



# 5MW biomass based cogeneration project at Sainsons



By KBS Certification Services Pvt. Ltd.

<b>Project Title</b>	5MW biomass based cogeneration project at Sainsons
<b>Version</b>	2.0
<b>Report ID</b>	VCS.20.VER.022

<b>Report Title</b>	5MW biomass based cogeneration project at Sainsons
<b>Client</b>	PA RESEARCH & CONSULTANTS PVT. LTD
<b>Pages</b>	54
<b>Date of Issue</b>	19 May 2021
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Summary:
<p>KBS Certification Services Pvt. Ltd. has been contracted by, “PA RESEARCH &amp; CONSULTANTS PVT. LTD” to undertake 1<sup>st</sup> verification and certification for the greenhouse gas (GHG) emission reductions reported from ‘5MW biomass based cogeneration project at Sainsons’ for the monitoring period 01/01/2017 - 30/09/2020<sup>1</sup>, under the crediting period 01/10/2016 – 30/09/2026, in the initial monitoring report version 01 dated 15/12/2020, with regard to the relevant requirements of VCS Standard Version 4.</p> <p>The 5MW biomass based cogeneration project at Sainsons involves implemented a 5 MW cogeneration power project based on rice husk., within the jurisdiction of Bakhli village, Pehowa Tehshil, Kurukshetra district of Haryana state of India. The project is designed to produce electricity by 5MW extraction-cum-condensing steam turbine with alternator. Major equipment of the power project comprises of 50 tonne per hour (TPH) capacity single drum travel grate type boiler. The average inflow of extraction steam is 30 tonne per hour, which is used for process steam requirement in the paper machine section.</p> <p>The project activity has been operational since commissioning (01/01/2017) and during the first monitoring period i.e. from 01/01/2017 - 30/09/2020 and has generated 81,880 MWh net</p>

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<sup>1</sup> The start date of the project activity was expected to start from 01/10/2016. However, the actual start date of the project is 01/01/2017. So, the start of monitoring period has been taken from 01/01/2017. No emission reduction to be claimed between 01/10/2016 to 31/12/2016.

electricity, thereby resulting in emission reduction of 67,151 tCO<sub>2</sub>e. The monitoring period subject to this monitoring report is inclusive of first and last day of period.

The verification is based on the VCS PD, Monitoring report (MR), Emission reduction calculation spreadsheet (ER sheet), proof of title, proof of right, additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and supporting documents made available to the verification team by project proponent.

A risk based approach has been followed to perform the verification of the project activity. In the course of verification, 03 Corrective Action Requests (CARs) and 03 Clarification Requests (CLs) have been raised. All the CARs and CLs have been closed out successfully.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 01/01/2017 - 30/09/2020 based on the reported emission reductions in the final monitoring report version 4 dated 17/05/2021 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

As a result of the verification, the verification team confirms that:

- The project fulfils criteria of VCS Standard Version 4.
- The project is in line with all relevant VCS requirements.
- Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board and VCS Association;
- All information and references relevant to the project activity resulting in emission reductions;

The monitoring is transparent, adequate and in line with applied baseline and monitoring methodology of ACM 0006, Version: 12.1.1, EB 69 : Consolidated methodology for electricity and heat generation from biomass residues /10/.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 67,151 tCO<sub>2</sub>e emission reductions during the 1<sup>st</sup> monitoring period (01/01/2017 - 30/09/2020), under the first crediting period (01/10/2016 – 30/09/2026).

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# 1 INTRODUCTION

## 1.1 Objective

KBS Certification Services Pvt. Ltd. has been contracted by, “PA RESEARCH & CONSULTANTS PVT. LTD” to undertake 1<sup>st</sup> verification and certification for the greenhouse gas (GHG) emission reductions reported from ‘5MW biomass based cogeneration project at Sainsons’ for the monitoring period 01/01/2017 - 30/09/2020, under the crediting period 01/10/2016 – 30/09/2026, in the initial monitoring report version 01 dated 15/12/2020, with regard to the relevant requirements of VCS Standard Version 4. The VCS projects must undergo an independent third-party verification and certification of emission reductions as the basis for issuance of Voluntary Emission Reductions (VERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the project description (PD) and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Voluntary Emission Reductions (VERs/VCOs) without any double counting, and
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

## 1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of monitoring report, VCS project description (VCS PD), including the monitored data, and other relevant documents made available to verifier and information collected through performing interviews during Remote assessment (interviews) of the project activity.

The project is assessed against the requirements of VCS standard version 4 and related rules and guidance /5/. KBS has, based on the recommendations in the latest version of Verified Carbon standard, and employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring.

The aspects to be covered under the purview of verification are:

- Ensure that the project activity has been implemented and operated as per the registered VCS PD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place as per the documents provided by the client and during remote audit;
- Ensure that the monitoring report and other supporting documents provided are complete
- Ensure that the practiced monitoring system and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved CDM methodology /10/;
- Evaluate the data recorded and stored are as per the monitoring methodology.

### 1.3 Level of Assurance

- Reasonable level of assurance

The verification is based on the VCS PD, MR, proof of title, proof of right, additional documents related to baseline and monitoring methodology, the subsequent background investigation, monitoring plan, follow-up interviews and supporting documents made available to the verification team by project proponent. The information in these documents is reviewed against the requirements of VCS Standard Version 4.0. KBS has employed a risk-based approach in the verification, focusing on the identification of significant risks for project implementation and the generation of Emission Reductions.

The items covered in the verification are described below:

- Criteria of VCS Version 4 (VCS Program guide Version 4 & VCS Standard Version 4)
- Criteria of CDM approved methodology, ACM0006- Version 12.1.1
- VCS Monitoring Report
- Monitoring Plan
- Background investigation and follow up interviews
- Stakeholder feedback
- Registered VPS-PD and Validation Report
- project's compliance with other relevant rules, including the project country (India) legislation and assurance to stakeholders of the quality

Furthermore, the verification team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data available on public domain. A desk review is carried out to assess the following:

- Compliance with relevant law and regulations

- Stakeholder comments (If any)
- Proof of title
- Single line diagram and site location map
- Technical specifications of turbines, meters etc.
- Electricity production license
- Commissioning Certificate
- Remote auditing (05/02/2021) for verification
- Calibration Certificates
- Export/Import data records
- Invoices

The Verification team has checked all the above-mentioned details and confirms that all the information provided is accurate.

Through the remote interviews host country rule and regulations related to project activity, Project description, technological measures, Implementation, Operation, Management of project activity and Training of personnel, Baseline and Monitoring plan, Stakeholder consultation etc. has been checked and found appropriate.

KBS applies the risk-based approach aimed at focusing on high risk issues to the verification results whilst not omitting any part of the mandatory processes. A few discrepancies were found during the verification and the findings were submitted to the project proponent, indicated under the titles corrective action requests (CARs) and clarification requests (CLs). CARs and CLs require the PP to take relevant actions.

Hence the above steps were followed for achieving the level of assurance in verification report. Based on the process and procedures conducted, KBS confirms that the information in the MR:

- is materially correct and is a fair representation of the actual project details, and
- is prepared in accordance with VCS requirements /4//5/ and the applied CDM methodology for information pertaining to GHG qualification, monitoring and reporting.

The verification work is carried out as per this requirement and the verification opinion is assured, provided the credibility of all above. Details are presented in the Verification statement in section 5 below.

## 1.4 Summary Description of the Project

The 5MW biomass based cogeneration project at Sainsons involves implemented a 5 MW cogeneration power project based on rice husk, within Kurukshetra district of Haryana state of India. The project is designed to produce electricity by 5MW extraction-cum-condensing steam turbine with alternator. Major equipment of the power project comprises of 50 tonne per hour (TPH) capacity single drum travel grate type boiler. The average inflow of extraction steam is 30 tonne per hour, which is used for process steam requirement in the paper machine section.

The project activity has been operational since commissioning (01/01/2017)/09/ and during the first monitoring period i.e. from 01/01/2017 - 30/09/2020 and has generated 81,880 MWh net electricity, thereby resulting in 67,151 tCO<sub>2</sub>e of emission reduction. The monitoring period subject to this monitoring report is inclusive of first and last day of period.

During the remote audit inspection /11/, location (as mentioned in section 1.7 of MR) and all the technical aspects of the project activity (equipment, serial no., type, date of calibration etc.) mentioned in the PD /03/ have been verified. The same was also crosscheck during the desk review of supporting documents /6//7//8//9//12//13//14/.

