



Verification Report

UCR ID: 345

Prepared by



Naturelink Solutions Pvt. Ltd.

Title	Energy Efficient AAC Block Manufacturing by Magcrete Building Solutions Pvt. Ltd.
Project Owner	M/s. Magcrete Building Solutions Pvt. Ltd
Project Location	Block No-188/B, 190, Post-Arak, Village-Arekh, Tal- Jalalpore, Dist- Navsari - 394315 Coordinates: 21°02'38.6"N 72°59'10.5"E
Date	09/03/2024

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Project Verification Report Form (VR)

BASIC INFORMATION

Name of approved UCR Project Verifier / Reference No.	Naturelink Solutions Pvt. Ltd.
Type of Accreditation	<input type="checkbox"/> CDM Accreditation <input type="checkbox"/> ISO 14065 Accreditation <input checked="" type="checkbox"/> UCR Approved Verifier
Approved UCR Scopes and GHG Sectoral scopes for Project Verification	Sectoral Scope: 04 (Manufacturing Industries)
Validity of UCR approval of Verifier	May - 2022 onwards
Completion date of this VR	09/03/2024
Title of the project activity	Energy Efficient AAC Block Manufacturing by Magicrete Building Solutions Pvt. Ltd.
Project reference no. (as provided by UCR Program)	345
Name of Entity requesting verification service	Creduce Technologies Pvt. Ltd. (Aggregator) Magicrete Building Solutions Pvt. Ltd. (Project Owner)
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	Mr. Shailendra Singh Rao shailendra@creduce.tech Ms. Mitali Chauhan mitali.chauhan@magicrete.in
Country where project is located	India
Applied methodologies	AMS-III.Z.: "Fuel Switch, process improvement and energy efficiency in brick manufacture", Version 06.0
Sectoral Scope(s):	04

<p>Project Verification Criteria: Mandatory requirements to be assessed</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> UCR Verification Standard <input checked="" type="checkbox"/> Applicable Approved Methodology <input type="checkbox"/> Applicable Legal requirements/rules of the host country <input checked="" type="checkbox"/> Eligibility of the Project Type <input checked="" type="checkbox"/> Start date of the Project activity <input checked="" type="checkbox"/> Meet applicability conditions in the applied methodology <input checked="" type="checkbox"/> Credible Baseline <input checked="" type="checkbox"/> Do No Harm Test <input checked="" type="checkbox"/> Emission Reduction calculations <input checked="" type="checkbox"/> Monitoring Report <input checked="" type="checkbox"/> No GHG Double Counting <input type="checkbox"/> Others (please mention below)
<p>Project Verification Criteria: Optional requirements to be assessed</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Environmental Safeguards Standard and do-no-harm criteria <input type="checkbox"/> Social Safeguards Standard do-no-harm criteria
<p>Project Verifier's Confirmation: The <i>UCR Project Verifier</i> has verified the UCR project activity and therefore confirms the following:</p>	<p>The UCR-approved verifier Naturelink Solution Pvt. Ltd., verifies the following with respect to the UCR Project Activity "Energy Efficient AAC Block Manufacturing by Magicrete Building Solutions Pvt. Ltd."</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> The project aggregator has correctly described the project activity in the Project Concept Note (dated 30/06/2023) including the applicability of the approved methodology A.M.S III.Z/4/ and meets the methodology applicability conditions and has achieved the estimated GHG emission reductions, complies with the monitoring methodology and has calculated emission reductions estimates correctly and conservatively. <input checked="" type="checkbox"/> The project activity is likely to generate GHG emission reductions amounting to the estimated 4,78,506 tCO₂e, as indicated in the monitoring report/8/9/28/ which are

	<p>addition to the reductions that are likely to occur in the absence of the Project Activity and complies with all applicable UCR rules, including ISO 14064-2 and ISO 14064-3.</p> <p><input checked="" type="checkbox"/> The project activity is not likely to cause any net-harm to the environment and/or society</p> <p><input checked="" type="checkbox"/> The project activity complies with all the applicable UCR rules and therefore recommends UCR Program to register the Project activity with above mentioned labels.</p>
<p>Project Verification Report, reference number and date of approval</p>	<p>Verification Report UCR</p> <p>UCR ID: 345</p> <p>Reference No: NSPL/VR/2023/08/UCR/01</p> <p>Version: 2.0</p> <p>Date: 09/03/2024</p>
<p>Name of the authorised personnel of UCR Project Verifier and his/her signature with date</p>	<div data-bbox="890 1160 1029 1348" data-label="Image"> </div> <p>Mr. Shyam Mandliya GHG Assessor Naturelink Solution Pvt. Ltd. Date: 09/03/2024</p>

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1 Project Verification Report

1.1 Executive Summary

The verification work has been contracted by project aggregator Creduce Technologies Private Limited to perform an independent verification of its UCR project titled “**Energy Efficient AAC Block Manufacturing by Magicrete Building Solutions Pvt. Ltd.**”, **UCR approved project ID:345**, to establish a number of CoUs generated by the project over the crediting period from 01/01/2013 to 31/12/2021 (both days included).

Verification for the period: 01/01/2013 to 31/12/2021

The total GHG emission reductions over the crediting / verification period stated in the Monitoring Report (MR), submitted are found to be correct and in line with the UCR guidelines. The GHG emission reductions were calculated on the basis of UCR guideline which draws reference from the standard baseline, AMS-III.Z – “Fuel Switch, process improvement and energy efficiency in brick manufacture”, Version 06.0. The verification was conducted remotely by way of video calls, by onsite inspection of the plant and submission of documents for verification through emails.

It is certified that the emission reductions from the Energy Efficient AAC Block Manufacturing by Magicrete Building Solutions Pvt. Ltd. (UCR ID – 345) for the period 01/01/2013 to 31/12/2021 amounts to **4,78,506 CoUs (4,78,506 tCO_{2e})**.

Scope

The scope of the verification is the independent, objective review and ex-post determination of the monitored reductions in GHG emission by the project activity.

1. To verify the project implementation and operation with respect to the registered PCN/7/.
2. To verify the implemented monitoring plan with the registered PCN/7/ applied baseline and monitoring methodology.
3. To verify that the actual monitoring systems and procedures follow the monitoring plan.
4. To evaluate the GHG emission reduction data and express a conclusion whether the reported GHG emission reduction data is free from material misstatement
5. To verify that reported GHG emission data is sufficiently supported by evidence.
6. Agreement stating assurance to avoid double accounting for the project to be verified, along with required proof.

The project is assessed against the requirements of the UCR Program Manual/1/, UCR CoU Standard/2/ and UCR verification standard/3/, ISO 14064-2:2019.

