



**Verified Carbon
Standard**

AAC BLOCK/PANEL MANUFACTURING UNIT AT KRISHNA, ANDHRA PRADESH



By KBS Certification Services Pvt. Ltd.

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Summary:

KBS Certification Services Pvt. Ltd. has been contracted by, “EnvironmentFirst Energy Services (P) Limited” to undertake 2nd verification and certification for the greenhouse gas (GHG) emission reductions reported from project registered under VCS with VCS ID 1342 titled ‘AAC Block/Panel Manufacturing unit at Krishna, Andhra Pradesh’, for the monitoring period 01-January-2016 to 31-May-2021 (Inclusive of both days), under the crediting period 01-August-2013 to 31-July-2023, in the initial monitoring report version 01 dated 14-June-2021, with regard to the relevant requirements of VCS Standard, Version 4.1.

The ‘AAC Block/Panel Manufacturing unit at Krishna, Andhra Pradesh’ has installed an autoclaved aerated concrete (AAC) blocks manufacturing unit of capacity 1,50,000 m³/annum with an expansion plan to reach at 2,40,000 m³/annum in Andhra Pradesh State India. The plant started its operation on 01-August-2013, and till date the capacity has been 1,50,000 m³/annum. No expansion work has been carried out yet. In near future, the expansion will be planned.

AAC blocks manufactured at the project plant are using waste material fly ash generated from thermal power plants as the primary raw material and are replacing conventional fired (baked) clay bricks as construction material. The specific energy demand for manufacturing AAC blocks is lower as compared to conventional clay bricks. AAC blocks are being manufactured by the autoclaving process, which is less energy intensive as compared to, the thermal baking process used for manufacturing of fired clay bricks. Thus, the project activity results in lower greenhouse gas emission as compared to the conventional clay bricks manufacturing process.

The verification is based on the registered VCS PD, Monitoring report (MR), Emission reduction calculation spread sheet (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.

The crediting period for VCS Project activity began on 01-August -2013 and will end on 31-July - 2023. This is the 2nd monitoring period under first crediting period under VCS and covers the activity from 01-January-2016 to 31-May-2021 (inclusive of both dates). The total emission reductions achieved for the project activity during the monitoring period has been 129,382 tCO_{2e}. An undertaking from the project participant confirms that project will not claim any other scheme benefits for the concerned monitoring period.

A rule based approach has been followed to perform the verification of the project activity. In the course of verification, 01 Corrective Action Requests (CARs) and 03 Clarification Requests (CLs) have been raised. All the CARs and CLs have been closed out successfully. No FAR has been raised during this verification, project validation or the previous verification.

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- January -2016 to 31-May-2021 (Inclusive of both days) based on the reported emission reductions in the final monitoring report version 02 dated 09-September-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 4.1/4/.
- The project is in line with all relevant VCS requirements as per VCS Programme guide version 4.0 /05/
- 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 AMS III.Z. - “Fuel switch, process improvement and energy efficiency in brick manufacture” Version 5.0/9/.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 129,382 tCO_{2e} (round down value) emission reductions during the monitoring period 01-January-2016 to 31-May-2021 (Inclusive of both days), under the crediting period 01-August-2013 to 31-July-2023.

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1 INTRODUCTION

1.1 Objective

KBS Certification Services Pvt. Ltd. has been contracted by, “ENVIRONMENTFIRST ENERGY SERVICES (P) LIMITED” to undertake verification and certification for the greenhouse gas (GHG) emission reductions reported from ‘AAC Block/Panel Manufacturing unit at Krishna, Andhra Pradesh’ with regard to the relevant requirements of VCS Standard Version 4.1/4/. The monitoring period for current verification is 01-January-2016 to 31-May-2021 (Inclusive of both days), under the crediting period 01-August-2013 to 31-July-2023, in the initial monitoring report version 01 dated 14-June-2021/1.1/, 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/VCUs) 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 4.1 and related rules and guidance/5/. KBS has, based on the recommendations in the latest version of Verified Carbon standard, 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/9/.
- 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 4.1/4/. KBS has focussed 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 4.1 (VCS Program guide Version 4.0 & VCS Standard Version 4.1)
- Criteria of CDM approved methodology, AMS III.Z Version 05.0
- VCS Monitoring Report
- Monitoring Plan
- Background investigation and follow up interviews
- Stakeholder feedback
- Registered VCS 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 boiler, meters etc.
- Remote audit (19-July-2021) for verification
- Material transport log books, purchase invoices
- Calibration Certificates

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 approach is 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/9/ 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

Greenway Building Materials India Pvt. Ltd. has installed an autoclaved aerated concrete (AAC) blocks manufacturing unit of capacity 1,50,000 m³/annum with an expansion plan to reach at 2,40,000 m³/annum in Andhra Pradesh State India. The plant has started its operation on 01-August-2013, and till date the capacity has been 1,50,000 m³/annum.

AAC blocks manufactured at the project plant are using waste material fly ash generated from thermal power plants as the primary raw material. The AAC blocks produced is replacing conventional fired (baked) clay bricks as construction material. The specific energy demand for manufacturing AAC blocks is lower as compared to conventional clay bricks. AAC blocks are being manufactured by the autoclaving process, which is less energy intensive as compared to the thermal baking process used for manufacturing of fired clay bricks. Thus, the project activity results in lower greenhouse gas emission as compared to the conventional clay bricks manufacturing process.

During the remote audit inspection/10/, location (as mentioned in section 1.7 of MR) and all the technical aspects of the project activity (equipments, serial nos., type etc.) mentioned in the registered VCS PD/3/ have been verified. The same was also crosschecked during the desk review of supporting documents like License to work factory/16/, consent to operate/17/.

Project entity information as verified is presented below:

Item	Data
Project Entities	Greenway Building Materials India Pvt. Ltd.
	EnvironmentFirst Energy Services (P) Limited

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification process was carried out in line with the requirements of VCS Version 4.1/4/. 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 rule-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 rule-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 rule-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	16-June-2021
Remote audit	19-July-2021 (Justification section 2.4 below)
Draft Verification Report	06-September-2021
Final Verification Report	15-September-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 'Appendix I'.

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-March-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 3.2/5/.

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:

Dates:	19-July-2021 Zoom application	
Key points discussed:	Name of person, interviewed	Designation, Organization
VCS requirements, Operational data, Monitoring equipment, Calibration, Data collection, storage, Archiving QA/QC procedures Training of monitoring personnel Calculation of ERs Grievance procedure O &M procedures	Mr G V Pavan Kumar	AGM Operations, Greenway Building Materials India Pvt. Ltd.
	Mr Anand Kumar	Finance head, Greenway Building Materials India Pvt. Ltd.
	Mr Abhishek Mazumdar	CMD, EnvironmentFirst

2.5 Resolution of Findings

KBS applies the rule-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/1.2/; resolving the CARs & CLs raised and outstanding concerns, KBS issues this final verification report and opinion.

01 CARs and 03 CLs 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 II of this report. The revised MR/1.2/ 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

Project validation report and verification report/3/ of the previous monitoring period were checked, and it was confirmed that no FAR was raised previously and no FAR has been raised in current verification. Refer to Appendix II for further details.

2.6 Eligibility for Validation Activities

KBS conducted the verification activity for 2nd verification period; the validation and earlier verification were 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

Not applicable

3.2 Methodology Deviations

No methodology deviation involved

3.3 Project Description Deviations

No project description deviation observed

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/10/ of the site. All the physical components and project boundary are in conformity with the description in registered VCS PD/03/. The project locations and project equipment capacities have been confirmed during the remote inspection and found in-compliance with the registered VCS PD/03/. There is no transfer of technology from outside the host country for this project activity.