Project entity information as verified is presented below:

Item	Data
Project Entities	Sainsons Paper Industries Limited. (Project Owner)
	PA Research & Consultants Pvt. Ltd. (Consultants)
	(Project developer: Responsible for development of emission reduction through the Verified Carbon Standard)

# 2 VERIFICATION PROCESS

## 2.1 Method and Criteria

The verification process was carried out in line with the requirements of VCS Version 4 /4/. In addition, the verification team followed the guidelines of the CDM Validation and Verification Standard. Standard auditing techniques and KBS's CDM Procedures were also applied during the verification. A risk-based approach was followed to carry out verification

and access all the factors and concerns that relate to the issuance of emission reductions from a project activity.

They include:

- Identification of all the sources contributing to the project emissions and emission reductions.
- Authenticity of the provided data is checked.
- A risk-based analysis is carried out to ensure a clear and transparent assessment. The risks involved in this process are mainly with the informational flows and data recording.

KBS follows a risk-based verification approach, wherein a desk review of the project documentation is undertaken, which is followed by a remote discussion/video inspection by the members of verification team. The verification protocol is filled by the verification team that is based on standard auditing practices and VCS requirements. The verification protocol provides transparent means to record the observations by the verification team members and the non-conformities, if any. The verification protocol is an internal document, and available on request.

**Duration of Verification:**

Verification Contract	21/10/2021
Remote audit	05/02/2021 (Justification section 2.4 below)
Draft Verification Report	01/03/2021
Final Verification Report	18/05/2021

## 2.2 Document Review

A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of documents reviewed is included in the section 'References'.

## 2.3 Interviews

Please refer section 2.4, where complete list of interviewed personnel and key points discussed is provided.

## 2.4 Site Inspections

As a result of the COVID-19 pandemic, 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 VVB, email clarification for Verra guidance on site visits, notification of Covid-19 Travel Guidance for Projects <https://verra.org/covid-19-travel-guidance/> and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), the VVB has skipped the on-site visit. Further Email from VERRA dated 24/03/2020 from “Andrew Beauchamp” has been referred as per which “*The VCS Program does not explicitly mandate site visits as part of the validation and 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, v4.0). Therefore, where a VVB can achieve a reasonable level of assurance without conducting a site visit, or through a remote site visit, this is in conformance with the VCS rules, and no request for an exemption or pre-approval from Verra is required. However, where a validation/verification has been conducted without a site visit, or through a remote site visit, please ensure that the applicable section of the validation/verification report includes a discussion of how a reasonable level of assurance was achieved without an in-person site visit*”.

Hence, the VVB has used other standard auditing techniques for validation or verification as referred to in VCS Rules/requirements, VCS Validation and Verification Manual version 3.2.

Verification team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification. Along with desk review, audit team has conducted remote audit interview as follows:

- A complete desk review of the MR, as well as all applicable country legal requirement and supportive evidences have been checked by the verification team.
- Verification team has performed Zoom Application interview with PP in order to check implementation, project boundary, current situation, monitoring and metering equipment, monitoring procedures, calibration etc.
- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in MR and supporting documents.
- A check of the monitoring equipment including performance and observations of monitoring practices against the requirements of the registered VCS PD and the selected methodology.

Details of interviewees, topics covered and additional information are presented below:

<b>Dates:</b>	05/02/2021 (Zoom Application)
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Key points discussed:	Name of person, interviewed	Designation, Organization
Operational data, Calibration, Data collection, QA/QC procedures, Calculation of ERs,	Mr. Phool Chand	Consultant, PA Research & Consultants
	Mr. J N Saha Mr. H K Saini Mr. P K Saini	Sainsons Paper Industries Limited
	Mr. Phool Chand	Consultant, PA Research & Consultants
	Mr. Phool Chand Mr. J N Saha	Consultant, PA Research & Consultants Sainsons Paper Industries Limited

## 2.5 Resolution of Findings

KBS applies the risk-based approach aimed at focusing on high risk issues to the verification results whilst not omitting any part of the mandatory processes. A few discrepancies were found during the verification and the verification report was submitted to the project proponent, indicated under the titles corrective action requests (CARs) and clarification requests (CLs). CARs and CLs require the PP to take relevant actions. Criteria for judging items as CAR or CL are as follows:

### **Corrective action request (CAR):**

- the project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions
- the Voluntary Carbon Standard's requirements have not been met, or
- there is a risk that emission reductions cannot be monitored or calculated.

### **Clarification request (CL):**

Information is insufficient or not sufficiently clear to determine whether the applicable VCS requirements have been met.

FAR (Forward Action Request):

FARs is to be raised to highlight issues related to project implementation that require review during the first verification of the project activity. FARs does not relate to VCS requirements for registration.

CARs and CLs are to be resolved or closed out if the PP modifies the project description, rectifies the MR or provides adequate additional explanations or evidence that satisfies the concerns. If this is not completed, the project activity cannot be recommended for issuance under VCS registry.

The monitoring report was revised addressing the CARs & CLs issued by KBS. After reviewing the revised and resubmitted MR/1.3/; resolving the CARs & CLs raised and outstanding concerns, KBS issues this final verification report and opinion.

03 CLs and 03 CARs were found during verification and closed satisfactorily. The list of CARs/CLs raised and the response provided, the means of verification, reasons for their closure and references to correction in the MR are provided in appendix 2 of this report. The revised MR/1.3/ with changes incorporated as per the issues raised were rechecked with the documentary evidences and found to be inline.

### 2.5.1 Forward Action Requests

No FAR has been raised during this Verification.

## 2.6 Eligibility for Validation Activities

KBS conducted the verification activity; the validation was performed by the other VVB. KBS has a valid UNFCCC accreditation in the sectoral scope from UNFCCC.

# 3 VALIDATION FINDINGS

## 3.1 Participation under Other GHG Programs

The project is not registered or seeking registration under any other GHG programs. The project has not participated under any other GHG programme.

## 3.2 Methodology Deviations

The verification team confirms that the registered PDD complies with the requirements in the applied monitoring methodology ACM 0006, Version: 12.1.1, EB 69/10/. Therefore, no methodology deviations are applied during the monitoring period.

### 3.3 Project Description Deviations

The project activity is in compliance with the scenario described at the CDM & VCS Project Design Document, and validated by the VCS validation report except the start date of crediting period. During validation, the start date was chosen based on the expected date of commissioning, however during verification the actual date of commissioning was available and therefore same has been considered as start date 01/01/2017. The crediting period accordingly adjected by PP.

### 3.4 Grouped Project

The project is not a grouped project. Therefore, this section is not applicable.

## 4 VERIFICATION FINDINGS

### 4.1 Project Implementation Status

The project activity is in operation stage as evidenced by the remote inspection of the site. All the physical components and project boundary are in conformity with the description in registered VCS PD /03/. The capacity of project equipment's have been confirmed during the remote inspection, also through the technical specifications /06/ and found in-compliance with the registered VCS PD/03/.The project activity was commissioned on 01/01/2017 as per commissioning certificate/09/.

On the basis of the remote inspection and the reviewed project documentation like the technical specification, photographs of meters/6/, single line diagram/7/, electricity production license/8/, commissioning certificate/9/, calibration certificates of energy meters/13/, and invoices of biomass procured/14/ etc. the verification team confirms that the project was implemented and operated as described in the registered VCS PD/3/. Further, the verification team confirms that-

-There is no any material discrepancy between project implementation and the project description in the registered VCS PD.

- The monitoring plan is completely implemented and is suitable with actual monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters)

- The project has not participated or been rejected under any other GHG programs and further has not received or sought any other form of environmental credit since validation.

- There is no methodology deviation applied to this project.

The total generation capacity of the power plant was verified during the remote audit and from the electricity production license/08/.

Further it was noticed that during the monitoring period the project activity operated under normal conditions and no significant event that may have impact on monitoring of GHG emission reductions was observed. Same has been checked from the operational data during remote auditing.

**Ownership and other programs:**

PP has declared that the project is not registered in other GHG programs, PP confirmed that the project will only be going forward with VCS registry, as declared in VCS-PD /3/. Thus emission reductions generated by project will be solely claimed by PP and PP has the right of use, which is acceptable. Net GHG emission reductions or removals generated by this project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions as the host country i.e. India is not a participant in any emission trading programs or nor does it have any binding limits.

PP will not claim the environmental/carbon credits under any other GHG emission reduction scheme for the crediting period under VCS and PP has provided declaration on the same during the validation. Hence, there is no possibility of double counting.

