>), regarding the requirement of environmental Impact Assessment (EIA) studies as per the Environmental Protection Rule, 1986 (Published in the Gazette of India, Extraordinary, Part-II, and Section 3, Sub-section (ii) Ministry of Environment and Forests), any project developer in India needs to file an application to the Ministry of Environment and Forests (including a public hearing and an EIA) in case the proposed industry or project is listed in a predefined list. The renewable energy power Projects are not included in this list and thus, Environmental Impact Assessment for the biomass projects is not required to be done.

This project activity will not involve any negative environmental or socio-economic impacts, as the biomass based boiler are installed for generation of steam and power using biomass as fuel in boiler which is a clean source of energy. Hence no mitigation measures are required.

4.2.2 Local Stakeholder Consultation

The PP has organized stakeholder consultation meetings on 27th July 2009 at Bahadurgath unit Punjab and 30th July 2009 at Village MugalpururAgwanpurMustakam unit Moradabad as per the provision of VCS requirements and reported under the validated PD. There was no comment during the consultation, however, PP has also placed a grievance register onsite, wherein, the stakeholders can put down his/her feedback and the same will be addressed on timely manner. However, there is no feedback/grievance has been reported within this monitoring period. Therefore, no corrective action was required to be undertaken. This is verified by VVB through a copy of grievance register.

4.3 AFOLU-Specific Safeguards

Not Applicable

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS PD/01/ and the monitoring report/04/. The monitoring plan laid in the registered PD is being followed at the site/20/. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/04/.

The emission reductions are purely based on the net electricity and steam generated from project activity. PP has provided all the sufficient data for current monitoring period. The values of the parameter net electricity generation and steam generation by each project plant used in deriving the GHG emission reduction could be very well correlated between the data sets and ER spreadsheet/05/ provided by PP. the verification of each monitoring parameter has been discussed later in section 4.5.

The calculation method and formulae used in calculating baseline emission and project emission is in compliance to the methodologies used i.e. AMS I.C version 21 and AMS I.D version 18 /10/.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The below tables describe how the parameter, that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met.

Parameter	Net Electricity ($EG_{P,y}$)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The electronic energy meter at the sent out point of the project activity plant is used to measure the data of net electricity generated.

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment : Energy meter Type : Electronic Accuracy : 0.5s Serial number of equipment : 0788005 Project – II (Moradabad, Uttar Pradesh, India): Equipment : Energy meters Type : Electronic <u>Accuracy</u> : 0.5s Serial number of equipment :104707/227-3706
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer’s specification?	Yes, the accuracy of the monitoring equipment used is 0.5s, which is as per the registered PD/01/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment’s is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the

		meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited body./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of meters is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	<p>Cumulative value of EG_{PJ,y} for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India):4514.75MWh.</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 3813.90 MWh</p>

	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Verification On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable.	
Findings	CL#01 & CAR#02 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Quantity of fossil fuel (coal) of type i combusted in boiler in year y ($Q_{fossil, i, y}$)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Measuring by Weigh bridge
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment : Weigh bridge Type : Electronic <u>Accuracy Class/Range:0 to 40 TON</u> Serial number of equipment :14WB00381 Project – II (Moradabad, Uttar

		Pradesh, India): Equipment : Weigh bridge Type : Electronic <u>Accuracy Class/Range:0 to 40 TON</u> Serial number of equipment : 17ESDD282
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Yes, the accuracy of the monitoring equipment used is inline with registered PD/01/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external agency NABL accredited /07/.

	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of meters is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	<p>Cumulative value of $Q_{fossil, i, y}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India):0 Tonnes.</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 0 Tonnes</p>
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor daily and it is verified by the plant manager by cross checking it with the fossil fuel of type I procurement data (Invoices), therefore, VVB able to confirm that and the data management system is effective and reliable.</p>

Findings	CL#02 and CAR#01 was raised and resolved
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.

Parameter	Quantity of fossil fuel (diesel) combusted in boiler in year y (F_{Ci,j,y})											
Means of verification	<table border="1"> <thead> <tr> <th style="background-color: #cccccc;">Criteria/Requirements</th> <th style="background-color: #cccccc;">Assessment/Observation</th> </tr> </thead> <tbody> <tr> <td>Measuring /Reading /Recording frequency</td> <td>Measuring by Measurement through invoices.</td> </tr> <tr> <td>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</td> <td>Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.</td> </tr> <tr> <td>Monitoring equipment</td> <td>Not Applicable</td> </tr> <tr> <td>Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment</td> <td>Not Applicable</td> </tr> </tbody> </table>		Criteria/Requirements	Assessment/Observation	Measuring /Reading /Recording frequency	Measuring by Measurement through invoices.	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.	Monitoring equipment	Not Applicable	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment	Not Applicable
Criteria/Requirements	Assessment/Observation											
Measuring /Reading /Recording frequency	Measuring by Measurement through invoices.											
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.											
Monitoring equipment	Not Applicable											
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment	Not Applicable											

	comply with local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	Cumulative value of FC_{i,j,y} for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The

		<p>monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India): 59.035liter</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 57.73liter</p>	
	If applicable, has the reported data been cross-checked with other available data?	It is crosschecked against invoices with plant log book data.	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor daily and it is verified by the plant manager by cross checking it with the fossil fuel of type I procurement data (Invoices), therefore, VVB able to confirm that and the data management system is effective and reliable.</p>	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Quantity of steam generated from project activity biomass fired boiler.(Q_{steam})
------------------	---

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Reading is directly taken from steam flow meter by boiler attendant supervisor on hourly basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment : Stem flow meter Type : Paper and Electronic <u>Accuracy Class/Range</u> : 0 to 18 Ton Serial number of equipment : 0612221 Project – II (Moradabad, Uttar Pradesh, India): Equipment : Stem flow meter Type : Paper and Electronic <u>Accuracy Class/Range</u> : 0 to 18 Ton Serial number of equipment : F3056
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.