Based on the remote inspection and the reviewed project documentation like, photographs of meters/06/, single line diagram/07/, material log books and invoices/15/ etc. the verification team confirms that the project was implemented and operated as described in the registered VCS PD/03/. Further, the verification team confirms that-

- There is no 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 activity is availing GHG emission reductions for only one program and there will not be any double accounting for the same.
- There is no methodology deviation applied to this project.

The project capacity is 1,50,000 m³/annum which was verified during the remote audit and based on statutory documents submitted/16//17/.

Further, it was confirmed that during the monitoring period the project activity operated under normal conditions and the only significant event that has had an impact on the project activity is the shut down that occurred during the lockdown period in April 2020 monitoring. This led to a limited production in plant and has been checked from the operational data (production, purchase and consumption) during remote auditing.

Ownership and other programs:

PP has declared/14/ that the project is registered in VCS, and will avail GHG emissions reductions for only one program and there will not be any double accounting for the same; 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.

Findings: CL 01 was raised and successfully closed. Refer to appendix 2 for further details.

Sustainable Development Contributions:

As confirmed during the remote audit, project promotes an eco-friendly technology for production of alternative building materials. It avoids use of fossil fuel in the production process unlike Clay brick manufacturing process, and results in lower energy consumption than the clay brick manufacturing. Thus, the project activity results in lower greenhouse gas emission as compared to the conventional clay bricks manufacturing process. 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. Also, In contrast to the seasonal production-operations in the clay brick industry, AAC plants have the advantage of continuous year-wide operation, and hence provide yearlong employment opportunity for the skilled artisans and create self-help livelihood opportunities for the illiterate people.

Management and operational system:

Verification team was able to verify that authorities and responsibilities/13/ for monitoring and reporting of all data related to the emission reductions were clearly defined for the monitoring period from 01-January-2016 to 31-May-2021 (Inclusive of both days).

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 the section 4.3 of the MR/1.2/ is confirmed to be correct. All the parameters of the monitoring plan are monitored using appropriate data monitoring system.

The verification team has interviewed the plant personnel/10/ who are involved in the monitoring of the parameters that are used to determine the emission reductions of the VCS project. It is confirmed based on the interviews that the plant 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 and from the document review like statutory clearances/16//17/, calibration certificates/12/, material log books and Invoices/15/ 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, procedures, and the equipments.

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	Production-P _{PJ,y}
Data unit	m ³
Description	The annual production of the facility in year y
Source of data	Verification team confirms that the data has been sourced from plant records/15/.
Description of	During the remote inspection and through document review/15/, it

measurement methods and procedures to be applied	has been confirmed that the number of standardized size cakes manufactured has been converted to volume units and is monitored continuously.														
Frequency of monitoring-recording	<p>The monitoring frequency is continuous and recording frequency is daily as verified by the verification team through remote assessment. For the purpose of monitoring the annual production of the facility, daily counting of the blocks was done and recorded. The formula used to find out production is as follows:</p> <p>Production(m³) = (Number of cakes) x (standard volume per cake)</p> <p>No. of cakes has been checked through sale data and blocks stocks data/15/ maintained for daily reading and transferred for quantification of monthly and annual values.</p>														
Value monitored	<table border="1" data-bbox="574 821 1247 1392"> <thead> <tr> <th>Period</th> <th>Total Production(m³)</th> </tr> </thead> <tbody> <tr> <td>01-January-2016 to 31-December-2016</td> <td>83,472.77</td> </tr> <tr> <td>01-January-2017 to 31-December-2017</td> <td>86,023.06</td> </tr> <tr> <td>01-January-2018 to 31-December-2018</td> <td>106,865.13</td> </tr> <tr> <td>01-January-2019 to 31-December-2019</td> <td>93,132.95</td> </tr> <tr> <td>01-January-2020 to 31-December-2020</td> <td>56,290.78</td> </tr> <tr> <td>01-January-2021 to 31-May-2021</td> <td>32,967.08</td> </tr> </tbody> </table> <p>The recording frequency of the parameter is daily, however annual readings has been demonstrated in MR and ER sheet. This has been done for ease of reporting. Annual readings as reported in MR and ER sheet were cross-checked using the summation of daily readings for the specific duration from plant records. They were found to be consistently reported. Further, it was observed that the total production for 2020 was significantly less as compared to the total production of previous years, due to the COVID-19 pandemic.</p>	Period	Total Production(m ³)	01-January-2016 to 31-December-2016	83,472.77	01-January-2017 to 31-December-2017	86,023.06	01-January-2018 to 31-December-2018	106,865.13	01-January-2019 to 31-December-2019	93,132.95	01-January-2020 to 31-December-2020	56,290.78	01-January-2021 to 31-May-2021	32,967.08
Period	Total Production(m ³)														
01-January-2016 to 31-December-2016	83,472.77														
01-January-2017 to 31-December-2017	86,023.06														
01-January-2018 to 31-December-2018	106,865.13														
01-January-2019 to 31-December-2019	93,132.95														
01-January-2020 to 31-December-2020	56,290.78														
01-January-2021 to 31-May-2021	32,967.08														
Monitoring	Number of blocks produced have been manually counted and have														

equipment	been cross checked with the blocks selling data and blocks stock data/15/.
QA-QC procedures to be applied	Blocks selling data (invoices) and blocks stocks data/15/ have been used for cross verification of the data. The readings are being recorded by operators in block selling records and block stocks for each day. Efficiency of transfer of data is being monitored by supervisor onsite. Remote assessment revealed that inventorisation of data has been done efficiently and data management procedures have been followed for both hard and soft versions of data.
Purpose of the data	Calculation of Baseline emissions
Calculation method	Production = (Number of cakes) x (standard volume per cake)
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.

Data - Parameter	Q _{Cement}											
Data unit	Tones											
Description	Tons of cement used over a year y of project activity production											
Source of data	Verification team confirms that the data has been measured directly by purchase records/19/ maintained at plant.											
Description of measurement methods and procedures to be applied	During the remote inspection and through the review of, it has been confirmed that the cement purchased for producing AAC blocks have been measured on purchase records. Verification team confirms that the cement purchase Invoices/19/ from the suppliers have been checked.											
Frequency of monitoring-recording	The monitoring frequency is every purchase of raw material and recording frequency is monthly as verified by plant logbook/15/ and during remote assessment. The reported data has been cross-checked with the invoices issued to the PP by the supplier/19/.											
Value monitored	<table border="1"> <thead> <tr> <th>Period</th> <th>Quantity of cement consumed for production of AAC blocks</th> </tr> </thead> <tbody> <tr> <td>01-January-2016 to 31-December-2016</td> <td>5,648.38</td> </tr> <tr> <td>01-January-2017 to 31-December-2017</td> <td>9,451.92</td> </tr> <tr> <td>01-January-2018 to 31-December-2018</td> <td>12,466.15</td> </tr> <tr> <td>01-January-2019 to 31-</td> <td>10,825.64</td> </tr> </tbody> </table>		Period	Quantity of cement consumed for production of AAC blocks	01-January-2016 to 31-December-2016	5,648.38	01-January-2017 to 31-December-2017	9,451.92	01-January-2018 to 31-December-2018	12,466.15	01-January-2019 to 31-	10,825.64
Period	Quantity of cement consumed for production of AAC blocks											
01-January-2016 to 31-December-2016	5,648.38											
01-January-2017 to 31-December-2017	9,451.92											
01-January-2018 to 31-December-2018	12,466.15											
01-January-2019 to 31-	10,825.64											

	December-2019	
	01-January-2020 to 31-December-2020	5,995.74
	01-January-2021 to 31-May-2021	3,483.32
	The data has been cross verified from the invoices and found to be accurate.	
Monitoring equipment	As this is monitored based on purchase records, no monitoring equipment is used which is accepted	
QA-QC procedures to be applied	Cement is procured in bags of known quantity; QA/QC is ensured which is accepted.	
Purpose of the data	Calculation of leakage emissions	
Calculation method	Not applicable as it is a measured parameter.	
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.	