Due professional care has been exercised and ethical conduct has been followed by the assessment team during the verification process. The verification report is a fair presentation of the verification activity. The validation of the project is not part of the present assignment and project is deemed validated post-registration by UCR.

1.2 Description of the Project

The project activity is production of high-quality Grade-I Aerated Autoclaved Concrete (herein after called as AAC) blocks as per IS 2185: Part 3: 1984 (Reaffirmed 2005) (Title: “concrete masonry units – autoclaved cellular (aerated) concrete blocks”) and products. The project is located in District Navsari of the state of Gujarat, India. The details of the project activity are verified with the document review and onsite inspection.

The core of this technology is the AAC blocks composition and its chemistry with fly ash from thermal plants mixed with Lime, Cement, Gypsum and Aluminium powder, which enable the blocks to acquire the mechanical properties required during the hydration and curing process without being sintered.

The purpose of the project is to create a high-quality walling material and a well-insulating building material by adopting an efficient, low-energy-intensive brick production process. This process aims to replace the use of high-energy-intensive methods like Clay Brick Bull's trench kilns (BTKs) and make a positive impact on energy consumption at both the brick production and building operation levels.

The technical specification is listed below;

Location	Magicrete Building Solutions Pvt. Ltd, Block No-188/B, 190, Post-Arak, Village-Arekh, Tal- Jalalpore, Dist- Navsari - 394315
Plant Capacity	30,000 m ³ per month (approx.)
Autoclave	16 nos., Designed Pressure – 16 bar
DG Sets	2 nos.; 400 kVA and 320 kVA
Boiler	Tag - GT 6391 Capacity - 8TPH Operating Pressure – 15 kg/cm ² Operating Temperature 195 °C to 198 °C.
Operating days in a year	365
Raw Material	Fly ash, Lime, Cement, POP, Aluminium
Sizes of AAC Block produced by Magicrete	600 x 200 x 75 mm ³ 600 x 200 x 100 mm ³ 600 x 200 x 125 mm ³ 600 x 200 x 200 mm ³
Compressive Strength (MPa)	4.24
Density (kg/m ³)	550-600
Thermal Conductivity (W/m k)	0.20
Start Date of Project	05/10/2009

As mentioned in the monitoring report/8/9/28/ and emission reduction calculation sheet/10/ submitted for verification, the project replaces anthropogenic emissions of greenhouse gases (GHGs) estimated to be approximately 4,78,506 tCO₂e for the said period under verification.

The project activity focuses on manufacturing Aerated Autoclaved Concrete (AAC) blocks, which offer numerous advantages. These blocks have impressive compressive strength, are lightweight, easy to construct and economically viable for transportation. By employing this method as a substitute for traditional bricks produced in kilns, which are CO₂-intensive, the project proponent aims to reduce greenhouse gas emissions. By adopting this low-carbon technology, the project contributes to decreasing emissions and promoting a cleaner environment.

The project is a small-scale activity. The methodology applied in the monitoring report is verified against the AMS-III. Z, "Fuel Switch, process improvement and energy efficiency in brick manufacture", Version 06.0/4/ Verified total emission reduction (ERs) achieved through the project activity during the monitoring period is summarised below:

Summary of the Project Activity and ERs Generated for the Monitoring Period	
Project start date	05/10/2009
Start date of this Monitoring Period	01/01/2013
Carbon credits claimed up to	31/12/2021
Leakage Emission	3,03,902
Project Emission	94,631
Total ERs generated (tCO _{2e})	4,78,506

1.3 Project Verification team, technical reviewer and approver:

Project verification team

Sr. No.	Role	Last name	First name	Affiliation	Involvement in		
					Doc review	On-Site inspection	Interviews
1.	GHG Assessor & Technical Expert	Mandliya	Shyam	Naturelink Solutions Pvt. Ltd.	Yes	Yes	Yes
2.	Trainee Assessor	Prajapati	Divya	Naturelink Solutions Pvt. Ltd.	Yes	No	No

Technical Reviewer of the Verification report

Sr. No.	Role	Last name	First name	Affiliation	Involvement in		
					Doc review	On-Site inspection	Interviews
3..	Internal Technical Reviewer	Amin	Shardul	Naturelink Solutions Pvt. Ltd.	Yes	No	No

2 Verification Process

2.1 Desk/document review

The desk review was conducted by the verification team that included:

- A review of data and information presented to assess its completeness
- A review of the initial PCN/7/, MR/8/9/28/, emission reduction calculation sheet/10/, Methodology – AMS-III.Z/4/.

The list of submitted documents is available in a subsequent section of this verification report under the appendix - 2 “Document reviewed or referenced”.

2.2 Onsite Inspection

Date of on-site inspection:		20/09/2023 to 21/09/2023		
No.	Activity performed On-Site	Site location	Date	Auditee
1.	Opening meeting	Project location	20/09/2023	Mr. Momin Hussain Ms. Mitali Chauhan
2.	Evidence gathering at Raw material handling & mixing, Boiler section, Autoclave section, Curing & Moulding section, D.G. sets and Energy meter, Transportation and Packaging section	Project location	20/09/2023	Mr. Momin Hussain Ms. Mitali Chauhan Mr. Shailu Singh Mr. Jignesh Parmar Mr. Sanjay Patel Mr. Hardik Patel Mr. Navneet Rathod Mr. Abhay Sheth
3.	Closing meeting	Head Office - Surat	21/09/2023	Mr. Mehul Bagadia Ms. Mitali Chauhan

2.3 Interviews: Online and On-site

No.	Interview			Date	Subject
	Last name	First name	Affiliation		
1.	Bagadia	Mehul	VP - Magicrete Building Solutions Pvt. Ltd,	20/09/ 2023	Legal ownership of the project, Implementation of the project,

					start date and crediting period, Double counting of the carbon credits
2.	Hussain	Momin	AGM -EHS Magicrete Building Solutions Pvt. Ltd,	20/09/ 2023	Overview of the plant, Project boundary, Monitoring plan,
3.	Singh	Shailu	Batching operator- Magicrete Building Solutions Pvt. Ltd,	20/09/ 2023	Raw material handling & its composition
4.	Parmar	Jignesh	Electrical Maintenance & D.G. Set - Magicrete Building Solutions Pvt. Ltd,	20/09/ 2023	Electricity generation, meter reading, log book, meter calibration, Diesel Consumption
5.	Patel	Sanjay	Fuel Consumption - Magicrete Building Solutions Pvt. Ltd	20/09/ 2023	Fuel consumption and its daily record maintenance
6.	Patel	Hardik	QA/QC laboratory - Magicrete Building Solutions Pvt. Ltd	20/09/ 2023	Laboratory testing of AAC block, QA/QC Procedures
7.	Rathod	Navneet	Weighbridge operator – Magicrete Building Solutions Pvt. Ltd.	20/09/ 2023	Weighbridge slips
8.	Sheth	Abhay	A.M. Finance- Magicrete Building Solutions Pvt. Ltd	21/09/ 2023	Purchase and sales invoices, overall data management
9.	Rathore	Natasha	Senior Consultant - Creduce Technologies Pvt. Ltd.	20/09/ 2023 & 21/09/ 2023	Project Overview, PCN, Monitoring Report, Methodology eligibility criteria, Baseline emissions, Emission Reduction Calculation