**Sustainable Development Contributions:**

As confirmed during the remote audit, the project displaces electricity produced in fossil fuel based power plants, by using clean renewable source to generate electricity and thereby contributes to sustainable development through reduction in greenhouse gas (GHG) emissions. It has also been confirmed that the project implementation has led in significant environmental and socio-economic benefits (as stated in section 1.11 of the submitted MR) and contributes to the social, economic, technological and environmental well-being. The project supplies clean, affordable and renewable energy (81,880) MWh net electricity under the monitoring period that could have been imported from the grid in absence of project activity) without reliance on fossil fuels for generation of electricity to meet the growing demands in the region. Also, the implementation of project is providing employment to locals which assists in alleviation of poverty to certain extent by generating both direct and indirect employment in the area of skilled/unskilled jobs decent and secure work environment by reducing emissions otherwise generated by the operation of fossil fuel based power plants and would lead to economy growth of the local people improves by selling biomass to the power plant and to encourage other entrepreneurs to participate in similar projects as well.

**Management and operational system:**

Verification team was able to verify that authorities and responsibilities /16/ for monitoring and reporting of all data related to the emission reductions were clearly defined for the monitoring period from 01/01/2017 - 30/09/2020.

The allocation of the responsibilities is documented in a written form and is followed as described in the registered VCS PD/3/. Routines for the archiving of data are defined and documented.

The monitoring plan described in section 4.3 of the MR/1.3/ is confirmed to be correct. All the parameters of the monitoring plan are monitored using appropriate metering system.

The verification team has interviewed the plant personnel /16/ who are involved in the monitoring of the parameters that are used to determine the emission reductions of the VER project. It is confirmed based on the interviews /11/ that the plant's team is competent enough to monitor the parameters as described in the monitoring plan.

As discussed above, the verification team concludes that management and operational system of the project is implemented and operated well. Thus, it ensures the quality of data which is required in calculating the emission reductions.

**Implementation status of the monitoring plan:**

Verification team confirms through remote inspection /11/ and from the document review as confirmed above/6/, /7/, /8/, /9/, /12/, /13/, /14/ that the actual monitoring system complies with the monitoring plan mentioned in the registered VCS PD /3/ and there is no deviation in monitoring plan and procedures, equipment.

During the verification, all relevant monitoring parameters of the registered monitoring plan have been verified with regard to the appropriateness of the verification method; the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. All monitoring parameters have been measured / determined without material misstatements and are in line with all applicable standards and relevant requirements. It is confirmed that the monitoring mechanism is effective and reliable.

Therefore, from the document review and remote inspection, it is confirmed that all the parameters were monitored in accordance with the registered monitoring plan during the monitoring period. Following are the details of monitoring in accordance with the monitoring plan of the registered VCS PD/3/:

Data - Parameter	BRPJ <sub>n,y</sub>
Data unit	Tonnes
Description	Quantity of biomass residues of category n used in the project activity in year y (tonnes on dry-basis)
Source of data	Onsite measurement
Description of measurement methods and procedures to be applied	Verification team through remote audit /06/ confirms the dry weight of all biomass residues subsequently determined using the biomass moisture content of the corresponding biomass type
Frequency of monitoring-recording	On each delivery and monthly aggregation as verified by the verification team through remote assessment.
Value monitored	409,378.10

	Verification team through remote audit interviews (/11/ confirms that the Quantity of biomass residues of category n used in the project activity in year y is 409,378.10. Moreover verification team also carried out independent analysis and based on the sectoral expertise confirms that the reported value deems adequate.
Monitoring equipment	Weighbridge was observed by the verification team during the remote audit assessment.
QA-QC procedures to be applied	Verification team through remote audit interviews and desk review (/11/) confirms that The weighbridge calibrated annually. The calibration was undertaken by the government body, the calibration certificates furnished to VVB and based on the review of submitted calibration it is concluded the calibration meets the requirement of VCS PD. Calibration detail is provided in Appendix 3 of this report.
Purpose of the data	Data has been used for the Calculation of project emissions
Calculation method	The calculation involves moisture content in order to determine the quantity of dry biomass, data is monitored continuously and aggregated as appropriate, to calculate emissions reductions.
Comments	Not applicable.

Data - Parameter	<b>BR<sub>B4, n,y</sub></b>
Data unit	Tonnes
Description	Quantity of biomass residues of category n used in the project activity in year y for which the baseline scenario is B4 (tonne on dry-basis)
Source of data	Plant record
Description of measurement methods and procedures to be applied	Calculated ex ante as per the step 1.4 of baseline emission
Frequency of monitoring-recording	Monthly as verified by the verification team through remote assessment.
Value monitored	4,09,378.10

	Verification team through remote audit interviews /11/ confirms that the Quantity of biomass residues of category n used in the project activity in year y is 409,378.10. This is calculated ex-ante based on the baseline parameters. The calculation deems adequate by verification team. The ER sheet demonstrates the detailed calculation and found correct by the verification team.
Monitoring equipment	-
QA-QC procedures to be applied	-
Purpose of the data	-
Calculation method	-
Comments	-

Data - Parameter	<b>EF<sub>ff,y</sub></b>
Data unit	tCO <sub>2</sub> /GJ
Description	CO <sub>2</sub> emission factor for fossil fuel type f in year y (t CO <sub>2</sub> /GJ)
Source of data	For the proposed project activity, the selected source is Table 1.4 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories. To ensure conservativeness, the Project Proponent uses the values at the upper limit of the uncertainty at a 95% confidence interval.
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms The Project Proponent uses IPCC default values
Frequency of monitoring-recording	Annually as verified by the verification team through remote assessment.
Value monitored	0.0748  This value is sourced from IPCC, verification team checked the data source and found it adequately reported from the IPCC.
Monitoring equipment	-
QA-QC procedures to be applied	-

Purpose of the data	Calculation of project emissions
Calculation method	-
Comments	-

Data - Parameter	<b>HC<sub>BL,y</sub></b>			
Data unit	GJ			
Description	Baseline process heat generation in year y (GJ)			
Source of data	Plant record			
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms the dry weight of all biomass residues subsequently based on steam generated, temperature and pressure.			
Frequency of monitoring-recording	Determined ex-ante according to project configuration.as verified by the verification team through remote assessment.			
Value monitored	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020 (Jan-Sept)</b>
	661,442	765,979	827,572	651,248
	Verification team through remote audit interviews /11//06/ confirms that the Baseline process heat generation in year y is tabulated below. The root parameters to calculate the heat content i.e. temperature & pressures were monitored from the calibrated equipment.			
Monitoring equipment	Calculated as observed by the verification team during the remote audit assessment. Refer Appendix 3 for the details of steam temperature meter and pressure transmitter.			
QA-QC procedures to be applied	Refer Appendix 3 for the details of monitoring equipment.			
Purpose of the data	To check energy balance			
Calculation method	Parameter determined as the difference of the enthalpy of the generated in the project activity minus the enthalpy of the feed water, the boiler blow-down and any condensate return to the heat generators and has been used to calculate the enthalpy as a function of temperature and pressure.			

Comments	Not applicable.
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Data - Parameter	EL <sub>Gross,y</sub>
Data unit	MWh
Description	Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y (MWh)
Source of data	Plant record
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ and desk review/06/ confirms Data is monitored continuously and aggregated as appropriate, to calculate emissions reductions.
Frequency of monitoring-recording	As verified by the verification team through remote assessment the parameter is continuous monitoring and monthly recording.
Value monitored	195,276  The value is verified by the verification team through, desk review and remote audit interviews /11/ and was found to be accurate.
Monitoring equipment	The verification team during the remote audit assessment confirmed that the Energy meter with Serial No: XC548932 is used.
QA-QC procedures to be applied	The verification team during the remote audit assessment confirmed that the energy meter is calibrated annually or as per industry standard/manufacture specification. Wherever there was a delay, PP has applied maximum permissible error conservatively to adjust the delay.  Refer Appendix 3 for the calibration details.
Purpose of the data	Calculation of baseline emissions
Calculation method	-
Comments	-

Data - Parameter	EL <sub>PJ,aux</sub>
Data unit	MWh
Description	Total auxiliary electricity consumption required for the operation of the power plants at the project site in year y (MWh)
Source of data	Plant record
Description of measurement methods and procedures to be applied	Verification team through remote audit/11/ and desk review /06/ confirms The auxiliary consumption is monitored using trivector energy meter of accuracy class 0.5s.
Frequency of monitoring-recording	As verified by the verification team through remote assessment the parameter is continuous monitoring and monthly recording.
Value monitored	24,296  The value is verified by the verification team through, desk review and remote audit interviews /11/ and was found to be accurate.
Monitoring equipment	The verification team during the remote audit assessment confirmed that the Energy meter with Serial No: 34163030581 is used.
QA-QC procedures to be applied	The verification team during the remote audit assessment confirmed that the energy meter is calibrated annually or as per industry standard/manufacturer specification.  Refer Appendix 3 for the calibration details.
Purpose of the data	Calculation of baseline emissions
Calculation method	-
Comments	-

Data - Parameter	NCV <sub>BR,n,y</sub>
Data unit	GJ/Tonne
Description	Net calorific value of biomass residue of category n in year y (GJ/tonne on dry-basis)