Data - Parameter	Q _{Lime}							
Data unit	Tones							
Description	Tons of Lime used over a year y of project activity production							
Source of data	Verification team confirms that the data has been measured directly by purchase records/19/ maintained at plant.							
Description of measurement methods and procedures to be applied	During the remote inspection and through the review of, it has been confirmed that the Lime purchased for producing AAC blocks have been measured based on purchase records. Verification team confirms that the Lime purchase Invoices from the suppliers have been checked.							
Frequency of monitoring-recording	The monitoring frequency is every purchase of raw material and recording frequency is monthly as verified by plant logbook/15/ and during remote assessment. The reported data has been cross-checked with the invoices issued to the PP by the supplier/19/.							
Value monitored	<table border="1"> <thead> <tr> <th>Period</th> <th>Quantity of Lime consumed for production of AAC blocks</th> </tr> </thead> <tbody> <tr> <td>01-January-2016 to 31-December-2016</td> <td>3,443.44</td> </tr> <tr> <td>01-January-2017 to 31-December-2017</td> <td>3,443.02</td> </tr> </tbody> </table>		Period	Quantity of Lime consumed for production of AAC blocks	01-January-2016 to 31-December-2016	3,443.44	01-January-2017 to 31-December-2017	3,443.02
Period	Quantity of Lime consumed for production of AAC blocks							
01-January-2016 to 31-December-2016	3,443.44							
01-January-2017 to 31-December-2017	3,443.02							

	01-January-2018 to 31-December-2018	3,203.78
	01-January-2019 to 31-December-2019	3,160.20
	01-January-2020 to 31-December-2020	2,113.02
	01-January-2021 to 31-May-2021	1,381.37
	The data has been cross verified from the invoices and found to be accurate.	
Monitoring equipment	As this is monitored based on purchase records, no monitoring equipment is used which is accepted	
QA-QC procedures to be applied	Lime is procured in bags of known quantity; QA/QC is ensured which is accepted.	
Purpose of the data	Calculation of leakage emissions	
Calculation method	Not applicable as it is a measured parameter.	
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.	

Data - Parameter	Q _{Gypsum}					
Data unit	Tones					
Description	Tons of Gypsum used over a year y of project activity production					
Source of data	Verification team confirms that the data has been measured directly by purchase records/19/ maintained at plant.					
Description of measurement methods and procedures to be applied	During the remote inspection and through the review of, it has been confirmed that the gypsum purchased for producing AAC blocks have been measured based on purchase records. Verification team confirms that gypsum purchase Invoices from the suppliers have been checked.					
Frequency of monitoring-recording	The monitoring frequency is every purchase of raw material and recording frequency is monthly as verified by plant logbook/15/ and during remote assessment. The reported data has been cross-checked with the invoices issued to the PP by the supplier/19/.					
Value monitored	<table border="1"> <thead> <tr> <th>Period</th> <th>Quantity of Gypsum consumed for production of AAC blocks</th> </tr> </thead> <tbody> <tr> <td>01-January-2016 to 31-December-2016</td> <td>447.53</td> </tr> </tbody> </table>		Period	Quantity of Gypsum consumed for production of AAC blocks	01-January-2016 to 31-December-2016	447.53
Period	Quantity of Gypsum consumed for production of AAC blocks					
01-January-2016 to 31-December-2016	447.53					

	01-January-2017 to 31-December-2017	552.67
	01-January-2018 to 31-December-2018	345.75
	01-January-2019 to 31-December-2019	361.08
	01-January-2020 to 31-December-2020	55.35
	01-January-2021 to 31-May-2021	000
	The data has been cross verified from the invoices and found to be accurate.	
Monitoring equipment	As this is monitored based on purchase records, no monitoring equipment is used which is accepted	
QA-QC procedures to be applied	Gypsum is procured in bags of known quantity; QA/QC is ensured which is accepted.	
Purpose of the data	Calculation of leakage emissions	
Calculation method	Not applicable as it is a measured parameter.	
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.	

Data - Parameter	Q _{Aluminium}					
Data unit	Tones					
Description	Tons of Aluminium used over a year y of project activity production					
Source of data	Purchase bill of Aluminium					
Description of measurement methods and procedures to be applied	During the remote inspection and through the review of, it has been confirmed that the Aluminium purchased for producing AAC blocks have been measured based on purchase records. Verification team confirms that Aluminium purchase Invoices/19/ from the suppliers have been checked.					
Frequency of monitoring-recording	The monitoring frequency is every purchase of raw material and recording frequency is monthly as verified by plant logbook/15/ and during remote assessment. The reported data has been cross-checked with the invoices issued to the PP by the supplier/19/.					
Value monitored	<table border="1"> <thead> <tr> <th>Period</th> <th>Quantity of Aluminium consumed for production of AAC blocks</th> </tr> </thead> <tbody> <tr> <td>01-January-2016 to 31-December-2016</td> <td>39.27</td> </tr> </tbody> </table>		Period	Quantity of Aluminium consumed for production of AAC blocks	01-January-2016 to 31-December-2016	39.27
Period	Quantity of Aluminium consumed for production of AAC blocks					
01-January-2016 to 31-December-2016	39.27					

	01-January-2017 to 31-December-2017	40.29
	01-January-2018 to 31-December-2018	51.21
	01-January-2019 to 31-December-2019	43.65
	01-January-2020 to 31-December-2020	26.82
	01-January-2021 to 31-May-2021	15.07
	The data has been cross verified from the invoices and found to be accurate.	
Monitoring equipment	As this is monitored based on purchase records, no monitoring equipment is used which is accepted	
QA-QC procedures to be applied	Aluminium is procured in bags of known quantity; QA/QC is ensured which is accepted.	
Purpose of the data	Calculation of leakage emissions	
Calculation method	Not applicable as it is a measured parameter.	
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.	

Data - Parameter	QFly Ash					
Data unit	Tones					
Description	Tons of Fly Ash used over a year y of project activity production					
Source of data	Purchase bill of Fly Ash					
Description of measurement methods and procedures to be applied	During the remote inspection and through the review of, it has been confirmed that the Fly Ash purchased for producing AAC blocks have been measured based on purchase records. Verification team confirms that Fly Ash purchase Invoices/19/ from the suppliers have been checked.					
Frequency of monitoring-recording	The monitoring frequency is every purchase of raw material and recording frequency is monthly as verified by plant logbook/15/ and during remote assessment. The reported data has been cross-checked with the invoices issued to the PP by the supplier/19/.					
Value monitored	<table border="1"> <thead> <tr> <th>Period</th> <th>Quantity of Fly Ash consumed for production of AAC blocks</th> </tr> </thead> <tbody> <tr> <td>01-January-2016 to 31-</td> <td>30,523.52</td> </tr> </tbody> </table>		Period	Quantity of Fly Ash consumed for production of AAC blocks	01-January-2016 to 31-	30,523.52
Period	Quantity of Fly Ash consumed for production of AAC blocks					
01-January-2016 to 31-	30,523.52					

	December-2016	
	01-January-2017 to 31-December-2017	35,605.52
	01-January-2018 to 31-December-2018	40,545.10
	01-January-2019 to 31-December-2019	34,830.23
	01-January-2020 to 31-December-2020	22,186.95
	01-January-2021 to 31-May-2021	13,360.74
	The data has been cross verified from the invoices and found to be accurate.	
Monitoring equipment	As this is monitored based on purchase records, no monitoring equipment is used which is accepted	
QA-QC procedures to be applied	Fly Ash is procured in bags of known quantity; QA/QC is ensured which is accepted.	
Purpose of the data	Calculation of leakage emissions	
Calculation method	Not applicable as it is a measured parameter.	
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.	