2.4 Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	No. of CL	No. of CAR	No. of FAR
Green House Gas (GHG)			
Identification and Eligibility of project type	NIL	NIL	NIL
General description of project activity	01	NIL	NIL
Application and selection of methodologies and standardized baselines	--	--	--
<ul style="list-style-type: none"> Application of methodologies and standardized baselines 	01	NIL	NIL
<ul style="list-style-type: none"> Deviation from methodology and/or methodological tool 	01	NIL	NIL
<ul style="list-style-type: none"> Clarification on applicability of methodology, tool and/or standardized baseline 	NIL	NIL	NIL
<ul style="list-style-type: none"> Project boundary, sources and GHGs 	NIL	NIL	NIL
<ul style="list-style-type: none"> Baseline scenario 	NIL	01	NIL
<ul style="list-style-type: none"> Estimation of emission reductions or net anthropogenic removals 	01	01	NIL
<ul style="list-style-type: none"> Monitoring Report 	NIL	01	NIL
Start date, crediting period and duration	NIL	NIL	NIL
Environmental impacts	NIL	NIL	NIL
Project Owner- Identification and communication	NIL	NIL	NIL
Others (please specify)	01	NIL	NIL
Total	05	03	NIL

3 Project Verification findings

3.1 Identification and eligibility of project type

<p>Means of Project Verification</p>	<p>The project is eligible as per UCR General project eligibility criteria and guidance Version 6.0/2/ which is acceptable since the project has not been registered under any GHG program and the operations started since 05/10/2009 which is the earliest commissioning date of the manufacturing facility.</p> <p>Prior to the commencement of the project activity, the project owner has received consent to operate (CTO)/12/ for the installation and operation of manufacturing activity from Gujarat Pollution Control Board (GPCB). Project owner also obtained factory license/11/ from Director Industrial Safety & Health Gujarat state.</p> <p>The project capacity as per CTO/12/ is 30,000 m³/month of AAC Blocks.</p> <p>Project applies an approved CDM monitoring and baseline methodology AMS-III.Z Fuel Switch, process improvement and energy efficiency in brick manufacture, Version 06.0/4/.</p>
<p>Findings</p>	<p>No findings raised</p>
<p>Conclusion</p>	<p>The project is eligible as per the requirements of the UCR General project eligibility criteria and guidance Version 06.0./2/</p> <p>Further project verification team cross checked the other GHG programmes like Clean Development Mechanism (CDM) Registry, VERRA Registry, Gold Standard (GS) Registry and confirmed that the project was not submitted or registered under any other GHG programmes and non-voluntary non-GHG Programs, GPS coordinates, Legal Ownership of the Project activity is not submitted or registered under any other GHG programmes and non-voluntary non-GHG Programs.</p>

3.2 General description of project activity

<p>Means of Project Verification</p>	<p>The project activity is to create a high-quality walling material and a well-insulating building material by adopting an efficient, low-energy-intensive brick production process. This process aims to replace the use of high-energy-intensive methods like Clay Brick Bull's trench kilns (BTKs) and make a positive impact on energy consumption at both the brick production and building operation levels.</p>
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	<p>This is a green field project. Prior to proposed project activity, there was no AAC block/brick manufacturing facility at the project location which was verified by the onsite interview with project personnel.</p> <p>The fly ash generated is dumped in the open and disposed of without using them at the thermal power station. In clay brick manufacturing, sintering process requires huge amount of thermal energy inputs, which is sourced majorly from the fossil fuel-coal combustion with a small quantum from combustion of biomass in the form of fuel wood. Production of AAC blocks and panels does not require any sintering process as the project activity eliminates the burning of fossil fuel as required in the clay brick production. So, the amount of such energy, which is required in the project activity scenario, is much lower than the thermal energy required in clay brick manufacturing process. Therefore, the project activity enables total energy reduction and its associated GHG reduction due to change in brick production process.</p> <p>The Location details has been verified during the onsite visit and geo coordinates verified through google earth/Maps.</p> <p>The project uses various raw materials like Fly ash, Lime, Cement, POP, Aluminium for the production of AAC Block. The project used Lignite/Coal and Diesel as fuels.</p> <p>The project activity described and applied AMS-III.Z, Fuel Switch, process improvement and energy efficiency in brick manufacture, Version 06.0/4/.</p>
Findings	CL 01 was raised
Conclusion	The description of the project activity is verified to be true based on the review of PCN/7/, MR/28/, Factory license/11/ and Consent to operate/12/.

3.3 Application and selection of methodologies and standardized baselines

3.3.1 Application of methodology and standardized baselines

Means of Project Verification	<p>The project activity applied AMS-III.Z, Fuel Switch, process improvement and energy efficiency in brick manufacture, Version 06.0/4/.</p> <p>Baseline condition is “in the absence of the proposed project activity, the energy demand would have been supplied to the processing plants by the coal-based boiler” and clearly mentioned in PCN/7/ and MR/8/9/28/.</p>
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Findings	CL 02 was raised
Conclusion	The project activity is clearly depicting the applied methodology/4/ and its standardized baseline and meets the requirements of UCR standards/2/.

3.3.1.1 Deviation from methodology and/or methodological tool

Means of Project Verification	<p>The project activity has applied AMS-III.Z, Fuel Switch, process improvement and energy efficiency in brick manufacture, Version 06.0/4/.</p> <p>Standardized baseline and monitoring plan mentioned in the methodology/4/ has been verified against project activity.</p> <p>As per the applied methodology/4/ clause 11-c), the emission reductions are increasing for the vintage years 2015, 2017, 2018, 2019 and 2021.</p>
Findings	CL 03 was raised
Conclusion	The verification team has checked the updated UCR guidelines for exceeding the cap of 60 kt/year of emission reductions for the applied methodology/4/.