Source of data	Onsite measurement			
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ and desk review /06/ confirms that measurements are carried out at reputed laboratories and according to relevant international standards. Measure the NCV on dry- basis.			
Frequency of monitoring-recording	At least every six months, taking at least three samples for each measurement. as verified by the verification team through remote assessment.			
Value monitored	2017	2018	2019	2020 (Jan-Sept)
	13.149	13.167	13.298	13.100
	Verification team through remote audit interviews /11/ confirms that Net calorific value of biomass residue of category n in year y is reported adequately by the PP. Based on the local and sectoral expertise of VVB, it can be confirmed that the risk husk has the average value in the range of report value by the PP.			
Monitoring equipment	Calculated as observed by the verification team during the remote audit assessment.			
QA-QC procedures to be applied	The verification team during the remote audit assessment confirmed that the NCV is determined on the basis of dry biomass. The in house team responsible was interviewed to confirm the methodology/sample selection inter alia, VVB confirms that NCV was monitored in accordance with the standard procedures. Based on the sectoral expertise VVB confirms that the NCV results are reasonable in Indian context.			
Purpose of the data	To check energy balance			
Calculation method	-			
Comments	-			

Data - Parameter	h <sub>LOW,y</sub>
	h <sub>HIGH,y</sub>

Data unit	GJ/Tonne				
Description	$h_{LOW,y}$ = Specific enthalpy of the heat carrier at the process heat demand side (GJ/tonnes)  $h_{HIGH,y}$ = Specific enthalpy of the heat carrier at the heat generator side (GJ/tonnes)				
Source of data	Plant Record				
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms that the specific enthalpies are determined based on the temperatures and, in case of superheated steam, the pressure. Steam tables or appropriate thermodynamic equations are used to calculate the enthalpy as a function of temperature and pressure				
Frequency of monitoring-recording	Determined ex-ante according to project configuration, as verified by the verification team through remote assessment.				
Value monitored	<b>Year</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020 (Jan-Sept)</b>
	$h_{LOW,y}$	653.278	653.278	653.278	653.278
	$h_{HIGH,y}$	3,300.887	3,311.33	3,305.678	3,304.447
	VVB confirms that the enthalpy has been adequately reported by the PP corresponding to monitored temperature/pressure of outlet steam and input water.				
Monitoring equipment	N/A as calculated parameter based on the above monitored parameters i.e. pressure and temperature.				
QA-QC procedures to be applied	N/A as calculated parameter based on the above monitored parameters i.e. pressure and temperature.				
Purpose of the data	Baseline Emissions				
Calculation method	Calculated parameter based on the above monitored parameters i.e. pressure and temperature.				
Comments	-				

Data - Parameter	<b>Moisture content of the biomass residues</b>
Data unit	%

Description	Moisture content of each biomass residues type k				
Source of data	Onsite measurement				
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms that biomass residue moisture content is monitored and registered by taking periodic samples from each biomass type flow to the power boiler. Humidity content is calculated by evaporating the water of the samples and measuring the weight before and after the water has been evaporated. This process is carried out in dedicated scales.				
Frequency of monitoring-recording	The moisture content is monitored for each batch of biomass of homogeneous quality, as verified by the verification team through remote assessment.				
Value monitored	<b>Year</b>	2017	2018	2019	2020 (Jan-Sept)
	Moisture Content	12.89%	12.40	12.15	11.94
	Verification team through remote audit interviews /11/ confirms that Moisture content of each biomass residues type k is adequately sourced by the third party NCV reports.				
Monitoring equipment	Verification team through remote audit interviews /11/ confirms that moisture content is measured locally, in reputed laboratories.				
QA-QC procedures to be applied	The in house team was trained and training records furnished to VVB.				
Purpose of the data	To calculate dry basis weight of biomass, as verified by the verification team through remote assessment.				
Calculation method	-				
Comments	-				

Data - Parameter	<b>LOC<sub>y</sub></b>
Data unit	Hour
Description	Length of the operational campaign in year y (hour)
Source of data	Plant record

Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms that record and sum the hours of operation of the project activity facilities during year y				
Frequency of monitoring-recording	As verified by the verification team through remote assessment the parameter is continuous monitoring and monthly recording.				
Value monitored	Year	2017	2018	2019	2020 (Jan-Sept)
	Operating hours	8,239.5	8,430	8,289	5,871
	Verification team through remote audit interviews /11/ confirms that Length of the operational campaign in year y (hour) is adequately sourced from the plant logs.				
Monitoring equipment	Calculated				
QA-QC procedures to be applied	calculated based on the daily operating hours, daily operation hours are recorded in log books by shift in charge, verified by the plant head.				
Purpose of the data	Calculation of baseline emissions and project emissions, as verified by the verification team through remote assessment.				
Calculation method	Estimation is based on the total available hours per month in a year, considering maintenance outages both for internal and external reasons, as verified by the verification team through remote assessment.				
Comments	-				

Data - Parameter	$FC_{i,j,y}$
Data unit	Mass or volume unit per year (L/yr.)
Description	Quantity of fuel type i combusted in process j during the year y.
Source of data	Plant record/logbook
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms that On-site fossil fuel consumption is calculated

Frequency of monitoring-recording	As verified by the verification team through remote assessment the parameter is continuous monitoring and monthly recording.				
Value monitored	Year	2017	2018	2019	2020 (Jan-Sept)
	Diesel consumed	249	271	321	173
	Verification team through remote audit interviews /11/ confirms Quantity of fuel type i combusted in process j during the year y is adequately reported by the PP. Plant log registers on sample basis verified by the VVB and confirms that the reported values are adequate. Sample biomass invoices are crosscheck to find the appropriateness of reported value.				
Monitoring equipment	Volume measurement, as confirmed by verification team				
QA-QC procedures to be applied	The verification team through remote assessment confirms that the consistency of metered fuel consumption quantities are cross-checked by an annual energy balance that is based on purchased quantities and stock changes.				
Purpose of the data	Calculation of project emissions, as verified by the verification team through remote assessment.				
Calculation method	Diesel consumption in the power boiler, as verified by the verification team through remote assessment.				
Comments	-				

Data - Parameter	$NCV_{i,y}$
Data unit	GJ per mass or volume unit (e.g. GJ/m <sup>3</sup> , GJ/ton)
Description	Average net calorific value of fuel type i in year y.
Source of data	IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories.
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms that option d) (IPCC default values) is used in this case

Frequency of monitoring-recording	IPCC Guidelines, as verified by the verification team through remote assessment.
Value monitored	Diesel: 43.3 GJ/ton  The value is verified by the verification team through, desk review and remote audit interviews /11/ /06/and was found to be accurate.
Monitoring equipment	IPCC Guidelines
QA-QC procedures to be applied	N/A
Purpose of the data	Calculation of project emissions, as verified by the verification team through remote assessment.
Calculation method	Directly sourced from IPCC.
Comments	-

Data - Parameter	$\rho_{i,y}$
Data unit	Weighted average density of fuel type i in year y (Diesel)
Description	Weighted average net calorific value of fuel type i in year y.
Source of data	Bureau of Energy Efficiency, India Standard Value  <a href="#">Ch-01.qxd (beeindia.gov.in)</a>
Description of measurement methods and procedures to be applied	Not applicable, since the Project Proponent use data in line with national standard, as confirmed by the verification team
Frequency of monitoring-recording	IPCC Guidelines, as verified by the verification team through remote assessment.
Value monitored	Diesel: 0.87 kg/l  The value is verified by the verification team through, desk review and remote audit interviews /06//11/ and was found to be accurate.
Monitoring equipment	-
QA-QC procedures to be applied	-

Purpose of the data	Calculation of project emissions, as verified by the verification team through remote assessment.
Calculation method	-
Comments	-

Data - Parameter	$EF_{CO_2,i}$
Data unit	tCO <sub>2</sub> /TJ
Description	Weighted average CO <sub>2</sub> emission factor of fuel type i in year y.
Source of data	IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG inventories
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms that option d) (IPCC default values) is used in this case
Frequency of monitoring-recording	IPCC Guidelines, as verified by the verification team through remote assessment.
Value monitored	0.0748
Monitoring equipment	-
QA-QC procedures to be applied	-
Purpose of the data	Calculation of project emissions, as verified by the verification team through remote assessment.
Calculation method	-
Comments	-

Data - Parameter	$D_{f,m}$
Data unit	Kilometer
Description	Return Distance between the origin and destination of freight transportation activity f in monitoring period m.