Data - Parameter	Compressive strength of AAC blocks
Data unit	MPa
Description	Compressive strength of project blocks
Source of data	Verification team confirms that the data has been measured directly from Laboratory test report/18/ by the third party, which has been reviewed and the data was found to be consistent.
Description of measurement methods and procedures to be applied	During the remote inspection and through document review/18/, it has been confirmed that the dry compressive strength of the project block has been tested in nationally approved laboratory.
Frequency of monitoring-recording	The monitoring and recording frequency is once in 6 months as verified during remote assessment and through the review of reports.

Value monitored	<table border="1"> <thead> <tr> <th>Date of Test</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>8-Febaruay-2016</td> <td>4.68</td> </tr> <tr> <td>22-Febraury-2017</td> <td>4.70</td> </tr> <tr> <td>20-Febraury-2018</td> <td>4.74</td> </tr> <tr> <td>20-Febraury-2019</td> <td>4.45</td> </tr> <tr> <td>13-Junary-2020</td> <td>4.90</td> </tr> <tr> <td>25-Febraury-2011</td> <td>4.50</td> </tr> </tbody> </table>	Date of Test	Value	8-Febaruay-2016	4.68	22-Febraury-2017	4.70	20-Febraury-2018	4.74	20-Febraury-2019	4.45	13-Junary-2020	4.90	25-Febraury-2011	4.50
	Date of Test	Value													
	8-Febaruay-2016	4.68													
	22-Febraury-2017	4.70													
	20-Febraury-2018	4.74													
	20-Febraury-2019	4.45													
	13-Junary-2020	4.90													
	25-Febraury-2011	4.50													
<p>The monitored values are as sourced from the laboratory test report /18/ and were found to be in accordance to the prevalent industry standards. In accordance with the paragraph 11 of the applied methodology/9/, the monitored compressive strength of the project activity AAC blocks (see above table) has been compared to the baseline clay bricks. The data of baseline bricks as per Indian Standard on common burnt clay building bricks – specifications (IS 1077:1992) published by Bureau of Indian Standards, Government of India, is 3.5 N/mm² for the lowest class of clay bricks. Whereas the compressive strength of AAC blocks (see above table) as taken from laboratory test report/18/ is more than the compressive strength of lowest class of baseline bricks.</p>															
Monitoring equipment	Not applicable as this is monitored by third party laboratory														
QA-QC procedures to be applied	The assessment team during remote audit confirms NABL accredited laboratory has been appointed for all the lab analysis, which is acceptable to the assessment team.														
Purpose of the data	Calculation of Baseline emissions														
Calculation method	This is a measured data. Hence, not applicable.														
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.														

Data - Parameter	EC _{PJ,y}
Data unit	MWh
Description	Quantity of electricity consumed by the project plant in year y
Source of data	Verification team confirms that the data has been measured directly by Electricity consumption logbook/11/
Description of measurement methods and procedures to be applied	During the remote inspection and through document review, it has been confirmed that the energy meter has been used to measure the electricity consumption by the project activity.
Frequency of	The monitoring frequency is continuously and recording frequency is

monitoring-recording	daily as verified by the verification team through remote assessment.														
Value monitored	<table border="1"> <thead> <tr> <th>Period</th> <th>Electricity Consumption (MWh)</th> </tr> </thead> <tbody> <tr> <td>01-January-2016 to 31-December-2016</td> <td>884.21</td> </tr> <tr> <td>01-January-2017 to 31-December-2017</td> <td>911.22</td> </tr> <tr> <td>01-January-2018 to 31-December-2018</td> <td>1131.99</td> </tr> <tr> <td>01-January-2019 to 31-December-2019</td> <td>986.53</td> </tr> <tr> <td>01-January-2020 to 31-December-2020</td> <td>596.27</td> </tr> <tr> <td>01-January-2021 to 31-May-2021</td> <td>349.21</td> </tr> </tbody> </table> <p>The data was verified through electricity bills/11/. It was confirmed that DG set was not being used during monitoring period, owing to the fact there was a constant electricity supply from the grid as checked from the bills. Further, it was observed that the electricity consumption for 2020 was significantly less as compared to the previous years, due to the limited production by the plant because of the COVID-19 pandemic.</p>	Period	Electricity Consumption (MWh)	01-January-2016 to 31-December-2016	884.21	01-January-2017 to 31-December-2017	911.22	01-January-2018 to 31-December-2018	1131.99	01-January-2019 to 31-December-2019	986.53	01-January-2020 to 31-December-2020	596.27	01-January-2021 to 31-May-2021	349.21
Period	Electricity Consumption (MWh)														
01-January-2016 to 31-December-2016	884.21														
01-January-2017 to 31-December-2017	911.22														
01-January-2018 to 31-December-2018	1131.99														
01-January-2019 to 31-December-2019	986.53														
01-January-2020 to 31-December-2020	596.27														
01-January-2021 to 31-May-2021	349.21														
Monitoring equipment	Energy Meter has been used to measure the electricity consumption in the project activity, which has been confirmed during the remote assessment.														
QA-QC procedures to be applied	The meter is used for the electricity is sealed by the provider – ‘Sothern Power Distribution Company of Andhra Pradesh limited’ and not in PP’s control which was confirmed during remote audit. So QA/QC is not required.														
Purpose of the data	Calculation of baseline emissions														
Calculation method	Not applicable as this is directly measured.														
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.														

Data - Parameter	$D_{f,y}$
Data unit	Km
Description	Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m
Source of data	Verification team confirms that the data has been measured online

	maps and purchase invoices/19/ maintained at plant.												
Description of measurement methods and procedures to be applied	During the remote inspection, it has been confirmed that this data has been measured using online maps and purchase invoices. Verification team has cross-checked the distance between origin and destination was using google earth.												
Frequency of monitoring-recording	The monitoring frequency and recording frequency is whenever road trip distance changes as verified by the verification team through remote assessment.												
Value monitored	<table border="1"> <thead> <tr> <th>Raw material</th> <th>Round trip distance</th> </tr> </thead> <tbody> <tr> <td><i>Fly Ash</i></td> <td>25</td> </tr> <tr> <td><i>Cement</i></td> <td>176</td> </tr> <tr> <td><i>Lime</i></td> <td>3934</td> </tr> <tr> <td><i>Gypsum</i></td> <td>744</td> </tr> <tr> <td><i>Aluminium Powder</i></td> <td>1998</td> </tr> </tbody> </table> <p>The values were verified with purchase invoices</p>	Raw material	Round trip distance	<i>Fly Ash</i>	25	<i>Cement</i>	176	<i>Lime</i>	3934	<i>Gypsum</i>	744	<i>Aluminium Powder</i>	1998
Raw material	Round trip distance												
<i>Fly Ash</i>	25												
<i>Cement</i>	176												
<i>Lime</i>	3934												
<i>Gypsum</i>	744												
<i>Aluminium Powder</i>	1998												
Monitoring equipment	Purchase invoices and online maps have been used to estimate the roundtrip distance and it is accepted by the verification team.												
QA-QC procedures to be applied	Not applicable as it is a third-party data.												
Purpose of the data	Calculation of leakage emissions												
Calculation method	Round trip road travel distances calculated from online maps.												
Comments	As confirmed during the remote audit, all the data would be achieved for a minimum of 2 years after the end of the crediting period or last verification, whichever occurs later.												