3.3.2 Clarification on applicability of methodology, tool, and/or standardized baseline

Means of Project Verification	Applicability as per AMS-III.Z, Version 06.0	Verifier assessment
	a) The measures may replace, modify, retrofit or add capacity to systems in existing facilities or be installed in a new facility.	<p>The project activity is a green field project and no replace, modification or addition was done at the facility.</p> <p>In the absence of the project activity the total heat and energy demand of the plant would be met by coal-based boiler and existing technology which is carbon intensive.</p> <p>This fact was confirmed during the onsite visit and through document review of historical production records.</p>

	<p>The methodology is applicable for the production of:</p> <ul style="list-style-type: none"> a. Bricks that are the same in the project and baseline cases; or b. Bricks that are different in the project case versus the baseline case due to a change(s) in raw materials, use of different additives, and/or production process changes resulting in reduced use or avoidance of fossil fuels for forming, sintering (firing) or drying or other applications in the facility as long as it can be demonstrated that the service level of the project brick is comparable to that of the baseline brick. Examples include pressed mud blocks (soil blocks) with cement or lime stabilization and other 'unburned' bricks that attain strength due to fly ash, lime/cement and gypsum chemistry. 	<p>The project activity uses completely different raw materials like Fly ash (70 wt%), Gypsum, Cement, Aluminium and POP. This was also verified with the list of suppliers/18/, its purchase invoices/19/ and raw material composition per mould/17/. Therefore, point no. b of the criterion of the methodology is applied appropriately.</p>
	<p>New facilities (Greenfield projects) and project activities involving capacity additions are only eligible if they comply with the requirements for Greenfield projects and capacity increase projects specified in the "General guidelines for SSC CDM methodologies".</p>	<p>No capacity addition in the existing project. This is green field project activity which was verified and confirmed through onsite verification and interviewed with project owner and their representatives.</p>
	<p>The requirements concerning the demonstration of the remaining lifetime of the replaced equipment shall be met as described in the "General guidelines for SSC CDM methodologies". If the remaining lifetime of the affected systems increases due to the project activity, the crediting period shall be limited to the estimated</p>	<p>There is no retrofit or replacement is done at project activity, hence it is not applicable.</p>

	remaining lifetime, i.e. the time when the affected systems would have been replaced in the absence of the project activity	
	For existing facilities, it shall be demonstrated, with historical data, that for at least three years immediately prior to the start date of the project implementation, only fossil fuels or NRB (non-renewable biomass) were used in the brick production systems that are being modified or retrofitted. In cases where small quantities of renewable biomass were used for experimental purposes this can be excluded.).	This is completely a greenfield project activity, so this criterion does not apply.
	The renewable biomass utilized by the project activity shall not be chemically processed (e.g. esterification to produce biodiesel, degumming and/or neutralization by chemical reagents) prior to the combustion but it may be processed mechanically (e.g. pressing, filtering) and/or thermally (e.g. gasification to produce syngas).	The project activity does not use renewable biomass as fuel, which was verified by the onsite inspection and purchase invoices/19/.
	In cases where the project activity utilizes charcoal produced from renewable biomass as fuel, the methodology is applicable provided that: <ul style="list-style-type: none"> a. Charcoal is produced in kilns equipped with a methane recovery and destruction facility; or b. If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, methane emissions from the production of charcoal shall be considered. A default value of 0.030 tCH₄/t charcoal may be used in accordance with "AMS-III.BG.: Emission reduction through sustainable 	The project activity does not utilize charcoal in its production process which was verified through onsite assessment, purchase invoices/19/.

	<p>charcoal production and consumption";</p> <p>a. If charcoal is produced from other CDM project activities, it shall be ensured that no double counting of the emission reductions occurs.</p>	
	<p>In the case of project activities involving changes in raw materials (including additives), it shall be demonstrated that additive materials are abundant in the country/region, according to the following procedures:</p> <p>a. Step 1: Using relevant literature and/or interviews with experts, a list of raw materials to be utilized is prepared based on the historic and/or present consumption of such raw materials;</p> <p>b. Step 2: The current supply situation for each type of raw material to be utilized is assessed and their surplus availability is demonstrated using one of the approaches below:</p> <p>i. Approach 1: Demonstrate that the raw materials to be utilized, in the region of the project activity, are not fully utilized. For this purpose, demonstrate that the quantity of material is at least 25 per cent greater than the demand for such materials or the availability of alternative materials for at least one year prior to the project implementation;</p> <p>ii. Approach 2: Demonstrate that suppliers of the raw materials to be utilized, in the region of the project activity, are not able to sell all of their supply of these materials. For this purpose, project participants shall demonstrate that a representative sample of suppliers of the raw materials</p>	<p>The project activity utilizes fly ash, lime, gypsum, cement and aluminium. Fly ash is that account approximately 70% of total raw material consumption which is a waste product generated from coal-based power plants, gypsum is a by-product but used in very small quantities, whereas lime, cement and Aluminium are industrial products.</p> <p>As per the report published by CEA on page no. 43 "Report on fly ash generation at coal/ lignite based thermal power stations and its utilization in the country for the year 2021"/21/ it was verified that in the year 2007-08, around 117 million tons of fly ash generated and only 53% were utilized. Therefore, fly ash is available in abundant amount and meets the criterion of the applied methodology/4/.</p>

	<p>to be utilized, in the region, had a surplus of materials (e.g., at the end of the period during which the raw material is sold) that they could not sell and that is not utilized.</p>	
	<p>This methodology is applicable under the following conditions:</p> <ol style="list-style-type: none"> a. The service level of the project brick shall be comparable to or better than the baseline brick, i.e., the bricks produced in the brick production facility during the crediting period shall meet or exceed the performance level of the baseline bricks (in terms of, for example dry compressive strength, wet compressive strength, density). An appropriate national standard shall be used to identify the strength class of the bricks; bricks that have compressive strengths lower than the lowest class bricks in the standard are not eligible under this methodology. Project bricks are tested in nationally approved laboratories at six-month intervals (at a minimum) and test certificates on compressive strength are made available for verification; b. The existing facilities involving modification and/or replacement shall not influence the production capacity beyond ± 10 per cent of the baseline capacity unless it is demonstrated that the baseline for the added capacity is the same as that for the existing capacity in accordance with paragraph 5 above; c. Measures are limited to those that result in emission reductions of less than or 	<p>The AAC blocks are having lower density & higher compressive strength compared to baseline traditional red clay brick which was verified through six monthly tests carried by third party laboratory/15/.</p> <p>Also, PO has inhouse laboratory to test the compressive strength and density of AAC blocks of every batch produced to meet the criteria.</p> <p>The emission reductions are exceeding 60 kt CO_{2e} annually for the vintage years 2015, 2017, 2018, 2019 and 2021, however project proponent has raised the deviation request to the UCR to exceed the cap of 60 kt year and same is accepted by UCR and confirmed and verified through UCR notification for Removal of 60 kt CO₂ annual CoU cap for UNFCCC CDM AMS-III.Z. Small-scale methodology users/29/.</p>