	comply with local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of steam flow meter is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of Q_{steam} for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER

		<p>calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India):11307.97 Tonnes</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 96673.75 Tonnes</p>	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Temperature of the steam generated(T_{steam})
------------------	--

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	On site measurement taken from temperature gauge installed at steam outlet from the boiler.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment: Temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 1200 DEG. C</u> Serial number of equipment : T1P521531 Project – II (Moradabad, Uttar Pradesh, India): Equipment: Temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 1200 DEG. C</u> Serial number of equipment :1070043
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.	

	comply with local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of temperature gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of T_{steam} for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER

		<p>calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India): 403.80°C</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 401 °C</p>	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Pressure of the steam generated .(P_{steam})	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	On site measurement taken from pressure gauge installed at steam outlet from the boiler.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 80 bar</u> Serial number of equipment : 08D0011 Project – II (Moradabad, Uttar Pradesh, India): Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 80 bar</u> Serial number of equipment : 0249655

	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Yes, the accuracy of the monitoring equipment as per the registered PD/01/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of pressure gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the	Cumulative value of P_{steam} for

	monitoring report verified?	entire monitoring period is reported in the monitoring report/05/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent. Value of this parameter for the current monitoring period was verified as Project – I (Patiala –Punjab, India):41.49 Kg/cm ² Project – II (Moradabad, Uttar Pradesh, India): 32 Kg/cm ²	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.	
Findings	CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Temperature of the steam used in the process at high pressure(after conjunction point of direct and bleed steam)(at high pressure side) (T _{steam,HP,I})
------------------	---

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	On-site measurement from temperature gauge installed at steam outlet from boiler
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment: temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 500 DEG. C</u> Serial number of equipment : 06D0023
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer’s specification?	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment’s is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the

		meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of temperature gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	<p>Cumulative value of $T_{\text{steam,HP,I}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India):323.60°C</p>

	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Quantity of steam used in the process at high pressure(after conjunction point of direct and bleed steam)(at high pressure side) ($Q_{\text{steam,HP,I}}$)		
Means of verification	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	Reading is directly taken from steam flow meter by boiler supervisor on hourly basis.	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.	

	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment: Steam flow meter. Type : Electronic <u>Accuracy Class/Range: 0 to 7.50 TPH</u> Serial number of equipment : FTX55PL
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer’s specification?	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment’s is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer’s specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an	Yes the calibration is conducted by external accredited NABL

	accredited person or institution?	agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of steam flow meter is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	<p>Cumulative value of $Q_{\text{steam,HP}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India): 60509.45Tonnes</p>
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>
Findings	CL#02 and CAR#01 was raised and resolved	

Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.
-------------------	--

Parameter	Pressure of the steam used in the process at high pressure(after conjunction point of direct and bleed steam)(at high pressure side) ($P_{\text{steam, HP,I}}$)											
Means of verification	<table border="1"> <thead> <tr> <th>Criteria/Requirements</th> <th>Assessment/Observation</th> </tr> </thead> <tbody> <tr> <td>Measuring /Reading /Recording frequency</td> <td>On-site measurement from temperature gauge installed at steam outlet from boiler</td> </tr> <tr> <td>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</td> <td>Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.</td> </tr> <tr> <td>Monitoring equipment</td> <td> Project – I (Patiala –Punjab, India): Equipment: Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 60.00 KG/CM²</u> Serial number of equipment :04B0078 </td> </tr> <tr> <td>Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the</td> <td>Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.</td> </tr> </tbody> </table>	Criteria/Requirements	Assessment/Observation	Measuring /Reading /Recording frequency	On-site measurement from temperature gauge installed at steam outlet from boiler	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment: Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 60.00 KG/CM²</u> Serial number of equipment :04B0078	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.	
Criteria/Requirements	Assessment/Observation											
Measuring /Reading /Recording frequency	On-site measurement from temperature gauge installed at steam outlet from boiler											
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.											
Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment: Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 60.00 KG/CM²</u> Serial number of equipment :04B0078											
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.											

	manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of temperature gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $P_{\text{steam,HP,I}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER

		calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent. Value of this parameter for the current monitoring period was verified as Project - I (Patiala -Punjab, India): 16.31 kg/cm ²	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Verification On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Quantity of steam used in the process at high pressure side.($Q_{\text{steam,HP,II}}$)
------------------	---

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Reading is directly taken from steam flow meter by boiler supervisor on hourly basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – II (Moradabad, Uttar Pradesh, India): Equipment: Steam flow meter. Type : Electronic <u>Accuracy Class/Range: 0 to 7.50 TPH</u> Serial number of equipment :0612221
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer’s specification?	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment’s is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.

	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of steam flow meter is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $Q_{\text{steam,HP,II}}$ for entire monitoring period is reported in the monitoring report/05/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent. Value of this parameter for the current monitoring period was verified as Project – II (Moradabad, Uttar Pradesh, India): 26075.51 tonnes
	If applicable, has the reported data been cross-checked with	Not applicable

	other available data?		
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Temperature of the steam used in the process at high pressure (at high pressure side).($T_{\text{steam,HP,II}}$)		
Means of verification	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	On-site measurement from temperature gauge installed at steam outlet from boiler	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.	