Finding: CL 01 and CL 02 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/10/;
- The monitoring complies with the requirement of the applied methodology/9/;
- 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 VCS PD/3/;

- The values included in the monitoring report/1.2/ and corresponding emission reduction sheets /2.2/ are verified and included under each monitoring parameter.

4.2 Safeguards

4.2.1 No Net Harm

The project activity does not involve any negative impact. Assessment team confirms it based on its local and sectoral expertise.

4.2.2 Local Stakeholder Consultation

The local stakeholder consultation meeting for the project activity was conducted and the process was validated during the registration of project activity in VCS. VCS validation report /3/ was verified to confirm the same. The PP had invited identified stakeholders well in advance by invitation letters and newspaper advertisements to local villagers, panchayat members with details of venue and time of meeting. Also, PP has grievance register maintained at site for complaints (if any).

During the monitoring period there were no complaints about or demands from the project. The same was confirmed through the review of grievance register /20/for 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 /2.2/ 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 /9/.

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 /1.2/ 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_y) are calculated based on the following formula:

$$BE_y = EF_{BL} * P_{PJ,y}$$

Where:

BE _y	tCO ₂ e	The annual baseline emissions from fossil fuels displaced by the project activity in the year y
EF _{BL}	tCO ₂ /m ³	The annual production specific baseline emission factor

$P_{PJ,y}$ m^3 The annual net production of the facility in year y

For the project activity

Annual Net Production of the facility from 01-January-2016 to 31-December-2016
 = 83,472.77 m^3

Annual Net Production of the facility from 01-January-2017 to 31-December-2017
 = 86,023.06 m^3

Annual Net Production of the facility from 01-January-2018 to 31-December-2018
 = 106,865.13 m^3

Annual Net Production of the facility from 01-January-2019 to 31-December-2019
 = 93,132.95 m^3

Annual Net Production of the facility from 01-January-2020 to 31-December-2020
 = 56,290.78 m^3

Annual Net Production of the facility from 01-January-2021 to 31-May-2021
 = 32,967.08 m^3

Specific Baseline Emission Factor = 0.3994 tCO_2/m^3

Therefore,

Baseline emissions have been calculated as

Period	Annual Production ($P_{PJ,y}$)	Specific Baseline (EF_{BL})	Baseline Emission (BE_y)
	m^3	tCO_2/m^3	tCO_2e
01-January-2016 to 31-December-2016	83,472.77	0.3994	33335.68
01-January-2017 to 31-December-2017	86,023.06	0.3994	34354.17
01-January-2018 to 31-December-2018	106,865.13	0.3994	42677.66
01-January-2019 to 31-December-2019	93,132.95	0.3994	37193.57
01-January-2020 to 31-December-2020	56,290.78	0.3994	22480.29
01-January-2021 to 31-May-2021	32,967.08	0.3994	13165.73

Baseline Emission (BE_y) for the current monitoring period is 183,207.11 tCO_2e

It is noted that the formula and calculation used for baseline emission calculation in the monitoring report and ER sheet /2.2/ is in compliance with the registered VCS PD/3/. The default values and data used in the monitoring report /1.2/ is in-line with the registered PDD/3/. Hence, acceptable to the verification team.

Project Emissions:

Project emissions have been calculated using paragraph 24 of the methodology AMS-III.Z Fuel Switch, process improvement and energy efficiency in brick manufacture (Version 05). Project emission sources relevant for this project are emissions due to Electricity for its operations

Verification team confirms and accepted the project emission considered.

As per eq.24 of applied methodology;

The project emissions should be calculated as follows:

$$PE_y = PE_{elec,y} + PE_{fossilfuel,y} + PE_{transport,y} + PE_{cultivation,y} + PE_{CH_4,y}$$

Project emission from electricity consumption within the project boundary- $PE_{elec,y}$

$$PE_{elec,y} = \sum_j EC_{PJ,j,y} * EF_{EL,j,y} * (1 + TDL_{j,y})$$

$PE_{elec,y}$	tCO ₂ /yr	Project emission due to electricity consumption in year y
$EC_{PJ,j,y}$	MWh/yr	Quantity of electricity consumed by the project emission source j in year y
$EF_{EL,j,y}$	tCO ₂ /MWh	Emission factor for electricity generation for source j in year y
$TDL_{j,y}$	%	Average technical transmission and distribution losses for providing electricity to source j in year y

Period	Electricity Consumption $EC_{PJ,j,y}$	Emission Factor $EF_{EL,j,y}$	Project Emissions $PE_{elec,y}$
	MWh	tCO ₂ /MWh	tCO ₂
01-January-2016 to 31-December-2016	884.21	0.9593	933.04
01-January-2017 to 31-December-2017	911.22	0.9593	961.55
01-January-2018 to 31-December-2018	1131.99	0.9593	1194.51
01-January-2019 to 31-December-2019	986.53	0.9593	1041.02
01-January-2020 to 31-December-2020	596.27	0.9593	629.21
01-January-2021 to 31-May-2021	349.21	0.9593	368.50

Project emission (PE_y) for the current monitoring period is 5127.82 tCO_{2e}

It is noted that the formula and calculation used for project emission calculation in the monitoring report and ER sheet /2.2/ is in compliance with the registered VCS PD/3/. The default values and data used in the monitoring report /1.2/ is in-line with the registered VCS PD/3/. Hence, acceptable to the verification team.

Leakage:

As per the methodology AMS- III.Z , version 04 /9/ and as defined in the registered VCS PD/3/ following is the leakage that is considered in the project activity and the same is followed in this monitoring period also.

Leakage emission sources relevant for this project are:

- Leakage emissions due to raw material production
- Leakage emission due to raw material transportation

The applicable equation is as below for calculating the leakage emission:

$$LE_y = LE_{rm,prod,y} + LE_{TR,m}$$

Where:

LE_y	Leakage emissions associated with consumption and transport of raw and/or additive materials in the year y.
$LE_{rm,prod,y}$	Leakage emissions associated with consumption of raw and/or additive materials in the year y
$LE_{TR,m}$	Leakage emission associated with transportation of raw and/or additive materials in the year y

Leakage emission due to raw material production has been calculated based on the formula:

$$LE_{rm,prod,y} = Q_{cement,y} \times EF_{cement} + Q_{lime,y} \times EF_{lime} + Q_{Aluminium,,y} \times EF_{Aluminium}$$

Where:

$LE_{rm,prod,y}$	Leakage emissions associated with consumption of raw and/or additive materials in the year y
$Q_{cement,y}$	Quantity of cement consumed for the production of AAC blocks/panels in the year y.
EF_{cement}	CO ₂ emission factor of the cement production.
$Q_{lime,y}$	Quantity of lime consumed for the production of AAC blocks/panels in the year y.
EF_{lime}	CO ₂ emission factor of the lime production.
$Q_{Aluminium,,y}$	Quantity of Aluminium Powder consumed for the production of AAC blocks/panels in the year y.
$EF_{Aluminium}$	CO ₂ emission factor of the Aluminium production.