Source of data	Records of vehicle operator and/or records by project participants.
Description of measurement methods and procedures to be applied	Verification team through remote audit /06/ confirms that once for each freight transportation activity f for a reference trip using the vehicle odometer or any other appropriate sources is used in this case
Frequency of monitoring-recording	Updated whenever the road distance changes, as verified by the verification team through remote assessment.
Value monitored	Diesel: 100  The value is verified by the verification team through, desk review and remote audit interviews /06//11/ and was found to be accurate.
Monitoring equipment	-
QA-QC procedures to be applied	All the suppliers are within the range of 50 KMs, as verified by the verification team through remote assessment.
Purpose of the data	Calculation of project emissions, as verified by the verification team through remote assessment.
Calculation method	-
Comments	-

Data - Parameter	$FR_{f,m}$
Data unit	Tonnes
Description	Total mass of freight transported in freight transportation activity f in monitoring period m
Source of data	Plant logbook/Invoices of Biomass
Description of measurement methods and procedures to be applied	Verification team through remote audit /11/ confirms that The quantity of biomass transported measured using weighbridge installed at site on each delivery and record is maintained in log-book. The distance also crosschecked with the sample
Frequency of monitoring-recording	On each delivery, as verified by the verification team through remote assessment.

Value monitored	Diesel: 468,486.072  The value is verified by the verification team through, desk review and remote audit interviews /06//11/ and was found to be accurate.
Monitoring equipment	Weighbridge, as verified by the verification team through remote assessment.
QA-QC procedures to be applied	The weighbridge calibrated on annual basis, as verified by the verification team through remote assessment.
Purpose of the data	Calculation of project emissions, as verified by the verification team through remote assessment.
Calculation method	Verification team through remote audit /11/ confirms that Biomass residues from third parties are measured (weighted) using dedicated weighbridges at the entrance of the biomass power plant.
Comments	-

**Remaining Issues from Validation or Previous Verification:**

This is the first verification of the registered project activity and from the review of validation report /3/, verification team confirms that no FAR was to be addressed during this verification.

**Finding:** CL 02, CL 03, CAR 01, CAR 02, CAR 03 were raised and successfully closed. Refer to appendix 2 for further details.

**Opinion:**

The verification team confirms that

- The project activity has been implemented and operated as per the registered VCS PD /3/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place, as per the documents provided by the PP and remote audit /11/
- The monitoring complies with the requirement of the applied methodology /10/;
- The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included above under each parameter and confirms to the requirement of the PD /3/;
- The values included in the monitoring report /1.3/ and corresponding emission reduction sheets /2.3/ are verified and included under each monitoring parameter.

## 4.2 Safeguards

### 4.2.1 No Net Harm

During the remote investigation /11/ verification team has confirmed the PP claims. And confirms that, As the source of electricity generation is biomass residue, i.e., rice husk residue and there is no net GHG emission from the project activity and in the absence of the project the biomass would have decayed in land to generate CH<sub>4</sub>. Hence there is no net harm.

### 4.2.2 Local Stakeholder Consultation

The local stakeholder consultation meeting for the project activity was not conducted as no serious breakdown or other changes happened after the commissioning, furthermore no concern raised during current monitoring period by any stakeholder, hence requirement of another stakeholder meeting was not necessary.

During the monitoring period there were no complaints about or demands from the project. The same was confirmed through the remote audit conducted during the monitoring period.

## 4.3 AFOLU-Specific Safeguards

This is not an AFOLU project.

## 4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The verification team has reviewed the emission reduction (ER) spread sheet /2.3/ and checked all the formulae and verified them to be correct and in line with the monitoring plan of the registered VCS PD and the applied monitoring methodology /10/.

All the monitored parameters are described above in section 4.1. All the ex-ante parameters which are used in the calculation of emission reduction are presented in section 4.1 of the MR /1.3/ transparently. It is confirmed that all the ex-ante parameters have been correctly used in the emission reduction calculation.

### **Baseline emissions:**

The baseline emissions (BE<sub>y</sub>) are calculated based on the following formula:

$$BE_y = EL_{BL,GR,y} * EF_{EG,GR,y}$$

Where:

$EL_{BL,GR,y}$	=	Baseline minimum electricity generation in the grid in year y (MWh)
$EL_{BL,y}$	=	Baseline electricity generation in year y (MWh)
$CAP_{EG,total,y}$	=	Baseline electricity generation capacity in year y (MWh)
y	=	Year of the crediting period

Period	Baseline Electricity generation (MWh)	Baseline electricity generation capacity (MWh)	Baseline minimum electricity generation in the grid (MWh)	Emission factor (tCO <sub>2e</sub> /MWh)	Total baseline emission (tCO <sub>2e</sub> )
	$EL_{BL,2017/2018/2019/2020}(\text{Jan-Sept})$	$CAP_{EG,total,2017/2018/2019/2020}(\text{Jan-sept})$	$EL_{BL,GR,2017/2018/2019/2020}(\text{Jan-Sept})$	$EF_{CM,grid}$	$BE_y$
01/01/2017-31/12/2017	47,622	23,760	23,862	0.9613	22,938
01/01/2018-31/12/2018	46,245	23,760	22,485	0.9613	21,615
01/01/2019-31/12/2019	47,686	23,760	23,926	0.9613	22,999
01/01/2020-30/09/2020	29,427	17,820	11,607	0.9613	11,157

### **Project Emissions:**

As per the methodology in line with methodology ACM0006 version 12.1.1 project emissions are calculated as emissions due to on-site consumption of fossil fuels according to the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”. The equation (1) and option B to calculate  $COEF_{i,y}$  has been used to calculate the project emission

$$PEFC_{j,y} = FC_{i,j,y} * COEF_{i,y}$$

$$COEF_{i,y} = NCV_{i,y} * EFCO2_{i,y}$$

Where:

$PEFC_{j,y}$  = CO<sub>2</sub> emissions from fossil fuel combustion in process j during the year y (tCO<sub>2</sub>/yr);

$FC_{i,j,y}$  = Quantity of fossil fuel type i consumed in process j during the year y (mass or volume unit/yr);

$COEF_{i,y}$  = CO<sub>2</sub> emission coefficient of fossil fuel type i in year y (tCO<sub>2</sub>/mass or volume unit);

$NCV_{i,y}$  = Net calorific value of fossil fuel type i in year y (GJ/mass or volume unit);

$EFCO2_{i,y}$  = CO<sub>2</sub> emission factor of fossil fuel type i in the year y (tCO<sub>2</sub>/GJ)

1.  $PE_{FF,y}$  = Project Emissions due to fossil fuel consumption at the project site.

Project Emission due to fossil fuel consumption at the project site $PE_{FF,y}$			
Period	Total diesel burnt (L)	Emission factor (tCO <sub>2e</sub> /L)	Project emission (tCO <sub>2e</sub> )
01/01/2017- 31/12/2017	249	0.0748	18.6252
01/01/2018- 31/12/2018	271	0.0748	20.2708
01/01/2019- 31/12/2019	321	0.0748	24.0108
01/01/2020- 30/09/2020	173	0.0748	12.9404
	<b>1,014</b>		<b>75.8472</b>

2.  $PE_{TR,y}$  = Project Emission due to transport of the biomass residues to the project plant.

Period	Biomass procured (Tonnes)	Return trip distance (km)	CO <sub>2</sub> Emission factor (gCO <sub>2e</sub> /km/t)	$PE_{TR,y}$ (tCO <sub>2e</sub> )
01/01/2017- 31/12/2017	123,726.70	100	245	3,032
01/01/2018- 31/12/2018	128,759.13	100	245	3,155
01/01/2019- 31/12/2019	125,899.86	100	245	3,085
01/01/2020- 30/09/2020	90,100.39	100	245	2,208
	<b>468,486.072</b>	<b>400</b>		<b>11,480.00</b>

Leakage:

As per registered PD, the most likely baseline scenario is that the biomass residues are dumped or left to decay without utilizing them for energy purposes, the leakage of the project activity is zero.