	Monitoring equipment	Project – II (Moradabad, Uttar Pradesh, India): Equipment: temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 500 DEG. C</u> Serial number of equipment :91218274
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer’s specification?	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment’s is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer’s specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an	Yes the calibration is conducted by external accredited NABL

	accredited person or institution?	agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of temperature gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	<p>Cumulative value of $T_{\text{steam,HP,II}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 378°C</p>
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>
Findings	CL#02 and CAR#01 was raised and resolved	

Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.
-------------------	--

Parameter	Pressure of the steam used in the process at high pressure (at high pressure side).($P_{\text{steam,HP,II}}$)											
Means of verification	<table border="1"> <thead> <tr> <th>Criteria/Requirements</th> <th>Assessment/Observation</th> </tr> </thead> <tbody> <tr> <td>Measuring /Reading /Recording frequency</td> <td>On-site measurement from Pressure gauge.</td> </tr> <tr> <td>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</td> <td>Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.</td> </tr> <tr> <td>Monitoring equipment</td> <td> Project – II (Moradabad, Uttar Pradesh, India): Equipment: Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 8 KG/CM²</u> Serial number of equipment :06G0098 </td> </tr> <tr> <td>Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the</td> <td>Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.</td> </tr> </tbody> </table>	Criteria/Requirements	Assessment/Observation	Measuring /Reading /Recording frequency	On-site measurement from Pressure gauge.	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.	Monitoring equipment	Project – II (Moradabad, Uttar Pradesh, India): Equipment: Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 8 KG/CM²</u> Serial number of equipment :06G0098	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.	
Criteria/Requirements	Assessment/Observation											
Measuring /Reading /Recording frequency	On-site measurement from Pressure gauge.											
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.											
Monitoring equipment	Project – II (Moradabad, Uttar Pradesh, India): Equipment: Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 8 KG/CM²</u> Serial number of equipment :06G0098											
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.											

	manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of pressure gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $P_{\text{steam,HP,II}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER

		calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent. Value of this parameter for the current monitoring period was verified as Project – II (Moradabad, Uttar Pradesh, India): 30 Kg/cm ²	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.	
Findings	CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Quantity of steam extracted from the turbine that is used in the process at low pressure (Exhaust Steam at the outlet of the turbine) (at Low pressure side).($Q_{\text{steam,LP}}$)
------------------	---

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	On-site measurement from steam flow meter.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	<p>Project – I (Patiala –Punjab, India):</p> <p>Equipment : Stem flow meter Type : Paper and Electronic <u>Accuracy Class/Range: 0 to 7.50 TPH</u></p> <p>Serial number of equipment :FTX55PL</p> <p>Project – II (Moradabad, Uttar Pradesh, India):</p> <p>Equipment : Stem flow meter Type : Paper and Electronic <u>Accuracy Class/Range: 0 to 7.50 TPH</u>Serial number of equipment :0612221</p>
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the	Yes, the accuracy of the monitoring equipment as per the registered PD/01/.

	manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of steam flow meter is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $Q_{\text{steam,LP}}$ for entire monitoring period is reported in the monitoring report/05/, however monthly values are reported in the ER

		<p>calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India):53798.52Tonnes</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 70598.24Tonnes</p>	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Temperature of the steam extracted from the turbine that is used in the process(at low pressure side) ($T_{\text{steam,LP}}$)
------------------	---

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	On-site measurement from temperature gauge installed at steam outlet from boiler.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment: Temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 400 DEG. C</u> Serial number of equipment :06-0093/14 Project – II (Moradabad, Uttar Pradesh, India): Equipment: Temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 400 DEG. C</u> Serial number of equipment :91218274
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.	

	the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of temperature gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $T_{\text{steam,LP}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER

		<p>calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India): 221.67°C</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 252°C</p>
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>
Findings	No finding has been raised	
Conclusion	<p>The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.</p>	

Parameter	Pressure of the steam extracted from the turbine that is used in the process(at low pressure side).($P_{\text{steam,LP}}$)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	On site measurement taken from pressure gauge installed at steam outlet from the boiler.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 10 KG/CM²</u> Serial number of equipment :06-0093/06 Project – II (Moradabad, Uttar Pradesh, India): Pressure gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 10 KG/CM²</u> Serial number of equipment :- 05.5443
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.

	the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of pressure gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of $P_{\text{steam,LP}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER

		<p>calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India):3.60Kg/cm²</p> <p>Project – II (Moradabad, Uttar Pradesh, India):3.88 Kg/cm²</p>	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Temperature of the feed water in the boiler.(T _{FW})					
Means of verification	<table border="1"> <thead> <tr> <th>Criteria/Requirements</th> <th>Assessment/Observation</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>		Criteria/Requirements	Assessment/Observation		
Criteria/Requirements	Assessment/Observation					

	Measuring /Reading /Recording frequency	On-site measurement from temperature gauge installed at feed water inlet.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment: Temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 1200 DEG.C</u> Serial number of equipment :03122 Project – II (Moradabad, Uttar Pradesh, India): Equipment: Temperature gauge. Type : Electronic <u>Accuracy Class/Range: 0 to 1200 DEG.C</u> Serial number of equipment :1070043
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national	Yes, the accuracy of the monitoring equipment used as per the registered PD/01/.

	standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external accredited NABL agencies./07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of temperature gauge is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of T_{FW} for entire monitoring period is reported in the monitoring report/05/, however monthly values are reported in the ER

		<p>calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>Project – I (Patiala –Punjab, India): 100°C</p> <p>Project – II (Moradabad, Uttar Pradesh, India): 98 °C</p>	
	If applicable, has the reported data been cross-checked with other available data?	Not applicable	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.</p>	
Findings	CL#02 and CAR#01 was raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

Parameter	Quantity of rice husk consumed annually.($Q_{biomass, i,y}$)					
Means of verification	<table border="1"> <thead> <tr> <th>Criteria/Requirements</th> <th>Assessment/Observation</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>		Criteria/Requirements	Assessment/Observation		
Criteria/Requirements	Assessment/Observation					

	Measuring /Reading /Recording frequency	MeasuringbyWeigh bridge
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Project – I (Patiala –Punjab, India): Equipment : Weigh bridge Type : Electronic <u>Accuracy Class/Range: 0 to 40 TON</u> Serial number of equipment:14WB00381 Project – II (Moradabad, Uttar Pradesh, India): Equipment : Weigh bridge Type : Electronic <u>Accuracy Class/Range: 0 to 40 TON</u> Serial number of equipment: 17ES00282
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer’s specification?	Yes, the accuracy of the monitoring equipment as per the registered PD/01/.