For the project activity:

Period		Raw Material consumed	Specific GHG Emissions
01-January-2016 to 31-December-2016	Raw Material	Tonnes	tCO₂/tonne of raw material
	Cement	5,648.38	0.638
	Lime	3,443.44	0.4397
	Aluminum	39.27	1.89
01-January-2017 to 31-December-2017	Cement	9,451.92	0.638
	Lime	3,443.02	0.4397
	Aluminum	40.29	1.89
01-January-2018 to 31-December-2018	Cement	12,466.15	0.638
	Lime	3,203.78	0.4397
	Aluminum	51.21	1.89
01-January-2019 to 31-December-2019	Cement	10,825.64	0.638
	Lime	3,160.20	0.4397
	Aluminum	43.65	1.89
01-January-2020 to 31-December-2020	Cement	5,995.74	0.638
	Lime	2,113.02	0.4397
	Aluminum	26.82	1.89
01-January-2021 to 31-May-2021	Cement	3,483.32	0.638
	Lime	1,381.37	0.4397
	Aluminum	15.07	1.89

Leakage emissions due to raw material transportation:

$$LE_{rm,trans,y} = \sum_f D_{f,y} * FR_{f,y} * EF_{CO_2,f} * 10^{-6}$$

For the project activity

$LE_{rm,trans,y}$	tCO ₂	Leakage emission from road transportation of freight in monitoring period m
$D_{f,y}$	Km	Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m
$FR_{f,m}$	Tonne	Total mass of freight transported in freight transportation activity f in monitoring period m
$EF_{CO_2,f}$	gCO ₂ /t-km	Default CO ₂ emission factor for freight transportation activity f
F	Km	Freight transportation activities conducted in the project activity in monitoring period m

Period	Freight Type	Raw Material Transported	Total Round trip distance	Default CO ₂ Emission Factor for Freight Transportation activity
	Raw Material	Tonnes	Kms	gCO ₂ /t-km
01-January-2016 to 31-December-2016	Cement	5,648.38	176	129
	Fly ash	30,523.52	25	129
	Lime	3,443.44	3934	129
	Gypsum	447.53	744	129
	Aluminum	39.27	1998	129
01-January-2017 to 31-December-2017	Cement	9,451.92	176	129
	Fly ash	35,605.52	25	129
	Lime	3,443.02	3934	129
	Gypsum	552.67	744	129
	Aluminum	40.29	1998	129
01-January-2018 to 31-December-2018	Cement	12,466.15	176	129
	Fly ash	40,545.10	25	129
	Lime	3,203.78	3934	129
	Gypsum	345.75	744	129
	Aluminum	51.21	1998	129
01-January-2019 to 31-December-2019	Cement	10,825.64	176	129
	Fly ash	34,830.23	25	129
	Lime	3,160.20	3934	129
	Gypsum	361.08	744	129
	Aluminum	43.65	1998	129
01-January-2020 to 31-December-2020	Cement	5,995.74	176	129
	Fly ash	22,186.95	25	129
	Lime	2,113.02	3934	129
	Gypsum	55.35	744	129
	Aluminum	26.82	1998	129
01-January-2021 to 31-May-2021	Cement	3,483.32	176	129
	Fly ash	13,360.74	25	129
	Lime	1,381.37	3934	129
	Gypsum	0.00	744	129
	Aluminum	15.07	1998	129

Total Leakage Emissions (LE_y) for the monitoring period:

Period	Leakage Emissions from Raw Material Production	Leakage Emissions from Raw Material Transportation	Total Leakage Emissions from the Project Activity

	tCO ₂	tCO ₂	tCO ₂
01-January-2016 to 31-December-2016	5191.97	2027.25	7219.22
01-January-2017 to 31-December-2017	7620.37	2140.14	9760.51
01-January-2018 to 31-December-2018	9458.89	2086.04	11544.93
01-January-2019 to 31-December-2019	8378.80	2007.78	10386.58
01-January-2020 to 31-December-2020	4805.06	1292.23	6097.29
01-January-2021 to 31-May-2021	2858.23	827.0	3685.32

It is in compliance with the registered VCS PD/3/.

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

Parameter	Description	Source/Justification
EF _{BL} tCO ₂ /m ³	This is the annual production specific baseline emission factor.	Calculated as per CO ₂ emission per brick data taken from “Brick and ceramic sector report”, which has been converted to CO ₂ emission per unit volume of baseline brick with weight of each brick taken. The value 0.39936 is used for the calculation of the Baseline Emission and is found to be consistent with the registered PD/3/.
EF _{cement} tCO ₂ /ton	This is the CO ₂ emission factor of cement production.	This is a default value as per Cement Sustainability Initiative protocol and is an authentic source of data. The value 0.638 is used for the calculation of the leakage Emission and is found to be consistent with the registered PD/3/.
EF _{aluminum} tCO ₂ /ton	This is the CO ₂ emission factor of aluminium production	This is a default value as per Table 17: Industrial processes-emission factors and activity data of Cement Sustainability Initiative protocol and is an authentic source of data. The value 1.89 is used for the calculation of the leakage emission and is found to be consistent with the registered PD/3/.
EF _{lime}	This is the CO ₂	IPCC 2006 data is an authentic source of data.

tCO ₂ /ton	emission factor of lime production	The value 0.4397 is used for the calculation of the leakage Emission and is found to be consistent with the registered PD/3/.
EF _{CO₂,f} gCO ₂ /t-km	This is the Default CO ₂ emission factor for freight transportation activity	This is a default data as provided by UNFCCC and is an authentic source of data. The value - 129 is used for the calculation of the leakage Emission and is found to be consistent with the registered PD/3/.
TDL _{plant,y} %	This is the Average technical transmission and distribution losses for providing electricity to project plant in year y	The emission factor for project emission has been selected as the default transmission and distribution losses for project emission estimation applicable to scenario CIII. Data taken from “Tool to calculate baseline, project or leakage emission from electricity Consumption”, which is an authentic source. The value 10 is used for the calculation of the project Emission and is found to be consistent with the registered PD/03/.

According to the applied methodology, the conservativeness of the achieved emission reduction was checked and the detailed emission reduction calculation has been transparently provided in the ER sheet. 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 during the current monitoring period. It is confirmed that the data has been measured directly from meters and it was cross checked from the joint meter readings and the invoices raised to state electricity utilities and was able to verify the same.

Finding: CL 02, 03 and CAR 01 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 VCS PD /3/;
- The monitoring complies with the requirement of the applied methodology/9/;
- 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 /1.2/ and corresponding emission reduction sheet /2.2/ 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. A total of 42.55% decrease in overall emission reduction achieved during the current monitoring period.

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/10/. 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 registered VCS PD/3/.

It was also verified through remote audit inspection 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 is conducted on regular basis.

4.6 Non-Permanence Risk Analysis

Not applicable to the project activity.

5 VERIFICATION CONCLUSION

KBS Certification Services Pvt. Ltd. has been commissioned by 'ENVIRONMENTFIRST ENERGY SERVICES (P) LIMITED' to perform verification of its registered VCS project 'AAC Block/Panel Manufacturing unit at Krishna, Andhra Pradesh' with regard to the relevant requirements of VCS Standard Version 4.1. The monitoring period of the project activity is 01-January-2016 to 31-May-2021 (Inclusive of both days), under the crediting period 01-August-2013 to 31-July-2023.

The management of the 'ENVIRONMENTFIRST ENERGY SERVICES (P) 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 02 and dated 09-September-2021. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the 'ENVIRONMENTFIRST ENERGY SERVICES (P) LIMITED'. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 02 and dated 09-September-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-January-2016 to 31-May-2021 (Inclusive of both days) based on the reported emission reductions in the final Monitoring Report Version 02 and dated 09-September-2021 for 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.
- 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 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-January-2016 to 31-May-2021 (Inclusive of 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)

01-January-2016 to 31-December-2016	33335.68	933.04	7219.22	25183
01-January-2017 to 31-December-2017	34354.17	961.55	9760.51	23632
01-January-2018 to 31-December-2018	42677.66	1194.51	11544.93	29938
01-January-2019 to 31-December-2019	37193.57	1041.02	10386.58	25765
01-January-2020 to 31-December-2020	22480.29	629.21	6097.29	15753
01-January-2021 to 31-May-2021	13165.73	368.50	3685.32	9111
Total	183207.11	5127.82	48693.85	129382

Location: Faridabad

Date: 15-September-2021



Authorized Signatory: Kaushal Goyal

Designation: Managing Director

KBS Certification Services Pvt. Ltd.