The following are the ex-ante parameters used in the ER calculation which are in compliance with registered VCS PD/3/:

Parameter	Description	Justification
Biomass categories and quantities used for the selection of the baseline scenario selection and assessment of additionality  Type, Source, use and Volume Unit (Tonnes or cubic meter)	The biomass quantities provided in the VCS PDD were determined ex- ante internally.	The value is determined by calculation of the new cogeneration plant also the estimation of ex-ante of the biomass types and quantities is assessed.
HCBR, CG/PO,x,i/j (HCBR,CG,x,1 , HCBR,CG,x,2)  GJ	Quantity of process heat extracted from the heat engine i/j in year x (GJ)	The value is used in the calculation of the Baseline emission.  The value data on the parameter is calculated according to Case 1 of the Step 1.5 for the calculation of baseline emissions of the methodology ACM0006 Version 12.1.1, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.
ELBR, CG/PO,x,i/j  MWh	Quantity of electricity generated in heat engine i/j in year x (MWh)	The value is used in the calculation of the Baseline emission.  The value data on the parameter is calculated according to Case 1 of the Step 1.5 for the calculation of baseline emissions of the methodology ACM0006 Version 12.1.1, which has been checked. Hence it is confirmed that the ex-

		ante details presented on the ex-ante parameter is found appropriate.
<b>CAP<sub>HG,h</sub></b> GJ/hour	Baseline capacity of heat generator h (GJ/h)	<p>The value is used in the calculation of the Baseline emission, and reflects the design maximum heat generation capacity (in GJ/h) of the baseline heat generation h.</p> <p>The value data on the parameter is based on baseline plant design parameters, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.</p>
<b>CAP<sub>EG,CG,i</sub></b> MW	Baseline electricity generation capacity of heat engine i (MW) (Cogeneration Mode)	<p>The value is used in the calculation of project emissions. It is the design maximum electricity generation capacity (in MW) of the baseline heat engines (Turbine) and is based on the installed capacity of the heat engine.</p> <p>The value data on the parameter is available in the Plant record, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.</p>
<b>LFC<sub>HG,h</sub></b>	Baseline load factor of heat generator h (ratio)	<p>The value is used in the calculation of project emissions, it reflect the maximum load factor</p> <p>The value data on the parameter is from On-site measurements, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.</p>
<b>HPR<sub>BL,i</sub></b>	Baseline heat-to-power ratio of the heat engine i (ratio)	<p>The value is used in the calculation of project emissions.</p> <p>The value data on the parameter is from On-site measurements or from the referenced plant design parameters which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.</p>
<b>LFC<sub>EG,CG,i</sub></b>	Baseline load factor of heat engine i (ratio) (cogeneration Mode)	<p>The value is based on 3 years historical data, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate</p> <p>This parameter reflects the maximum load factor (i.e. the ratio between the “actual electricity generation” of the heat engine and its “design maximum electricity generation”)</p>
<b>EF<sub>EG,GR,y</sub></b>	Combined margin CO <sub>2</sub> emission factor for	The value is used for calculation of baseline emissions and is calculated from Baseline CO <sub>2</sub> Emission Database,

	grid connected power generation in year y.	Version 11.0, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate
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According to the applied methodology /10/, the conservativeness of the achieved emission reduction was checked and the detailed emission reduction calculation has been transparently provided in the ER sheet /2.3/. All the formulae and the calculation procedure were checked by the verification team. In the opinion of verification team, the assumptions, emission factors and default values that were applied in the calculations have been justified. Also, the verification team confirms that there were no manual transposition errors between the data sets in the ER Sheet/2.3/ during the current monitoring period.

**Finding:** CL 01, CL 03 and CL 04 were raised and successfully closed. Refer to appendix 2 for further details.

**Opinion:** The verification team confirms;

- The monitoring plan has been implemented as per the registered PD /3/;
- The monitoring complies with the requirement of the applied methodology/10/;
- The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included above under each parameter and confirms to the requirement of the PD /3/;
- The values included in the monitoring report /1.3/ and corresponding emission reduction sheet /2.3/ are verified and included under each monitoring parameter, wherever appropriate.

## 4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

All relevant documents were checked to assess the correctness and quality of data submitted by the project participants, which are used to determine emission reductions.

All records needed for monitoring are archived in line with the requirements of the registered monitoring plan /3/. No significant lack of evidence and missing data were detected during remote audit discussion and video inspection /11/. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures. The monitoring parameters have been measured / determined without material misstatements and is in line with all applicable standards and relevant requirements. The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included in section 4.1 under each parameter and confirms to the requirement of the PD /3/. The export and import data is measured by the electricity meters, recorded continuously on the web site

of SEFFAFLIK<sup>2</sup> and the invoices are generated monthly/14/. The data is then reported annually on the VCS Monitoring Report as verified by the verification team through remote assessment.

It was also verified through remote audit inspection/11/ that the plant's team involved in the monitoring of project activity is well experienced. Hence, the verification team concludes that competent staff is employed by the project proponent to carry out the relevant tasks with sufficient accuracy. Furthermore, it was confirmed during remote audit discussion that internal training program for the monitoring staff are conducted on regular basis.

#### 4.6 Non-Permanence Risk Analysis

This is not relevant for the project activity. PP has not determined any non-permanence risk rating for the project activity.

## 5 VERIFICATION CONCLUSION

KBS Certification Services Pvt. Ltd. has been contracted by, "PA RESEARCH & CONSULTANTS PVT. LTD" to undertake 1st verification and certification for the greenhouse gas (GHG) emission reductions reported from '5MW biomass based cogeneration project at Sainsons' for the monitoring period 01/01/2017 - 30/09/2020, under the crediting period 01/10/2016 - 30/09/2026, in the initial monitoring report version 01 dated 15/12/2020, with regard to the relevant requirements of VCS Standard Version 4.

The management of the 'Sainsons Paper Industries Limited ' is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project final Monitoring Report Version 4 dated 17/05/2021. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the 'Sainsons Paper Industries Limited '. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 4 dated 17/05/2021.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 01/01/2017 - 30/09/2020 based on the reported emission reductions in the final Monitoring Report Version 4 dated 17/05/2021for the same period.

As a result of the verification, the verification team confirms that:

- All operations of the project are implemented and installed as planned and described in the project description.

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<sup>2</sup>Electricity generation data <https://seffaflik.epias.com.tr/transparency/>.

- The monitoring system is in place and functional.
- The installed equipment essential for generating emission reductions runs reliably.
- The GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.
  
- Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

Verification period: From 01/01/2017 - 30/09/2020

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

Year	Baseline emissions or removals (tCO <sub>2</sub> e)	Project emissions or removals (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Net GHG emission reductions or removals (tCO <sub>2</sub> e)
2017	22,938	3,051	0	19,887
2018	21,615	3,176	0	18,439
2019	22,999	3,110	0	19,889
2020 (Jan-Sept)	11,157	2,221	0	8,936
Total	78,709	11,558	0	67,151

Location: Faridabad

Date: 19/05/2021



Authorized Signatory: Kaushal Goyal

Designation: Managing Director

KBS Certification Services Pvt. Ltd.

# APPENDIX 1: REFERENCES

/1/	<p>/1.1/ Monitoring Report, Version 01, dated 15/12/2020 (Initial Version)</p> <p>/1.2/ Monitoring Report, Version 2 dated 19/02/2021 (Intermediate Version)</p> <p>/1.3/ Monitoring Report, Version 3 dated 05/03/2021</p> <p>/1.4/ Monitoring Report, Version 4 dated 17/05/2021 (Final Version)</p>
/2/	<p>/2.1/ Emission Reduction calculation sheet, Version 01 dated 15/12/2020 (corresponding to initial Version of VCS MR)</p> <p>/2.2/ Emissions Reduction calculation Sheet, Version 2 dated 19/02/2021 (corresponding to Intermediate Version of VCS MR)</p> <p>/2.3/ Emissions Reduction calculation Sheet, Version 2 dated 05/03/2021 (corresponding to final Version of VCS MR)</p>
/3/	<ul style="list-style-type: none"> <li>• Registered VCS-PD version 3 dated 09/09/2016</li> <li>• Validation report dated 12/09/2016</li> </ul>
/4/	VCS Standard Version 4
/5/	VCS Programme guide Version 4
/6/	Technical specifications/photographs of main equipments, electricity meters etc.
/7/	Single line diagram and meter location / Layout
/8/	Electricity production bills dated 8/05/2019
/9/	Commissioning Certificate dated 01/01/2017
/10/	“Consolidated methodology for electricity and heat generation from biomass residues”, ACM 0006, Version: 12.1.1, EB 69
/11/	<p>Remote auditing (05/02/2021) for verification of measuring and monitoring procedure,</p> <ul style="list-style-type: none"> <li>• Video recordings &amp; snapshots of the project site/equipment's</li> <li>• Interviews and data/log review</li> </ul>
/12/	Project Scenario map (validated PDD)
/13/	Calibration Certificates for main meter and check meter
/14/	Invoices raised during the monitoring period
/15/	Verification contract signed between KBS and PP
/16/	Organization structure/chart

/17/	Tool to calculate the emission factor for an electricity system
/18/	Diesel consumption records
/19/	Plant Logs for the diesel consumption, biomass use, temperature/pressure of steam, operational hours etc.