	equal to 60 kt CO2 equivalent annually.	
	This methodology is not applicable if local regulations require the use of the proposed technologies or raw materials for the manufacturing of bricks unless widespread non-compliance (i.e., less than 50 per cent of brick production activities in the country comply) of the local regulation evidenced.	The PO has voluntarily chosen to use this technology as there are no local regulations require the use of the technology.
	In cases where the project activity utilizes biomass sourced from dedicated plantations, applicability conditions prescribed in the tool "Project emissions from cultivation of biomass" shall apply. If the project activity involves reducing the NRB consumption, project participants shall demonstrate that NRB has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.	The project activity does not utilize the Biomass; hence this criterion is not applicable.
	The following cases are exempted from 'determining the occurrence of debundling' as per the "Guidelines on assessment of debundling for SSC project activities": a. Project activities that aggregate brick units with holistic production cycles i.e., from raw material procurement to finished product, where each unit is not larger than 5 per cent of the Type III small-scale CDM project activity thresholds i.e. 3,000 tCO2e; or b. Project activities that aggregate brick units, where each unit qualifies as Type III microscale CDM project activity and the geographic location of the project activity is a least developed countries/small island	The project activity is not debundled component of larger Program of activities; which was verified with factory license/11/ and Consent to operate certificate/12/.

	developing states (LDC)/(SIDS) or special underdeveloped zone (SUZ) of the host country as identified by the government in accordance with the guideline on “Demonstrating additionality of microscale project activities”.
Findings	CAR 01 and CL 04 was raised
Conclusion	The methodology applied/4/ is appropriately meeting the requirements of UCR standard/2/ and its standardized baseline. The methodology version is correct and valid. The referenced methodology is applicable to project activity.

3.3.3 Project boundary, sources and GHGs

Means of Project Verification	<p>As per the applied methodology AMS-III. Z version 6.0/4/, the spatial extent of the project boundary includes manufacturing facility where production of AAC blocks is taking place, NEWNE Grid and source of fuel and raw materials. The components of the project boundary mentioned in the PCN/7/ were checked against the para 19 of the applied methodology/4/.</p> <p>The project verification team conducted desk review of the implemented project to confirm the appropriateness of the project boundary identified and all GHG sources required by the methodology have been included within the project boundary.</p> <p>It was assessed that no emission sources related to project activity will cause any deviation from the applicability of the methodology or accuracy of the emission reductions.</p> <p>The project boundary is clearly depicted with the help of a pictorial depiction in section A.3. of the PCN/7/ and duly verified by the verification team via Factory license/11/, consent to operate/12/ and onsite inspection of the project activity.</p>
Findings	No finding was raised.
Conclusion	<p>The project verification team was able to assess that complete information regarding the project boundary has been provided in PCN/7/ & MR/28/ and further can be assured from Factory license/11/ and Consent to operate/12/</p> <p>The project verification team confirms that the identified boundary, selected emissions sources are justified for the project activity.</p>

3.3.4 Baseline scenario

Means of Project Verification	<p>As per the consolidated methodology AMS-III.Z. Version 06.0/4/, baseline scenario is that the specific energy demand for manufacturing AAC blocks is lower compare to conventional 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 fired clay bricks. Thus, the project activity results in lower GHG emission as compared to the conventional clay bricks manufacturing process.</p> <p>The baseline scenario defined in PCN/7/ and MR/8/9/28/ in the absence of the project activity; the bricks would have been produced through energy intensive technology.</p>
Findings	CAR 02 was raised
Conclusion	The project verification team concluded that the identified baseline scenario reasonably represents what would occur in the absence of the project activity.

3.3.5 Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	<p>The project verification team checked whether the equations and parameters used to calculate GHG emission reductions or net anthropogenic GHG removals for PCN/7/ and MR/8/9/ is in accordance with applied methodology/4/.</p> <p>Project Verification team checked section B.5 and C.5.1 of the PCN/7/ & MR/8/9/28/ respectively to confirm whether all formulae to calculate baseline emissions, project emission and leakage emission have been applied in line with applied methodology/4/.</p> <p>As per the para 20 of the applied methodology/4/, baseline emission reduction calculation is,</p> $BE_y = SEC_{BL} \times EF_{BL} \times P_{PJ,y}$ <p>Where,</p> <p>BE_y = Annual Baseline Emissions from fossil fuels or NRB displaced by the project activity in year y; tCO₂</p> <p>SEC_{BL} = Specific energy consumption of brick production in the baseline, TJ per unit volume of mass unit (kg or m³)</p> <p>EF_{BL} = Emission factors of baseline fuel(s) in tCO₂/TJ</p> <p>$P_{PJ,y}$ = The annual net production of the facility in the year y, in kg or m³</p>
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As per the literature referred/23/, embodied energy associated with the fire brick is estimated at around 2.2 MJ/kg and considering the conservative density of 1600 kg/m³ and coal emission factor of 96.1 tCO₂e/TJ, the emission factor of baseline brick is ;

$$= 2.2 \times 1600 \times 10^{-6} \times 96.1$$

$$= 0.338272 \text{ tCO}_2\text{e/m}^3$$

Therefore, Estimated baseline emission (BE) reductions for the monitoring period is -

$$\text{BE} = 2592719 \times 0.338272$$

$$\text{BE} = 877044 \text{ tCO}_2\text{e}$$

As per para 24 of the applied methodology Project emissions is;

$$\text{PE}_y = \text{PE}_{\text{elec},y} + \text{PE}_{\text{fuel},y} + \text{PE}_{\text{cultivation},y} + \text{PE}_{\text{CH}_4,y}$$

Where,

PE_y = Project emissions in year y (tCO₂e)

PE_{elec,y} =

Project emissions due to electricity consumption in year y (tCO₂e); the electricity is consumed by both grid as well as DG set. the unit has installed two DG sets of 320 kVA and 400 kVA/14/ each for the purpose of electricity generation in the times of power cut off. Total diesel consumption over the period of crediting period is 792234 Liters and the emission factor as per IPCC data for the diesel is 74.1 tCO₂/TJ.

Total electricity supplied by the grid is = 16194.48 MWh x 0.9 tCO₂/MWh

$$\text{PE}_{\text{elec}} = 14579 \text{ tCO}_2\text{e}$$

PE_{fuel,y} = The project activity operates coal-based boiler for the production of steam and consists of two DG sets of capacity 320 and 400 kVA.

$$\text{PE}_{\text{FC},y} = \sum \text{FC}_{i,j,y} \times \text{COEF}_{i,y}$$

PE_{FC,y} = Project emissions due to fuel consumption in year y (tCO₂e)

FC_{i,j,y} = is the quantity of fuel type i combusted in process j during the year y (mass or volume unit/yr)

COEF_{i,y} = Is the CO₂ emission coefficient of fuel type i in year y (tCO₂/mass or volume unit)

EF of fuels has been chosen as per IPCC data/24/.