APPENDIX I: REFERENCES

/1/	<p>/1.1/ Monitoring Report, Version 01, dated 14-June-2021 (Initial Version)</p> <p>/1.2/ Monitoring Report, Version 02 dated 09-September-2021 (Final Version)</p>
/2/	<p>/2.1/ Emission Reduction calculation sheet, Version 01 dated 14-June-2021 (corresponding to initial Version of VCS MR)</p> <p>/2.2/ Emissions Reduction calculation Sheet, Version 02 dated 09-September-2021 (corresponding to final Version of VCS MR)</p>
/3/	<ul style="list-style-type: none"> • Registered VCS PD version 02 dated 17-June-2015 • Validation report version 01 dated 18-July-2015 by EPIC Sustainability Services Private Limited • Verification report version 01 dated 12-July-2016 by EPIC Sustainability Services Private Limited
/4/	VCS Standard Version 4.1
/5/	<p>VCS Programme guide Version 4.0</p> <p>VCS_Validation_Verification_Manual_v3.2</p>
/6/	Technical specifications/photographs of electricity meters, brick manufacturing unit etc.
/7/	Single line diagram and meter locations / Layout
/8/	Commissioning Certificate/commencement certificate
/9/	AMS III.Z. - "Fuel switch, process improvement and energy efficiency in brick manufacture" Version 5.0
10/	<p>Remote auditing (19-July-2021) for verification of measuring and monitoring procedure,</p> <ul style="list-style-type: none"> • Video recordings & snapshots of the project site/equipment's • Interviews and data/log review
11/	Electricity bills for the entire monitoring period 01-January-2016 to 31-May-2021
12/	Calibration Certificates for weighbridges
13/	Organization structure/chart
14/	Supportive for avoidance of double counting dated 14-August-2021
15/	Material log books and invoices
16/	License to work factory dated 02-December-2013

17/	Consent to establish dated 27-April-2012 Consent to operate dated 22-September-2017
18/	Lab Test Reports for Compressive Strength of AAC bricks
19/	Purchase records for raw materials consumed
20/	Grievance register

APPENDIX II: FINDINGS

Summary of findings	CAR	CL	FAR
	01	03	00

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

Date	Type & Number	Raised by	Reference
XX/XX/2021	FAR		NA
Non-conformities raised			
No pending/open FAR identified from validation/previous verifications.			
Project Participant's response		Date:	
Documentation Provided as Evidence by Project Participant			
Information Verified by Team Leader		Date of review:	
NA			
Reasoning for not acceptance or close out			
NA			
Date of acceptance or non-acceptance		Date:	Status: Closed

Table 2. CAR from this verification

Date	Type & Number	Raised by	Reference
04/08/2021	CAR 01	Verification team	VCS requirements

Non conformities raised		
1. The date format mentioned in the title page is inconsistent with VCS-Monitoring-Report-Template-v4.0 requirement. 2. The baseline, project and leakage emissions mentioned in section 5.1, 5.2 and 5.3 are inconsistent with VCS-Monitoring-Report-Template-v4 requirements.		
Project Participant's response	Date: 11/08/2021	
1. The date format mentioned in the title page is now been revised in line with VCS-Monitoring-Report-Template-v4.0 requirement. 2. The baseline, project and leakage emissions are now been made consistent in section 5.1, 5.2 and 5.3 in line with VCS-Monitoring-Report-Template-v4 requirements.		
Documentation Provided as Evidence by Project Participant		
1. Revised version of MR.		
Information Verified by Team Leader	Date of review: 03/09/2021	
1. The date format mentioned in the title page is now consistent with VCS-Monitoring-Report-Template-v4.0 requirement which is checked and verified. Hence, this part of CAR is closed. 2. The baseline, project and leakage emissions mentioned in section 5.1, 5.2 and 5.3 are found consistent with VCS-Monitoring-Report-Template-v4 requirements which is checked and verified. Hence, this part of CAR is closed.		
Reasoning for not acceptance or close out		
Date of acceptance or non- acceptance	Date: 03/09/2021	Status: closed

Table 3. CL from this verification

Date	Type & Number	Raised by	Reference
04/08/2021	CL 01	Verification Team	

Non conformities raised	
<p>The following documents are awaited for the assessment:</p> <ol style="list-style-type: none"> 1. Declaration for no participation under other GHG programs and not claiming other form of credit other than VCS 2. Commissioning/commencement certificate 3. Grievance register at the site (To verify stakeholder comments/feedbacks) 4. Lab test reports for compressive strength of ACC for complete monitoring period (To verify the monitoring requirements of methodology) 5. Supporting documents to demonstrate Rice husk is procured not far away from 100 km for the project site (To verify no leakage due to biomass transportation in line with approved tool) 	
Project Participant's response	Date: 11/08/2021
<ol style="list-style-type: none"> 1. The declaration-letter has been submitted to the DOE stating that there is no participation under other GHG programs and not claiming other form of credit other than VCS. 2. It's an establishment of factory, and Factory-license, PCB-clearance and Charter-Engineer (CE) certificate has been submitted to the DOE- wherein CE-certificate incorporates the commencement of operation date. 3. The stakeholder-register is maintained at site. Copies of the same has been submitted to the DOE. 4. The Lab test reports for compressive strength of AAC for complete monitoring period, has been submitted to the DOE. 5. Rise-Husk is not a monitoring-parameter as per registered PD, and there is no claim for Emission-reduction from it. However, the same is procured within 30KM periphery only. 	
Documentation Provided as Evidence by Project Participant	
<ol style="list-style-type: none"> 1. Declaration-Letter. 2. Factory-license, PCB-clearance and Charter-Engineer (CE) certificate. 3. Stakeholder's Register copies. 4. Lab test reports for compressive strength of AAC. 	
Information Verified by Team Leader	Date of review: 03/09/2021
<ol style="list-style-type: none"> 1. PP has submitted declaration dated 16/08/2021 for no participation under other GHG programs and not claiming other form of credit other than VCS which is checked and confirmed. Hence, this part of CL is closed. 2. Assessment team has reviewed license to work issued by Inspector f Factories dated 02/12/2013, Consent to Establish issued by Andhra Pradesh Pollution Control Board dated 27/04/2012, Installation certificate issued by Chartered Engineer dated 17/03/2014, Aut renewal of consent order and authorization issued by Andhra Pradesh Pollution Control Board dated 22/09/2017 which is valid till 31/10/2022 which confirms that project is operational and follows local rules and regulations. Hence, this part of CL is closed. 3. PP has submitted copies of Grievance register maintained at the site which were checked and verified. Hence, this part of CL is closed. 4. PP has submitted Lab test reports for compressive strength of ACC for complete monitoring period which were checked to confirm the value is between 4 to 5.4 N/mm² and verified. Hence, this part of CL is closed. 5. Assessment team checked and confirmed that Rice husk is procured from within 30 km radius thus, no leakage due to biomass transportation is applicable which is accepted. Hence, this part of CL is closed. 	
Reasoning for not acceptance or close out	