## APPENDIX 2: FINDINGS

Summary of findings	CL	CAR	FAR
	03	03	00

**Table 1. Remaining FAR from validation and/or previous verifications**

No remaining FAR from validation

<b>FAR ID</b>	xx	<b>Section no.</b>		<b>Date: DD/MM/YYYY</b>
<b>Description of FAR</b>				
<b>Project participant response</b>				<b>Date: DD/MM/YYYY</b>
<b>Documentation provided by project participant</b>				
<b>VVB assessment</b>				<b>Date: DD/MM/YYYY</b>

**Table 2. CL from this verification**

Date	Type & Number	Raised by	Reference
06/02/2021	CL# 01	Assessment team	D-30
<b>Non conformities raised</b>			
<p>During the remote assessment it was confirmed by the plant personnel that they are also using paddy straw for combustion in addition to rice husk, clarification required whether the surplus biomass study was undertaken for the paddy straw during the validation?</p>			
<b>Project Participants response</b>		<b>Date:</b> 15/02/2021	
<p>Biomass resource assessment was done during validation process, wherein paddy straw is also established as surplus biomass along with rice husk, the reports were shared with the DOE. During the current monitoring period, only rice husk has been used for combustion.</p>			
<b>Documentation Provided as Evidence by Project Participant</b>			
Revised MR			
<b>Information Verified by Team Leader</b>		<b>Date of review:</b> 01/03/2021	
Revised MR			
<b>Reasoning for not acceptance or close out</b>			
<p>Based on the justification provided by PP and by reviewing the surplus biomass assessment, it is confirmed by VVB that paddy straw was part of biomass demonstrably surplus thus the reasoning is accepted to VVB.</p>			
<b>Date of acceptance or non-acceptance</b>		<b>Date:</b> 01/03/2021	Status: <i>closed</i>

Date	Type & Number	Raised by	Reference
06/02/2021	CL# 02	Assessment team	D-30
<b>Non conformities raised</b>			
<p>1. Provide the following evidences to validate the information provided in the VCS PD:</p> <ul style="list-style-type: none"> <li>a) Declaration letter is required from the PP that the project activity is not registered under any other GHG programme.</li> <li>b) Total annual production records of paper/final product during the monitoring period.</li> <li>c) Technical specifications sheets of key equipment used in the project activity viz boiler, turbine along with the photographs of name plates.</li> <li>d) Invoices of biomass samples for each month in the current monitoring period</li> <li>e) Biomass stock register (for the monitoring period)</li> <li>f) Shutdown details of the plant during the monitoring period.</li> <li>g) NCV test reports undertaken by the third part lab</li> <li>h) Copies of grid electricity bills for verifying the reduction in grid electricity, samples for 2017, 2018, 2019 shall be furnished by PP.</li> <li>i) Copies of plant logbooks to verify the quantity of biomass, steam generation, auxiliary and gross electricity generation shall be furnished.</li> <li>j) Copy of evidences for diesel consumption.</li> </ul>			
<b>Project Participant's response</b>		<b>Date:</b> 15/02/2021	
The relevant supporting documents like production records, electricity bills, technical specification of boiler and turbine, etc., have been shared			
<b>Documentation Provided as Evidence by Project Participant</b>			
<p><i>Production records,</i></p> <p><i>Technical specifications</i></p> <p><i>Electricity bills</i></p> <p><i>Biomass invoices</i></p>			
<b>Information Verified by Team Leader</b>		<b>Date of review:</b> 01/03/2021	

<p><i>Production records,</i></p> <p><i>Technical specifications</i></p> <p><i>Electricity bills</i></p> <p><i>Biomass invoices</i></p>		
<p><b>Reasoning for not acceptance or close out</b></p>		
<p>All requested documents have been furnished by PP and the same were used in verification for verifying various requirements.</p>		
<p><b>Date of acceptance or non-acceptance</b></p>	<p><b>Date:</b> 01/03/2021</p>	<p><b>Status:</b> <i>Closed</i></p>

Date	Type & Number	Raised by	Reference																																																																								
06/02/2021	CL# 03	Assessment team	D-30																																																																								
<b>Non conformities raised</b>																																																																											
<p>Verification team independently cross checked the quantity of biomass and steam generation, following graph was plotted and it was observed that quantity of biomass remains unchanged for some months despite of significant less steam production viz month of Sept 2017, July 2018, April 2020 etc :</p>																																																																											
<table border="1"> <caption>Approximate data from the chart</caption> <thead> <tr> <th>Month</th> <th>Steam Generation (Tonnes)</th> <th>Quantity of Dry Biomass (Tonnes)</th> </tr> </thead> <tbody> <tr><td>Jan-17</td><td>45000</td><td>8000</td></tr> <tr><td>Mar-17</td><td>40000</td><td>8000</td></tr> <tr><td>May-17</td><td>45000</td><td>8000</td></tr> <tr><td>Jul-17</td><td>45000</td><td>8000</td></tr> <tr><td>Sep-17</td><td>22000</td><td>8000</td></tr> <tr><td>Nov-17</td><td>38000</td><td>8000</td></tr> <tr><td>Jan-18</td><td>48000</td><td>8000</td></tr> <tr><td>Mar-18</td><td>52000</td><td>8000</td></tr> <tr><td>May-18</td><td>45000</td><td>8000</td></tr> <tr><td>Jul-18</td><td>30000</td><td>8000</td></tr> <tr><td>Sep-18</td><td>52000</td><td>8000</td></tr> <tr><td>Nov-18</td><td>50000</td><td>8000</td></tr> <tr><td>Jan-19</td><td>55000</td><td>8000</td></tr> <tr><td>Mar-19</td><td>45000</td><td>8000</td></tr> <tr><td>May-19</td><td>55000</td><td>8000</td></tr> <tr><td>Jul-19</td><td>35000</td><td>8000</td></tr> <tr><td>Sep-19</td><td>58000</td><td>8000</td></tr> <tr><td>Nov-19</td><td>50000</td><td>8000</td></tr> <tr><td>Jan-20</td><td>25000</td><td>8000</td></tr> <tr><td>Mar-20</td><td>35000</td><td>8000</td></tr> <tr><td>May-20</td><td>18000</td><td>8000</td></tr> <tr><td>Jul-20</td><td>35000</td><td>8000</td></tr> <tr><td>Sep-20</td><td>50000</td><td>8000</td></tr> </tbody> </table>				Month	Steam Generation (Tonnes)	Quantity of Dry Biomass (Tonnes)	Jan-17	45000	8000	Mar-17	40000	8000	May-17	45000	8000	Jul-17	45000	8000	Sep-17	22000	8000	Nov-17	38000	8000	Jan-18	48000	8000	Mar-18	52000	8000	May-18	45000	8000	Jul-18	30000	8000	Sep-18	52000	8000	Nov-18	50000	8000	Jan-19	55000	8000	Mar-19	45000	8000	May-19	55000	8000	Jul-19	35000	8000	Sep-19	58000	8000	Nov-19	50000	8000	Jan-20	25000	8000	Mar-20	35000	8000	May-20	18000	8000	Jul-20	35000	8000	Sep-20	50000	8000
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<b>Project Participant's response</b>		<b>Date:</b> 19/02/2021																																																																									
There were some errors in the values, has been corrected in the revised ER sheet.																																																																											
<b>Documentation Provided as Evidence by Project Participant</b>																																																																											
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<b>Reasoning for not acceptance or close out</b>																																																																											
PP responded that there were errors while transferring data from sources to ER sheet, evidences furnished by them were reviewed to confirm the argument. VVB closed the finding based on the revised ER sheets and submitted plant logs.																																																																											
<b>Date of acceptance or non-acceptance</b>		<b>Date:</b> 01/03/2021	<b>Status:</b> <i>closed</i>																																																																								

**Table 3. CAR from this verification**

Date	Type & Number	Raised by	Reference
06/02/2021	CAR# 01	Assessment team	D-30
<b>Non conformities raised</b>			
The monitoring period mentioned in the VCS PD is starting after the crediting period start date of project activity. PD mentions the start date of crediting period as 01/10/2016 whereas the MR indicates the monitoring period from 01/01/2017 onwards.			
<b>Project Participants response</b>		<b>Date : 15/02/2021</b>	
<i>The start date of the project activity was expected to be 01/10/2016. However, the actual start date of the project is 01/01/2017. So, the start of monitoring period has been taken from 01/01/2017.</i>			
<b>Documentation Provided as Evidence by Project Participant</b>			
<i>Monitoring report version 2</i>			
<b>Information Verified by Team Leader</b>		<b>Date of review: 01/03/2021</b>	
<i>Monitoring report version 2</i>			
<b>Reasoning for not acceptance or close out</b>			
Monitoring period chosen from the actual commissioning of plant deems reasonable therefore argument provided by is accepted by VVB.			
<b>Date of acceptance or non-acceptance</b>		<b>Date:</b>	Status: <i>closed</i>