Type of fuel	Total fuel consumption (kg)	CV (MJ/kg)	Emission factor (tCO ₂ /TJ)	Total Project emission
Lignite	6,20,60,072	11.9	101	74590
Furnace oil	9,39,263	40.4	77.4	2937.04
Diesel	7,92,234	43	74.1	2524.29

$PE_{\text{cultivation},y}$ = Project emissions from cultivation of biomass in a dedicated plantation in year y (tCO_{2e}); as mentioned in the PCN/7/, MR/8/9/28/ and document review, project activity does not use biomass; therefore $PE_{\text{cultivation},y} = 0$

$PE_{\text{CH}_4,y}$ = Project emissions due to the production of charcoal in kilns not equipped with a methane recovery and destruction facility in year y (tCO_{2e}) ; since the project is not using any charcoal PE related to is zero.

Leakage Emissions:

As per the paragraph 30 of the applied methodology AMS III.Z Version 6.0/4/, incremental emissions associated with the production/consumption and transport of those raw and/or additive materials should be considered.

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

LE_y : Leakage emissions associated with consumption and transport of raw and/or additive materials in the year y.

$LE_{\text{rm,prod},y}$: Leakage emissions associated with consumption of raw and/or additive materials in the year y

$LE_{\text{TR},m}$: Leakage emission associated with transportation of raw and/or additive materials in the year y

Considering heavy vehicle used for transportation of raw material, Emission factor due to freight transport has been chosen as per methodological tool “Project and leakage emissions from road transportation of freight.” (Version 01.0.0)/27/

Emission factor of aluminium and lime are chosen as per IPCC data/24/.

Emission factor of cement has been chosen as per data published by CSI Protocol/26/.

Emission factor of Gypsum & POP has been chosen as per “Methodology for the free allocation of emission allowances in the EU ETS post 2012, Chapter 4 Benchmark Values”/25/.

Farthest raw material supplier is chosen for the calculation of total return trip distance, which is verified as per the supplier list/19/ provided and google map locations.

Raw material	Total raw material consumption (Ton)	Emission factor of raw material (tCO ₂ /ton)	Total return trip distance (km)	Emission factor due to freight transport (gCO ₂ /t km)
Aluminium	1116.827	1.89	1589.6	129
Ash	1278564.085	0	156.8	
Lime	148805.067	0.75	1648	
Cement	226467.011	0.67	1108	
POP	4576.524	0.05	1990	
Gypsum	3699.030	0.01	1990	

	<p>Total LE from raw material transportation and raw material production stands to be 3,03,902 tCO_{2e}</p> <p>Emission reductions</p> <p>As per Paragraph 31 of the applied methodology, emission reductions are calculated as follows</p> $ER_y = BE_y - PE_y - LE_y$ <p>Where:</p> <p>ER_y = Emission reductions in year y (tCO_{2e}/y)</p> <p>BE_y = Baseline Emissions in year y (t CO₂/y)</p> <p>PE_y = Project emissions in year y (t CO₂/y)</p> <p>LE_y = Leakage emissions in year y (t CO₂/y)</p> <p>ER = 8,77,044 – 94,631 – 3,03,902</p> <p>Net ER = 4,78,506 tCO_{2e}</p> <p>Based on the above estimation emission reductions based on the data provided parameters is 4,78,506 tCO_{2e}</p>
Findings	CL 05 and CAR 02 was raised
Conclusion	<p>Project Verification team confirm that the algorithms and formulae proposed to calculate project emissions, baseline emissions, leakage and emission reductions in the PCN/7/ and MR/9/ is in line with the requirements of the selected methodology AMS-III.Z, version 06.0/4/</p> <p>For the calculation, the assessment team confirms that</p> <p>All assumptions and data used by the project participants are listed in the PCN/7/ including their references and sources.</p> <p>All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PCN/7/ & MR/9/.</p> <p>All values used in the PCN/7/ & MR/9/ are considered reasonable in the context of the proposed project activity</p> <p>The baseline methodology and the applicable tool(s) have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;</p> <p>All calculations are complete and without any omissions.</p>

3.3.6 Monitoring Report

Means of Project Verification	<p>The monitoring report/8/9/28/ submitted by the PP has been verified thoroughly against the requirements of applied methodology/4/ and UCR standard/2/ for calculation of GHG emission reductions.</p> <p>The assessment team has reviewed all the parameters in the monitoring plan against the requirements of the applied methodology and monitoring parameters are applied in line with the requirement of the methodology and relevant in the context of the UCR program. The procedures have been reviewed by the assessment team through document review and interviews with the respective monitoring personnel. Relevant points have been discussed with the project owner specifically; monitoring methodology, data management and calibration of the equipment.</p>
Findings	<p>CAR 03 was raised</p>
Conclusion	<p>The project verification team confirms that,</p> <p>The monitoring report/9/ is in compliance with the applicable methodology/4/ and UCR standard/2/.</p> <p>The monitoring parameter reported in MR/28/ adequately represents the parameters relevant to emission reduction calculation.</p> <p>The calibration report of weigh bridge ensures the accuracy of the data reported.</p> <p>The number of CoUs generation is calculated based on the accurately reported data. The calculation was done using an excel sheet where all the parameters were reported.</p> <p>The emission factor for electricity consumption is as per UCR standard/2/.</p> <p>In the monitoring report/9/, emission reduction calculations are correctly calculated and reported and meets the requirements of UCR project verification standard/3/</p>

3.4 Start date, crediting period and duration

Means of Project Verification	<p>The Start date of the project activity is considered as 05/10/2009 which is the date on which factory license/11/ was issued to the project activity.</p> <p>Crediting period for the project activity is from 01/01/2013 to 31/12/2021 which was verified as per the UCR standard/2/.</p>
Findings	<p>No finding was raised.</p>

Conclusion	The start dates and the crediting period type & length have been verified and found to be in accordance with UCR project standard/2/.
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3.5 Environmental impacts and safeguard assessment

Means of Project Verification	<p>The project activity has obtained Consent to operate/12/ from Gujarat Pollution Control Board and complying all the rules and regulations mentioned thereof.</p> <p>The impact of the project activity on the environmental safeguards has been carried out.</p> <p>Out of all the safeguards no risks were identified to the environment due to the project implementation and operation.</p> <p>The facility does not produce any pollution in manufacturing process but utilizes the waste products like Fly ash which create environmental pollution by increasing dust levels of atmosphere.</p> <p>And the following have been indicated as positive impacts</p> <p>By using fly ash as the main ingredient for block production it helps reduce the environmental hazard caused due to improper disposal of fly ash and other thermal plant waste products, which are labelled as hazardous substance if not disposed properly.</p> <p>The project activity will cause comparatively less air pollution, water pollution and disposal of solid waste to the environment which otherwise would have been generated if the traditional technology was used for brick manufacturing</p> <p>The consumption of energy (electricity/fuel) to generate steam is much lower compared to the thermal energy consumed for the production of burnt clay bricks and hence displaces the carbon-intensive coal/fuel oils.</p> <p>Following approaches applied for mitigation of the impacts.</p> <ol style="list-style-type: none"> 1. Water has been sprinkled on or surrounding of stored fly ash to avoid fugitive emission. 2. The handling of fly ash i.e. transportation, loading and storage is done in scientific manner so as to avoid fugitive emission and spillages.
Findings	No finding was raised.
Conclusion	<p>The project activity displaces conventional raw material – Clay with waste product Fly ash for production of AAC Blocks that is less energy intensive process.</p> <p>The project has also avoided total 4,78,506 tCO₂.</p>