Date of acceptance or non- acceptance	Date: 03/09/2021	Status: closed

Date	Type & Number	Raised by	Reference
04/08/2021	CL 02	Verification Team	

Non conformities raised	
<ol style="list-style-type: none"> 1. In section 4.1; <ol style="list-style-type: none"> a) PP has used $EF_{grid,CM,y}$ as an ex-ante parameter for emission reduction calculations. However, the parameter table is missing in section 4.1. b) The justification of source of data for $EF_{Aluminium}$ is inadequate and not traceable. 2. In section 4.2; <ol style="list-style-type: none"> a) For parameter 'Compressive strength of AAC blocks' under measurement method applied, PP mentioned about sampling approach as adopted in Annex-1. However, the referred Annex-1 is missing in the MR. 3. In the section 5.2; <ol style="list-style-type: none"> a) The detailed simple operating margin calculation referred under footnote 11 is awaited. b) Build margin calculation referred to Southern grid of India. Further, the value mentioned for the year 2012-13 is inconsistent with sourced database. 	
Project Participant's response	Date: 11/08/2021
<ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> a) The parameter table for $EF_{grid,CM,y}$ is incorporated in the MR.. b) $EF_{Aluminium}$ is fixed ex-ante and sourced from registered PD. <i>Ref; IPCC 2006 refers to emission factor of 1.7 tCO₂/t of Aluminium; However National Greenhouse Accounts (NGA) Factors, Table 17: Industrial processes emission factors and activity data takes into consideration CO₂ emissions and CF₄ and C₂F₆ emissions due to production of aluminium. The NGA factors had been taken to be on a conservative side.</i> https://www.ipcc-nggip.iges.or.jp/public/gp/bgp/3_3_PFC_Primary_Aluminium_Production.pdf http://www.globalbioenergy.org/uploads/media/O801_Australia_-_National_Greenhouse_Accounts_NGA_factors.pdf 2. <ol style="list-style-type: none"> a) It is as per Annex-1 of registered PD. The sentence has been re-phrased in the MR as per registered PD. 3. <ol style="list-style-type: none"> a) These are ex-ante values, and the same has now been re-phrased. b) These are ex-ante values, and now been consistently mentioned in MR. 	
Documentation Provided as Evidence by Project Participant	
<ol style="list-style-type: none"> 1. Revised version of MR. 2. National Greenhouse Accounts Workbook 	
Information Verified by Team Leader	Date of review: 03/09/2021
<ol style="list-style-type: none"> 1. In section 4.1; <ol style="list-style-type: none"> a) PP has now incorporated $EF_{grid,CM,y}$ in section 4.1 which is checked and verified. Hence, this part of CL is closed. b) Assessment team checked registered VCS PD and reviewed submitted web links and accepts justification of data source. Hence, this part of CL is closed. 2. In section 4.2; <ol style="list-style-type: none"> a) PP has revised the sentence in the parameter table appropriately which is accepted. Hence, this part of CL is closed. 3. In the section 5.2; <ol style="list-style-type: none"> a) PP has revised footnote 11 appropriately which is checked and accepted. Hence, this part of CL is closed. b) PP has revised VCS MR with appropriate changes which is checked and accepted. Hence, this part of CL is closed. 	

Reasoning for not acceptance or close out		
Date of acceptance or non- acceptance	Date: 03/09/2021	Status: closed

Date	Type & Number	Raised by	Reference:
04/08/2021	CL 03	Verification team	ER sheet

Non conformities raised	
In worksheet 'Raw Material Consumption', <ol style="list-style-type: none"> Value in cell 'K4' is for electricity consumption for January, 2016. However, supporting energy bill is for the period of 17/01/2016 - 19/02/2016. Electricity consumption for the period 01/01/2016 - 16/01/2016 is not considered. Specify how the value in cell 'K5' is calculated as the value cannot be reproduced from the supporting energy bill for the period. Value in cell 'K6' is for electricity consumption for March, 2016. However, supporting energy bill is for the period of 18/03/2016 - 01/04/2016. Electricity consumption for the period 01/03/2016 - 17/03/2016 is not considered. Value mentioned in cell 'K42' is inconsistent with the supporting document In cell 'K71', data for January 16 to March 16 and January 2021 to May 2021 is not considered for the calculation. In cell 'L71', data for January 16 to March 16 is not considered for the calculation. 	
Project Participant's response	Date: 11/08/2021
<ol style="list-style-type: none"> Value in cell "K4" for electricity consumption for January 2016 adds up the consumption from 01/01/2013 - 16/01/2016 from December, 2015 bill proportionately. Value in cell "K5" is made consistent with supporting docs. Data for the period 18/03/2016 - 01/04/2016 is considered in cell "K7" whereas for 01/03/2016 - 17/03/2016 has now been captured in Mar'2016 EB bills (from 18/01/2016 - 18/03/2016) and considered as well in cell "K6". All values have been rechecked, including cell "K42" and is now consistent with the supporting-document. In cell "K71" Data for January 16 to March 16 & January 21 to May 21 are now been into consideration and calculation. In cell "L71", data for January 16 to March 16 has now been considered. 	
Documentation Provided as Evidence by Project Participant	
1. Revised Emission-Reduction Sheet.	
Information Verified by Team Leader	Date of review: 03/09/2021
<ol style="list-style-type: none"> Assessment team checked the supporting documents and confirmed that PP has apportioned data for 01/01/2016 to 17/01/2016 from December-2015 electricity bill which is accepted. Hence, this part of CL is closed. Assessment team checked the supporting documents and confirmed that the value in cell 'K5' is now corrected and accepted. Hence, this part of CL is closed. Assessment team checked the supporting documents and confirmed that PP has apportioned data for 01/03/2016 to 17/03/2016 from March-2016 electricity bill which is accepted. Hence, this part of CL is closed. Assessment team checked the supporting documents and confirmed that the value in cell 'K5' is now corrected and accepted. Hence, this part of CL is closed. PP has corrected the formula in cell 'K71' which is checked and confirmed. Hence, this part of CL is closed. PP has corrected the formula in cell 'L71' which is checked and confirmed. Hence, this part of CL is closed. 	
Reasoning for not acceptance or close out	

Date of acceptance or non- acceptance	Date: 03/09/2021	Status: closed

Table 4.FAR from this verification

No FAR raised during current verification.

Date	Type & Number	Raised by	Reference
DD/MM/YYYY	FAR		NA
Non-conformities raised			
No FAR identified during the current verifications.			
Project Participant 's response		Date: DD/MM/YYYY	
Documentation Provided as Evidence by Project Participant			
Information Verified by Team Leader		Date of review:	
NA			
Reasoning for not acceptance or close out			
NA			
Date of acceptance or non- acceptance	Date:	Status: Closed	

APPENDIX III: COMPETENCE OF TEAM MEMBERS

Personnel Name:		Deepak Pundlik	
Qualified to work as:			
Team Leader	<input type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<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	
Energy industries (renewable/non-renewable sources)		TA 1.2: Energy generation from renewable energy sources	
Approved by (Manager C & T)		Shikha Sharma	
Approval date:		07/07/2021	

Personnel Name:		Sanjay Kandari	
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 TA 13.2 Manure
Approved by (Manager C & T)	Akhilesh Joshi
Approval date:	11/12/2015

Personnel Name:	Amit Maheshwari		
Qualified to work as:			
Team Leader	<input type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input 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		
4: Manufacturing Industries	TA 4.2: Brick Manufacturing		
Approved by (Manager C & T)	Mayank Kumar Jain		
Approval date:	23/07/2012		

Personnel Name:	Anjana Sharma		
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		
SS: 01: Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2: Energy generation from renewable energy sources		

SS 3: Energy demand	TA 3.1. Energy Demand
SS 5: Chemical industry	TA 5.1 Chemical industry
SS 12: Solvents use	TA 12.1 Chemical industry
SS 13: Waste handling and disposal	TA 13.1 Waste Handling and Disposal
	TA 13.2 Manure
Approved by (Manager C & T)	Shikha Sharma
Approval date:	05/08/2021

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		