Date	Type & Number	Raised by	Reference
06/02/2021	CAR# 02	Assessment team	D-30
<b>Non conformities raised</b>			
Under section 4.1 i.e. Data and Parameters Available at Validation, for the monitoring parameter ' <i>Biomass categories and quantities used for the selection of the baseline scenario selection and assessment of additionality</i> ' refers the table for each type of biomass however it is not clear from the statement that which table PP is referring to. Explicit reference of section is missing.			
<b>Project Participants response</b>		<b>Date: 15/02/2021</b>	

<p><i>There was a typo error as rice husk is only used during current monitoring period. The same has been corrected in the revised MR.</i></p>		
<p><b>Documentation Provided as Evidence by Project Participant</b></p>		
<p><i>Monitoring Report version 2</i></p>		
<p><b>Information Verified by Team Leader</b></p>	<p><b>Date of review: 01/03/2021</b></p>	
<p><i>Monitoring Report version 2</i></p>		
<p><b>Reasoning for not acceptance or close out</b></p>		
<p>The PP has revised MR and reference of table included therein. Finding is closed.</p>		
<p><b>Date of acceptance or non-acceptance</b></p>	<p><b>Date: 01/03/2021</b></p>	<p>Status: <i>closed</i></p>

Date	Type & Number	Raised by	Reference
06/02/2021	CAR# 03	Assessment team	D-30
<p><b>Non conformities raised</b></p>			
<p>The diagram/layout for monitoring equipment/ is not included in the submitted VCS PD, refer the requirement of PD filling guideline.</p>			
<p><b>Project Participant's response</b></p>		<p><b>Date: 15/02/2021</b></p>	
<p>A diagram for monitoring equipment has been included in the revised VCS MR</p>			
<p><b>Documentation Provided as Evidence by Project Participant</b></p>			
<p><i>Monitoring report version 02</i></p>			
<p><b>Information Verified by Team Leader</b></p>		<p><b>Date of review: 01/03/2021</b></p>	
<p><i>Monitoring report version 02</i></p>			
<p><b>Reasoning for not acceptance or close out</b></p>			
<p>Diagram of monitoring process is now part of revised MR, finding is closed.</p>			
<p><b>Date of acceptance or non-acceptance</b></p>		<p><b>Date: 01/03/2021</b></p>	
		<p>Status: <i>closed</i></p>	

**Table 3. FAR from this verification**

No FAR raised during this verification.

FAR ID	Xx	Section no.		Date:DD/MM/YYYY
<b>Description of FAR</b>				
<b>Project participant response</b>				<b>Date:DD/MM/YYYY</b>
<b>Documentation provided by project participant</b>				
<b>VVB assessment</b>				<b>Date: DD/MM/YYYY</b>

# APPENDIX 3: CALIBRATION OF MONITORING EQUIPMENT

<p><b>Stem temperature transmitter</b></p> <p>Range: 0-1200 °C</p> <p>Resolution: 0.1 °C</p> <p>Accuracy: ±0.2%</p> <p>Make: Yokogava</p> <p>Type: K type</p> <p>Serial No.: C2S101681</p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>
<p><b>Stem temperature indicator with sensor</b></p> <p>Range: 0-1200 °C</p> <p>Resolution: 0.01 °C</p> <p>Accuracy: ±0.05%</p> <p>Make: Yokogava</p> <p>Type: K type</p> <p>Serial No.: T1L619073</p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>
<p><b>Feed water temperature gauge</b></p> <p>Range: 0-300 °C</p> <p>Resolution: 5 °C</p> <p>Accuracy: ±1%</p> <p>Make: General</p> <p>Serial No.: BG19013237</p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>
<p><b>Pressure Gauge (Steam)</b></p> <p>Range: 0-160kg/cm<sup>2</sup></p> <p>Resolution: 5 kg/cm<sup>2</sup></p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>

Make: General Serial No.: 13121260	
<b>Stem flow totalizer</b> Range: 0-60 TPH Resolution: 0.01 TPH Make: Masibus Model No.: 1006 Serial No: 10118151	<b>DATE OF CALIBRATION:</b> 01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020
<b>Energy meter</b> Make: Schneider Electric Accuracy: 0.2s Model: EM6436 Serial No.: 34163030581	<b>DATE OF CALIBRATION:</b> 12/12/2016, 26/12/2017, 04/12/2018, 18/12/2019
Delay in calibration have been observed from 12/12/2017 to 25/12/2017 and 04/12/2019 to 17/12/2019, hence taking a conservative approach error is applied for whole month of Dec 2017 and Dec 2019.	
<b>Energy meter</b> Make: Secure meter Accuracy: 0.2s Model: E3M024 Serial No.: XC548932	<b>DATE OF CALIBRATION:</b> 12/12/2016, 26/12/2017, 04/12/2018, 18/12/2019
Delay in calibration have been observed from 12/12/2017 to 25/12/2017 and 04/12/2019 to 17/12/2019, hence taking a conservative approach error is applied for whole month of Dec 2017 and Dec 2019.	
<b>Weighbridge</b> Make: Multi Weigh India Pvt. Ltd. Serial No.: IND/2003/294	<b>DATE OF CALIBRATION:</b> 16/02/2017, 09/06/2018, 07/02/2019, 13/02/2020

<p><b>Stem temperature transmitter</b></p> <p>Range: 0-1200 °C</p> <p>Resolution: 0.1 °C</p> <p>Accuracy: ±0.2%</p> <p>Make: Yokogava</p> <p>Type: K type</p> <p>Serial No.: C2S101681</p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>
<p><b>Stem temperature indicator with sensor</b></p> <p>Range: 0-1200 °C</p> <p>Resolution: 0.01 °C</p> <p>Accuracy: ±0.05%</p> <p>Make: Yokogava</p> <p>Type: K type</p> <p>Serial No.: T1L619073</p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>
<p><b>Feed water temperature gauge</b></p> <p>Range: 0-300 °C</p> <p>Resolution: 5 °C</p> <p>Accuracy: ±1%</p> <p>Make: General</p> <p>Serial No.: BG19013237</p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>
<p><b>Pressure Gauge (Steam)</b></p> <p>Range: 0-160kg/cm<sup>2</sup></p> <p>Resolution: 5 kg/cm<sup>2</sup></p> <p>Make: General</p> <p>Serial No.: 13121260</p>	<p><b>DATE OF CALIBRATION:</b></p> <p>01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020</p>
<p><b>Stem flow totalizer</b></p>	<p><b>DATE OF CALIBRATION:</b></p>

Range: 0-60 TPH Resolution: 0.01 TPH Make: Masibus Model No.: 1006 Serial No: 10118151	01/10/2016, 30/09/2017, 29/09/2018, 28/09/2019, 26/09/2020
<b>Energy meter</b> Make: Schneider Electric Accuracy: 0.2s Model: EM6436 Serial No.: 34163030581	<b>DATE OF CALIBRATION:</b> 12/12/2016, 26/12/2017, 04/12/2018, 18/12/2019
Delay in calibration have been observed from 12/12/2017 to 25/12/2017 and 04/12/2019 to 17/12/2019, hence taking a conservative approach error is applied for whole month of Dec 2017 and Dec 2019.	
<b>Energy meter</b> Make: Secure meter Accuracy: 0.2s Model: E3M024 Serial No.: XC548932	<b>DATE OF CALIBRATION:</b> 12/12/2016, 26/12/2017, 04/12/2018, 18/12/2019
Delay in calibration have been observed from 12/12/2017 to 25/12/2017 and 04/12/2019 to 17/12/2019, hence taking a conservative approach error is applied for whole month of Dec 2017 and Dec 2019.	
<b>Weighbridge</b> Make: Multi Weigh India Pvt. Ltd. Serial No.: IND/2003/294	<b>DATE OF CALIBRATION:</b> 16/02/2017, 09/06/2018, 07/02/2019, 13/02/2020

# APPENDIX 4: COMPETENCE OF TEAM MEMBERS

<b>Personnel Name:</b>		Sanjay Kandari	
<b>Qualified to work as:</b>			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input checked="" type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>	<b>Technical Area</b>		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal TA 13.2 Manure		
Approved by (Manager C & T)	Akhilesh Joshi		
Approval date:	11/12/2015		

<b>Personnel Name:</b>		Ms. Ananya Malik	
<b>Qualified to work as:</b>			
Team Leader	<input type="checkbox"/>	Technical Expert	<input type="checkbox"/>
Validator/Verifier – trainee	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert	<input type="checkbox"/>

Area(s) of Technical Expertise	
Sectoral Scope	Technical Area
-	-
Approved by (Manager C & T)	Sanjay Kandari
Approval date:	07/12/2020

Personnel Name:		Tushar Chaudhari	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input checked="" type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal		
Approved by	Manager Competency & Training		
Approval date:	02/09/2020		