	Based on the documentation review the project verification team can confirm that Project Activity is not likely to cause any negative harm to the environment but would have a positive impact
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3.6 Project Owner- Identification and communication

Means of Project Verification	<p>The information and contact details of the project owner was verified with Factory license/11/ and Consent to operate/12/ has been appropriately incorporated in the PCN/7/</p> <p>The legal owner of the project is Magicrete Building Solution Pvt Ltd. and same to be demonstrated by the project owner through the commissioning certificates, Factory license/11/ and Consent to operate/12/.</p>
Findings	No finding was raised.
Conclusion	The project verification team confirms that the information of the project owners has been authorized.

3.7 Positive Social Impact

Means of Project Verification	<p>Out of all the safeguards no risks were identified to the society due to the project implementation and operation. Only positive impacts identified by the Project owner which is not likely to cause any harm. The following have been identified as positive impacts of the project activity.</p> <p>Social – Jobs – Long-term jobs (> 1 year) created.</p> <p>Social – Welfare- Women’s empowerment.</p> <p>Social - Health & Safety - Reducing / increasing accidents.</p> <p>Project has provided long term employment to local people during its installation and commissioning. Also post commissioning some of people have employed permanently and local people were engaged leading to social financial benefit to surrounding. Overall social impact of project implementation is positive on the surrounding area.</p>
Findings	--
Conclusion	Project has overall positive social impact.

3.8 Sustainable development aspects (if any)

Means of Project Verification	Not Applicable
Findings	--
Conclusion	The Project has the capability to address SDG 7 Affordable and Clean Energy and SDG 13 Climate Action

3.9 Others (Double Counting of Credits)

Means of Project Verification	<p>The project activity was searched on other GHG programs to ensure that project is not registered in any other GHG programs like VERRA, Gold standard, GCC.</p> <p>An agreement stating that project activity will not cause double counting of the credits is also checked as per clause 1.8, Universal Carbon Registry Program Manual (Ver 4.0) August 2022.</p>
Findings	No findings were raised
Conclusion	Double accounting agreement/21/ is signed between PO and Aggregator and found to appropriate as per clause 1.8, Universal Carbon Registry Program Manual (Ver 4.0) August 2022/1/.

4 Internal quality control:

- Due professional care has been taken while reviewing the submitted document.
- There is no conflict of interest as the verifier has no other engagement with either the aggregator or project owner directly or indirectly.
- Verification team consists of experienced personnel.
- Technical review is performed by an independent person.

5 Project Verification opinion:

The project verification was conducted on the basis of UCR Program Manual/1/, UCR General project eligibility criteria and guidance/2/, UCR Verification standard /3/, AMS-III.Z. – Fuel switch, process improvement and energy efficiency in brick manufacture, version 06.0./4/, Project Concept Note (PCN)/7/, Monitoring Report /8/9/28/, Factory license/11/, Consent to operate/12/, and documents mentioned in Appendix-2.

Verification team raised 05 Nos. of Clarification Requests (CLs) and 03 Nos. of Corrective Actions Requests (CARs) and were closed satisfactorily.

The emission reduction amounts to 4,78,506 CoUs (4,78,506 tCO₂e) from the project activity “Energy Efficient AAC Block Manufacturing by Magicrete Building Solutions Pvt. Ltd. (UCR ID – 345)” for the period 01/01/2013 to 31/12/2021 has been verified with reasonable level of assurance as per the UCR Verification standard /3/.

6 Competence of team members and technical reviewers

No.	Last name	First name	Affiliation	Technical Competence
1.	Mandliya	Shyam	GHG Assessor and Technical Expert	Mr. Shyam Mandliya is having M.E in Chemical Engineering. He has expertise in environmental audits. He has performed environmental monitoring of different industries in Gujarat for air, water, and hazardous waste. He has also contributed to the community-based biogas project development.
2.	Prajapati	Divya	Trainee Assessor	Ms. Divya Prajapati is having M. Tech. in Environmental Engineering. She has experience in performing Environmental Impact Assessments of Various industries.
2.	Amin	Shardul	Technical Reviewer	Mr. Shardul Amin is a post-graduate having M. Tech in Thermal System Design. He has more than 7 years of experience in the field of waste-to-energy, thermochemical conversion technologies, and emission study. He has previously performed GHG Verification of more than 50 GHG emission reduction projects on UCR.

Appendix 1: Abbreviations

Abbreviations	Full texts
UCR	Universal Carbon Registry
GPCB	Gujarat Pollution Control Board
AAC	Autoclaved aerated concrete
CEA	Central Electricity Authority
MR	Monitoring report
PCN	Project Concept Note
VR	Verification Report
VS	Verification Statement
DAA	Double Accounting Agreement
PP/PO	Project Proponent / Project Owner
PA	Project Aggregator
ER	Emission Reduction
CoUs	Carbon offset Units.
tCO ₂ e	Tons of Carbon Dioxide Equivalent
kWh	Kilo-Watt Hour
MWh	Mega-Watt Hour
CDM	Clean Development Mechanism
SDG	Sustainable Development Goal
CAR	Corrective Action Request
CL	Clarification Request
FAR	Forward Action Request
GHG	Green House Gas