	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range.
	Calibration frequency /interval:	Calibration frequency of the meters is once in 3 years.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is in line with the monitoring plan as outlined in the registered PD/01/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes the calibration is conducted by external agency NABL accredited /07/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of meters is valid for the whole reporting period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	<p>Cumulative value of $Q_{\text{biomass, i,y}}$ for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was</p>

		verified as Project – I (Patiala –Punjab, India):34,424 Tonnes. Project – II (Moradabad, Uttar Pradesh, India): 28,302Tonnes
	If applicable, has the reported data been cross-checked with other available data?	The data were cross checked with the Invoices raised by biomass (rice husk) suppliers.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Verification On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The data is recorded by the supervisor every hour and it is verified by the plant manager. Therefore, VVB able to confirm that the data management system is effective and reliable.
Findings	CL#02 and CAR#01 was raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

Parameter	Net Calorific Value of biomass residue (rice husk). ($NCV_{biomass}$)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Net calorific value of biomass was checked through Govt. approved independent laboratory which is 3 rd party lab and as its independent lab and not linked with the PP in any manner.

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/10/.
	Monitoring equipment	Not Applicable
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not Applicable
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable

	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	<p>Cumulative value of NCV_{biomass} for entire monitoring period is reported in the monitoring report/04/, however monthly values are reported in the ER calculation sheet/06/. The monthly values were verified from the plant data and found to be consistent.</p> <p>Value of this parameter for the current monitoring period was verified as</p> <p>2944 Kcal/kg</p>
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>Verification On- site assessment of the project activity confirms that the necessary QA/QC procedures are in place. The net calorific value of the biomass is obtained from the external Govt. approved independent laboratory . Therefore, VVB able to confirm that the data management system is effective and reliable.</p>
Findings	CL#02and CAR#01 was raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodologies. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

Parameters fixed ex ante:

EF_{EF,CO_2} : it is the CO₂ emission factor per unit of energy of coal fixed at the time of project registration the mentioned value of 94.6 tCO₂/ TJ is consistent with the registered PD/01/.

$\eta_{BL, thermal}$: it is the efficiency of the boiler using coal fixed at the time of project registration the mentioned value of 82% is consistent with the registered PD/01/.

$EF_{grid,CM,y}$: it is the Combined margin CO₂ emission factor for NEWNE grid fixed at the time of project registration the mentioned value of 0.94193 tCO_{2e}/MWh is consistent with the registered PD/01/.

$COEF_{i,y}$: it is the CO₂ emission coefficient of fuel type I (Diesel) fixed at the time of project registration the mentioned value of 0.0032 tCO_{2e}/litre is consistent with the registered PD/01/.

PLF: it is the Plant Load Factor fixed at the time of project registration the mentioned value of 90% is consistent with the registered PD/01/.

$\eta_{BI, biomass}$: it is the efficiency of the project activity biomass based boiler fixed at the time of project registration the mentioned value of 78% is consistent with the registered PD/01/.

Calibration of meters:

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate. The installation and working conditions of the meters were checked through photos of meters and were found to be satisfactory. Details of meters are provided in below table:

SL · N O.	NAME	LOCATION	APPLICATION	ACCURACY CLASS / Range of Equipment	LEAST COUNT	SR. NO.	CALIB. DATE
1	DIGITAL ENERGY METER	STEAM TURBINE	MONITORING ENERGY PROD BY TURBINE	0.5s	1 KWH	0 7880005	09.05.20 20 08.05.20 21
2	DIGITAL FLOW INDICATOR AND TOTALISER	MAIN STEAM LINE	MAIN STEAM FLOW INDICATOR AND TOTALISER	Range: 0 to 18 Ton	0.01%	N/A	26.03.20 20 25.03.20 21

SL · N O.	NAME	LOCATION	APPLICATION	ACCURACY CLASS / Range of Equipment	LEAST COUNT	SR. NO.	CALIB. DATE
3	FLOW TRANSMITTER	MAIN STEAM LINE	MAIN STEAM FLOW TRANSMITTER	Range: 0 to 7500 MM H ₂ O	0.1 MMH ₂ O	0 237802	08.02.20 18 06.02.20 21
4	DIGITAL PRESSURE INDICATOR	MAIN STEAM LINE	SUPER HEATER HEADER PRESSURE	Range: 0 to 60.00 KG/CM ²	0.01KG/ CM ²	DP150KA	28.03.20 20 27.03.20 21
5	PRESSURE TRANSMITTER	MAIN STEAM LINE	MAIN STEAM PRESSURE TRANSMITTER	Range: 0 to 80 bar	0.1 BAR	08D0011	08.02.20 18 08.02.20 21
6	DIGITAL PID CONTROLLER	MAIN STEAM LINE	MAIN STEAM TEMPRATURE MEASURING	Range: 0 to 1200 DEG. C	0.1 DEG.C	1701RP	08.06.20 20
				Range: 0 to 600 DEG.C	0.1 DEG.C	T1P521531	06.06.20 21
7	DIGITAL FLOW INDICATOR AND TOTALISER	BLEED STEAM LINE	BLEED STEAM FLOW INDICATOR AND TOTALISER	Range: 0 to 750 TON	0.01 TPH	FTX55PL	09.05.20 20 08.05.20 21
8	FLOW TRANSMITTER	BLEED STEAM LINE	BLEED STEAM FLOW TRANSMITTER	Range: 0 to 10000 MMH ₂ O	0.1 MMH ₂ O	91M728060	08.02.20 18 06.02.20 21
9	DIGITAL PID CONTROLLER	BLEED STEAM LINE	BLEED STEAM PRESSURE	Range: 0 to 60.00 KG/CM ²	0.01KG/ CM ²	04B0078	28.03.20 20 27.03.20

SL · N O.	NAME	LOCATION	APPLICATION	ACCURACY CLASS / Range of Equipment	LEAST COUNT	SR. NO.	CALIB. DATE
			MEASURING				21
1 0	PRESSURE TRANSMITTER	BLEED STEAM LINE	BLEED STEAM PRESSURE	Range: 0 to 60 bar	0.1 BAR	0 249655	08.02.20 18 06.02.20 21
1 1	DIGITAL PID CONTROLLER	BLEED STEAM LINE	BLEED STEAM TEMPRATURE MEASURING	Range: 0 to 500 DEG. C	0.1 DEG.C	06D0023	28.03.20 20 27.03.20 21
1 2	DIGITAL FLOW INDICATOR AND TOTALISER	EXHAUST STEAM LINE	EXHAUST STEAM FLOW INDICATOR AND TOTALISER	Range: 0 to 7.50 TPH	0.01 TPH	0 612221	02.04.20 20 01.04.20 21
1 3	FLOW TRANSMITTER	EXHAUST STEAM LINE	EXHASUT STEAM FLOW TRANSMITTER	Range: 0 to 3800 MMH ₂ O	0.1 MMH ₂ O	002711180 9/06	08.02.20 18 06.02.20 21
1 4	DIGITAL PID CONTROLLER	EXHAUST STEAM LINE	EXHAUST STEAM PRESSURE	Range : 0 to 10 KG/CM ²	0.01KG/ CM ²	05L0012	24.01.20 20 23.01.20 21

SL · N O.	NAME	LOCATION	APPLICATION	ACCURACY CLASS / Range of Equipment	LEAST COUNT	SR. NO.	CALIB. DATE
1 5	PRESSURE TRANSMITTER	EXHAUST STEAM LINE	EXHAUST STEAM PRESSURE	Range: 0 to 8 KG/CM ²	0.1 KG/CM ²	06G0098	08.02.20 18 06.02.20 21
1 6	TEMPERATUR E GAUGE 4 INCH	EXHAUST STEAM LINE	EXHAUST TEMP. MEASURING	Range: 0 to 400 DEG. C	1 DEG.C	06-0093/14	28.03.20 20 27.03.20 21
1 7	PRESSURE GAUGE 4 INCH (ADDITIONAL)	EXHAUST STEAM LINE	EXHAUST PRESSURE MEASURING	Range: 0 to 10 KG/CM ²	0.1 KG/CM ²	06-0093/06	07.03.20 20 06.03.20 21
1 8	DIGITAL TEMP. INDICATOR	STEAM BOILER	FEED WATER TEMPRATURE INDICATION	Range: 0 to 1200 DEG.C	1 DEG.C	0 3122	02.04.20 20 01.04.20 21
1 9	DIGITAL WEIGHING INDICATOR	WEIGH BRIDGE	MATERIAL WEIGHING INDICATION	Range: 0 to 40 TON	5 KG	14WB00381	15.12.20 20 15.12.20 21

SL · N O.	NAME	LOCATION	APPLICATION	ACCURACY CLASS / Range of Equipment	LEAST COUNT	SR. NO.	CALIB. DATE

It is evident from the above table that calibration for the meters is carried out as per the frequency mentioned in the registered monitoring plan and hence no delay in calibration identified during the current monitoring period.

The details of monitoring equipment are involved in the project activity and their calibration details/07/ are mentioned in Appendix 1 of the VCS MR/04/. The meters have been checked through photos in Verification On- visit and the meter details are found to be consistent with that observed during the site visit.

The assessment team has verified the monthly invoices, plant log book , NCV and calibration certificates and confirmed that only the data recorded through all meters is used to calculate parameters belongs to particular developer and consequently for ER calculations. As verified through the calibration certificates, that meters were working satisfactorily during the current monitoring period. The registered VCS PD/01/ & MR /04/ and meter photos confirm that the energy metering equipment are sealed and maintained by the state utility.

In view of the above discussion the assessment team is able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations

The emission reduction as per the applied methodologies equals the baseline emissions and project emissions (leakage emissions for such project activities is considered zero). The formula provided for the calculation of baseline emissions is:

A. Baseline Emission

Project I:

A. Baseline Emission

1. Baseline emissions for supply of electricity to and / or displacement electricity from a grid shall be calculated as per the procedures detailed in section 4.1 of the revised PD version 03 dated 28/08/2020.

As per the Para 23 of the AMS.I.Dversion 18 and section 4 of validated VCS PD:

Combined margin emission factor is taken from the CEA data base and used guide version 15 (A publicly available official source), which provides CM equal to 0.94193 tCO₂e/MWh.

Baseline emission (tCO₂) = Electricity generated (MWh) x 0.94193 (tCO₂e/MWh).

Baseline emission (tCO₂) = Net Electricity generated (MWh) x 0.94193 (tCO₂e/MWh).

$$= 4514.75 \text{ MWh} \times 0.94193 \text{ (tCO}_2\text{e/MWh)}.$$

$$= 4243.87 \text{ tCO}_2\text{e}$$

2. For steam/ heat produced using fossil fuels the baseline emissions are calculated as follows:

As per the Para 34 of the AMS.I.C version 21 and section 4 of validated VCS PD:

The baseline emissions are calculated as follows:

$$BE_{\text{thermal, Co}_2, y} = (EG_{\text{thermal, y}} / \eta_{\text{BL, thermal}}) * EF_{\text{EF, CO}_2}$$

$$BE_{\text{thermal, Co}_2, y} = [(EG_{\text{thermal, y}} / \eta_{\text{BL, thermal}}) * EF_{\text{EF, CO}_2}] \text{ HP} + [(EG_{\text{thermal, y}} / \eta_{\text{BL, thermal}}) * EF_{\text{EF, CO}_2}] \text{ LP}$$

$$= [(143.25 \text{ TJ / yr} / 0.82) \times 94.6 \text{ tCO}_2 / \text{TJ}] + [(133.20 \text{ TJ / yr} / 0.82) \times 94.6 \text{ tCO}_2 / \text{TJ}]$$

$$= 16,526.38 + 15,367.08 \text{ tCO}_2 / \text{yr}$$

The detailed calculation has been provided in the Excel Sheet.

“Since the project activity displaces both grid power and steam from coal fired boiler, the baseline is summation of both 1 and 2.”

Total Baseline Emission Reduction = 4243.87 tCO₂e + 31,893.46 tCO₂/ yr

$$= 36,137.32 \text{ tCO}_2 / \text{yr}$$

Project II:

A. Baseline Emission

1. Baseline emissions for supply of electricity to and / or displacement electricity from a grid shall be calculated as per the procedures detailed in section 4 of validated VCS PD.

As per the Para 23 of the AMS.I.Dversion 18 and section 4 of validated VCS PD:

Baseline emission (tCO₂) = Net Electricity generated (MWh) x 0.94193 (tCO₂e/MWh).

$$= 3813.90 \text{ MWh} \times 0.94 \text{ (tCO}_2\text{e/MWh)}.$$

$$= 3585.07 \text{ tCO}_2\text{e}$$

2. For steam/ heat produced using fossil fuels the baseline emissions are calculated as follows:

As per the Para 34 of the AMS.I.C version 21 and section 4 of validated VCS PD:

The baseline emissions are calculated as follows:

$$BE_{\text{thermal, Co2,y}} = (EG_{\text{thermal,y}} / \eta_{\text{BL,thermal}}) * EF_{\text{EF,CO2}}$$

$$BE_{\text{thermal, Co2,y}} = [(EG_{\text{thermal,y}} / \eta_{\text{BL,thermal}}) * EF_{\text{EF,CO2}}]_{\text{HP}} + [(EG_{\text{thermal,y}} / \eta_{\text{BL,thermal}}) * EF_{\text{EF,CO2}}]_{\text{LP}}$$

$$= [(70.98 \text{ TJ / yr} / 0.82) \times 94.6 \text{ tCO}_2 / \text{TJ}] + [(175.19 \text{ TJ / yr} / 0.82) \times 94.6 \text{ tCO}_2 / \text{TJ}]$$

$$= 8188.33 + 20211.30 \text{ tCO}_2 / \text{yr}$$

“Since the project activity displaces both grid power and steam from coal fired boiler, the baseline is summation of both 1 and 2.”

$$\text{Total Baseline Emission} = 3585.07 \text{ tCO}_2\text{e} + 28,399.63 \text{ tCO}_2 / \text{yr}$$

$$= 31,984.70 \text{ tCO}_2 / \text{yr}$$

$$\text{Final Baseline Emissions} = 36,137.32 + 31,984.70$$

$$= 68,122 \text{ tCO}_2\text{e}$$

B. Project Emission:

The diesel consumption details are mentioned below:

Project I:

$$\text{Project Emission} = \text{Total diesel consumption} * \text{NCV of Diesel} * \text{Emission factor of Diesel}$$

$$= 59.035 \text{ m}^3 * 43.4 \text{ GJ/m}^3 * 0.0748 \text{ tCo}_2 / \text{GJ}$$

$$= 192 \text{ tCO}_2 \text{ (Round up)}$$

Project II:

$$\text{Project Emission} = \text{Total diesel consumption} * \text{NCV of Diesel} * \text{Emission factor of Diesel}$$

$$= 57.73 \text{ m}^3 * 43.39 \text{ GJ/m}^3 * 0.0748 \text{ tCo}_2 / \text{GJ}$$

$$= 188 \text{ tCO}_2 \text{ (Round Up)}$$

$$\text{Total Project Emission} = 380 \text{ tCO}_2 / \text{yr} \text{ (round up Value)}$$

C. Leakage:

Leakage due to transfer of equipment was not applicable to the current project activity. The PP had demonstrated during validation that there was more than 25% excess biomass available in the region and hence was not required to calculate leakage emissions due to competing use of rice husk. As per Para 78 of AMS I C version 21, the leakage has to be considered if the

biomass residue are transported over a distance of more than 200 Km due to the implementation of the project activity otherwise it can be neglected. The project activity is procuring and utilizing biomass available within the 50 Km radius from Milk Food Limited the same has been verified from rice husk purchase invoices. Hence leakage for this part is Zero.

Year wise Emission Reductions Calculations:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year-2021 (01-01-2021 to 31-12-2021)	68,122	380	0	67742
Total	68122	380	0	67742

The actual emission reductions achieved during the current monitoring period is -3.50% decrease in this monitoring period than the estimated ERs in the registered PD for the comparable period (estimated 116,407 i.e. $70,113 \times (606/365)$). This is largely due to low plant load factor achieved during the current monitoring period. Considering, there is no increase in ERs than the estimated amount; it was found acceptable to the assessment team.

The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed. The assumptions, emission factors and default values that were applied in the calculations are justified. All the data were made available and have monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.

4.6 Non-Permanence Risk Analysis

Not applicable for the project activity.

5 VERIFICATION CONCLUSION

LGAI Technological Center, S.A. (Applus+ Certification) (also referred to as Applus+ Certification), contracted by M/s Milk Food Limited, to perform the independent verification of the emission reductions for the VCS project activity (VCS ID- 784) “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts” in India for the monitoring period 01-01-2021 to 31-12-2021 as reported in the Monitoring Report Version 3.0 dated 25/03/2022. The M/s Milk Food Limited and Enen Green Services Private Limited (a new Project Proponent) is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

Applus+ Certification commenced the verification on the basis of the baseline and monitoring methodologies AMS I.C version 21 and AMS I.D version 18, the monitoring plan contained in the registered VCS PD Version 03, dated 28/08/2020 and VCS guidelines version 4.0, Monitoring Report Version 3.0 dated 025/03/2022 as per the process described under Section 2 of this report.

Applus+ Certification verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Applus+ Certification planned and performed the verification by obtaining evidence and other information and explanations that Applus+ Certification considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 01-01-2021 to 31-12-2021 are fairly stated in the Monitoring Report Version 3.0 dated 25/03/2022. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodologies AMS I.C version 21 and AMS I.D, Version 18, and the VCS standard.

Verification period: From 01-01-2021 to 31-12-2021 (including both days)

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year-2021 (01-01-2021 to 31-12-	68,122	380	0	67742

2021)				
Total	68122	380	0	67742

APPENDIX 1: DOCUMENT REFERENCES

S.No	Title of Document	Version	Date
1.	Registered VCS PD	03	28/08/2020
2.	VCS Validation Report	02	17/09/2020
3.	Previous VCS Verification report (For Monitoring period:()	02	
4.	VCS Monitoring Report (Final)	2.0	25/03/2022
4.1	VCS Monitoring Report	1.0	17/01/2022
5.	ER spread sheet (5219 ER Spreadsheet (Moradabad)VER-2)	2.0	25/03/2022
6.	ER spread sheet (5219 ER Spreadsheet (Patiala)VER-2)	2.0	25/03/2022
7	Certificates of Calibration for all the meters belongs to project activity for energy meters, steam flow meters, temperature sensors, pressure sensors and Weighbridge	-	-
8.	Plant records for electricity consumption	01-01-2021 to 31-12-2021	-
9.	Biomass weightment records	01-01-2021 to 31-12-2021	-
10.	Methodology AMS I.C, "Thermal Energy production with or without electricity" AMS I.D, "Grid connected renewable electricity generation"	version 21 (AMS I.C.) and version 18 (AMS I.D)	-
11.	Consent to Operate issues by Punjab Pollution control board Consent to Operate issues by Uttar Pradesh Pollution control board	01-01-2021 to 31-12-2021	-
12.	Diesel NCV: http://www.ipcc.ch/meetings/session25/doc4a4b/vol2.pdf	-	-
13.	Density of Diesel: http://www.iocl.com/Products/DieselSpecifications.pdf	-	-
14.	VCS webpage for the project, VCS ID 784; http://www.vcsprojectdatabase.org/#/project_details/784	-	-
15.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	19/07/2021
16.	Biomass consumption record (Moradabad) Biomass consumption record (Patiala)	-	-
17.	VCS Standard	Version 4.1	22/04/2021
18.	VCS Program Guide	Version 4.0	19/09/2019
19.	VCS Programme Definition	Version 4.1	15/04/2021
20.	Site assessment –interviews of staff personnel, photographs, physical inspection of monitoring system	-	10/07/2021 to 11/07/2021
21.	NCV of biomass – NABL accredited third party test reports for the verification period under consideration.	01-01-2021 to 31-12-2021	

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
CAR	Corrective Action Request
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
EB	Executive Board
EF	Emission Factor
EPC	Engineering ,Procurement and Construction
ER	Emission Reductions
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CR	Clarification Request
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GOI	Government of India
IPCC	Intergovernmental Panel on Climate Change
MGR	Monthly Generation Reports
MP	Monitoring Plan
MR	Monitoring Report
MWh	Megawatt hour
NCV	Net Calorific Value
PD	Project Description
PP	Project Proponent
PS	Project Standard
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

APPENDIX 3: FINDINGS OVERVIEW

Table 1. Remaining FAR from validation and/or previous verification

FAR ID		Section no.	NA	Date :DD/MM/YYYY
Description of FAR				
N/A				
Project participant response				Date :DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
VVB assessment				Date: DD/MM/YYYY
NA				

Table 2. CR from this verification

CL ID	01	Section no.	MR	Date : 03/02/2022
Description of CL				
<ol style="list-style-type: none"> 1. PP is requested to submit the Commissioning certificates to the VVB for verification 2. PP is requested to submit the declaration confirming there is no credit received or claimed for this monitoring period in Section 1.9 and 1.10 of MR. 3. PP is requested to provide copy of Grievance Register to the verification Team in section 2.2 of the MR. 4. PP is requested to explain the reason for the non- applicability of section. 2.3 in MR. 5. PP is requested to clarify the inconsistency of the data provided with the PDD in section 4.1 				
Project participant response				Date : 25/03/2022
<ol style="list-style-type: none"> 1. Commissioning Certificate provided 2. Declaration provided 3. Copy of Grievance Register provided 4. MR section 2.3 corrected now 5. MR is corrected as per PD 				
Documentation provided by project participant				
<ol style="list-style-type: none"> 1. Commissioning Certificate 2. Declaration 3. Copy of Grievance Register 4. MR version 02 				
VVB assessment				Date: 26/03/2022

PP has found that the clarifications provided by PP along with the relevant documents including Commissioning Certificate, Declaration, Copy of Grievance Register were found to be correct in MR which has been successfully verified by the DOE.

CI#01 CLOSED

CL ID	02	Section no.	4.2 MR	Date	: 03/02/2022
Description of CL					
<ol style="list-style-type: none"> 1. PP is requested to clarify the inconsistency of the values with the ER sheet in section 4.2 2. PP is requested to submit the invoices/ records/log sheets to the VVB for verification of Parameter Monitored as $Q_{fossil, i, y}$ (Quantity of fossil fuel (coal) of type i combusted in boiler in year y) 3. PP is requested to submit the invoices/ records/log sheets to the VVB for verification of Parameter Monitored as $FC_{i, j, y}$ (Quantity of fossil fuel (diesel) combusted in boiler in year y) 4. PP is requested to submit the copy of Invoices raised by rice husk supplier to the VVB for verification of Parameter Monitored as $Q_{biomass, i, y}$ (Quantity of rice husk consumed annually) 5. PP is requested to submit the Lab report to the VVB for transparent verification of Parameter Monitored as $NCV_{biomass}$ (Net Calorific Value of biomass residue (rice husk)) 					
Project participant response					Date : 25/03/2022
<ol style="list-style-type: none"> 1. ER sheet corrected and MR is also corrected 2. Supporting documents submitted 3. log sheet record submitted 4. Invoice and records for Biomass is submitted 5. NCV report submitted 					
Documentation provided by project participant					
<ol style="list-style-type: none"> 1. ER sheet V2 and MR V2 2. Supporting documents 3. log sheet record 4. Invoice and records for Biomass 5. NCV report 					
VVB assessment					Date : 26/03/2022
<p>PP has successfully provided all the clarification regarding the values entered in section 4 of the MR which has been further verified and found to be correct with the documents provided by the PP.</p> <p>CI#02 CLOSED</p>					

CL ID	03	Section no.	(5.2& Appendix ER Sheet)MR	Date : 03/02/2022
Description of CL				
<p>1. PP is requested to Clarify the value of Project Emission for Project I and II as it is found inconsistent of the with the ER sheet in section 5.2 of MR.</p> <p>2. PP is requested to clarify the inconsistency of the calibration date of Pressure Transmittor meter and Digital PID Controller Meter with the Calibration Certificates.</p> <p>3. PP is requested to provide copy of some Log Sheet/Records to the verification team for verifying the ER sheet data of boiler.</p>				
Project participant response				Date : 25/03/2022
<p>1. Project Emission corrected in MR</p> <p>2. Calibration Details corrected in MR</p> <p>3. Log sheet and record submitted</p>				
Documentation provided by project participant				
<p>1. MR version 02</p> <p>2. Log sheet and record</p>				
VVB assessment				Date: 26/03/2022
<p>The corrections and clarifications provided by the PP for section 5 and appendix has been verified and was found to be correct.</p> <p>CI#03 CLOSED</p>				

Table 3. CAR from this verification

CAR ID	01	Section no.	MR	Date : 03/02/2022
Description of CAR				

<ol style="list-style-type: none"> 1. PP is requested to correct font size as instructed as per latest MR template version 4.0 i.e. Font size 9.5, black, regular (non-italic) font on Title Page and Font Size 10.5 in section 5.4 and Appendix. 2. PP is requested to correct the Font Color of the text to be Black as per VCS MR Template Version 4.0 in section 1.3, 1.4 and section 4 i.e. (4.1 and 4.2) 3. PP is requested to provide a working hyperlink in section 1.10 4. PP is requested to correct the Font Size in Section 4 i.e. Parameters Table (Left side) Font has to be Arial BOLD and size has to be 10.5 as per VCS MR template Version 4.0 5. PP is requested to correct the Font Size of the section 4 Parameters Table (Right side) Font has to be of size 9.5 as per VCS MR template Version 4.0 6. PP is requested to add Meter details for Project II as well and provide separate headlines for separate meter details of individual Project in Appendix I. 	
Project participant response	Date : 25/03/2022
<ol style="list-style-type: none"> 1. MR corrected now 2. MR Section corrected now 3. Weblink is corrected now 4. Table is corrected in MR now 5. Section 4 is corrected in MR now 6. Meter details now corrected in MR 	
Documentation provided by project participant	
MR version 02 and ER sheets version 02	
VVB assessment	Date: 26/03/2022
Corrections provided by the PP in the MR for the template corrections for Font/color has been successfully administered and was found to be suitable for the MR which has been further verified by the DOE CAR#01 CLOSED	

Table 4. FAR from this verification

FAR-ID	Section No.	MR	Date : DD/MM/YYYY
Description of FAR			
NA			
Project participant response			Date :DD/MM/YYYY
NA			
Documentation provided by project participant			
NA			
DOE assessment			Date: DD/MM/YYYY
NA			

APPENDIX 4: Competency Statements

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by the Applus+ Certification ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Qualification	Coverage of scope	Coverage of technical Area	Financial aspect	Host country Experience	Attendance to the Assessment (Verification On-)
VivekAhirwar	Lead Auditor (LA)/ Technical Expert (TE)	Yes (1)	Yes (1.1)	N/A	Yes	Yes
Simon Shen	Technical Reviewer (TR)	Yes (1)	Yes (1.1)	N/A	N/A	N/A

The curricula vitae of the DOE's team members are provided below:

Vivek Kumar Ahirwar is a BEE-Certified Energy Auditor by Govt of India with over eight years of relevant experience in energy efficiency, energy audit, thermal and electrical energy generation technology from renewable source and energy conservation in energy intensive industries, designated consumers and commercial buildings, implementation of energy conservation building codes, research, process and green building projects. He is a certified lead auditor for ISO 14001 EMS and 14064. He has experience under various categories of projects stating from renewable to waste to supercritical projects and WCD. He has successfully audited more than 100 GHG (CDM/VCS/GS) projects in different states across the India. He has done Mater in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from Govt. Engineering college, Rewa, RGPV, India.

Simon Shen (master degree in thermal energy engineering, bachelor degree in environmental engineering) is a lead auditor appointed by Applus+ certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ certification, he had been worked for TÜV SÜD as a GHG validator/verifier and ISO 9001/14001 lead auditor for 3.5years.

-000-