Appendix 2: Document reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	UCR	UCR Program Manual	Version 4.0, August 2022	UCR website
2.	UCR	General project eligibility criteria and guidance	Version 6.0, August 2022	UCR website
3.	UCR	Program Verification standard	Version 2.0, August 2022	UCR website
4.	CDM	AMS-III.Z: "Fuel Switch, process improvement and energy efficiency in brick manufacture"	Version 06.0	CDM website
5.	CEA	Emission factor as per CEA database "CO2 Baseline Database for the Indian Power Sector"	Version 18.0 dated December 2022	-
6.	CEA	Central Electricity Authority (Installation and Operation of Meters) (Amendment) Regulations, 2022	Dated 28/02/2022	-
7.	Creduce	Project Concept Note	Version 1.0 dated 30/06/2023	PA
8.	Creduce	Monitoring report	Version 1.0 dated 25/08/2023	PA
9.	Creduce	Monitoring report	Version 2.0 dated 16/12/2023	PA
10.	Creduce	Emission reduction excel "Energy Efficient AAC Block Manufacturing by Magicrete Building Solutions Pvt. Ltd"	Version 1.0 dated 25/08/2023	PA
11.	DIS&H	Factory license	No.: 356/26957/2009	PA
12.	GPCB	Consent to operate (CTO)	AWH-42487 dated 27/06/2011, AWH-70267 dated 03/05/2015, AWH-108192 dated 27/05/2020	PA
13.	GBID	Certificate for use of a boiler	No.: CA032021-20220027817	PA
14.	Office of the electrical inspector	D.G. Set Installation certificate	400 kVA - No: EI/VLD/INS/1854/2011 320 kVA - No.: EI/VLD/INS/589/2013	PA

15.	Various	AAC block test reports from the year 2013 to 2021	-	PA
16.	DGVCL	Electricity invoice from the year 2013 to 2021	-	PA
17.	PO	Raw material composition per mould	-	
18.	PO	List of suppliers	-	PA
19.	PO	Purchase invoices	-	PA
20.	Creduce	Double Accounting Agreement	Dated 11/09/2023	PA
21.	CEA	Report on fly ash generation for the year 2021-22	August 2022	PA
22.	Elsevier	Embodied energy assessment of building materials in India using process and input-output analysis	http://dx.doi.org/10.1016/j.enbuild.2014.10.042	PA
23.	Elsevier	Embodied energy analysis to understand environmental impact of brick industry in West Godavari region	https://doi.org/10.1016/j.matpr.2021.06.061	
24.	IPCC	2006 IPCC, Volume 3: Industrial Processes and Product Use	-	IPCC
25.	ECOFYS	Methodology for the free allocation of emission allowances in the EU ETS post 2012	-	PA
26.	WBCSD	WBCSD article	Indian cement industry on track to meet 2030 carbon emissions int (wbcsd.org)	PA
27.	CDM	Project and leakage emissions from road transportation of freight.”	Version 01.0.0	CDM
28.	Creduce	Monitoring report	Version 3.0	PA
29.	UCR	Removal of 60 kt CO ₂ annual for UNFCCC CDM AMS-III.Z	Methodology Deviation Notification by Universal Carbon Registry/Universal Water Registry Mar, 2024 Medium	UCR

Appendix 3: Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

CL ID	01	Section no.: 3.2	General description of project activity	Date: 23/09/2023
Description of CL				
<i>As per Consent to operate issued by GPCB; it has mentioned three nos. of D.G. Sets, however as per the onsite visit conducted on 20/09/2023 two nos. of D.G. sets were installed at the plant, please clarify.</i>				
Project Owner's response				Date: 16/12/2023
<i>At the time of approval, we had taken permission for 03 D.G. Sets but installed only 02 D.G. Sets as per our current capacity and requirement.</i>				
Documentation provided by Project Owner				
<i>D.G. Set Installation Certificates of 400 kVA and 320 kVA</i>				
UCR Project Verifier assessment				Date: 24/01/2024
Clarification provided the PO is accepted, hence CL 01 stands closed.				

CL ID	02	Section no.: 3.3.1	Application of methodology and standardized baselines	Date: 06/09/2023
Description of CL				
<i>Below mentioned documents are missing</i>				
<ol style="list-style-type: none"> <i>1. As per clause 11 of applied methodology/4/, test reports for the compressive strength of AAC block from Nationally approved laboratory is pending from the year 2013 to 2021.</i> <i>2. As per clause 24 of applied methodology/4/, For the calculation of Project emission due to electricity consumption; Calibration certificates of energy meter and Electricity consumption invoice are missing for the year 2013 to 2021.</i> <i>3. As per the clause 30 of the applied methodology/4/, for the calculation of leakage emission due to transportation of raw materials; weigh bridge calibration certificates for the years 2013 to 2015, April-2019 to June-2020, June -2021 to July-2021 are missing.</i> 				
<i>Gypsum & POP supplier name and its distance from the plant is missing.</i>				

Please clarify

4. *As per the applied methodology/4/, project using charcoal produced from biomass is required to consider emission factor of methane 0.030 tCH₄/t , PO has applied the same and mentioned negligible consumption of charcoal in PCN but No charcoal is used in the updated data provided by PO and also in the monitoring report charcoal consumption is not mentioned.*

Project Owner's response

Date: 16/12/2023

1. *AAC Block test reports from nationally approved laboratory for the year 2013 to 2021 has been provided.*
2. *Electricity consumption invoice for the year 2013 to 2021 has been provided. Calibration certificates for energy meter is not available.*
3. *Weigh bridge calibration certificates for the said period is not available. Revised raw material and fuel supplier list is provided.*
4. *Earlier we had sent the combined data of Navsari and Jhajjar plant by mistake and PCN was prepared according to the combined data, however in the Navsari plant we have not used charcoal as fuel therefore it is not considered in the preparation of monitoring report and emission reduction calculation sheet.*

Documentation provided by Project owner

1. *Third party laboratory test reports of AAC block for the year 2013 to 2021*
2. *Electricity consumption invoices for the year 2013 to 2021*
3. *Revised raw material and fuel supplier list*

UCR Project Verifier assessment

Date: 24/01/2024

1. *AAC block test reports for the year 2013 to 2021 is checked and found to be appropriate as per applied methodology.*
2. *Since energy meter calibration report is not available for the entire monitoring period, as per table 11 of IS 14697:1999- considering maximum percentage error limits (i.e. 0.5%) for 0.5S class energy meter, 0.5 % is added in total energy consumption and emission reduction calculation is revised accordingly.*
3. *As the Weighbridge calibration report for the years 2013,2014, 2015, 2018,2019 and six months of 2020 is not available with PO, considering maximum weighbridge error mentioned in the latest calibration report provided by PO i.e. 0.01% (10 kg error for 100-ton capacity weighbridge) is added to total leakage emission. The revised raw material and fuel supplier list is checked and found to be conforming with the requirements.*
4. *As per the onsite visit and document verification of purchase invoices of fuel, it was verified that there was no consumption of charcoal in the Navsari plant, hence clarification provided by PO is accepted to the verification, and CL 02 is closed.*

CL ID	03	Section no.: 3.3.1.1	Deviation from methodology and/or methodological tool	Date: 05/03/2024
Description of CL				
<i>As per the UCR CoU standard/2/, small scale type III projects and clause 11 of the applied methodology/4/, kindly clarify the emission reductions increasing more than 60 kt/year in the vintage year 2015, 2017, 2018, 2019 and 2021.</i>				
Project Owner's response				Date: 07/03/2024
<i>We have requested the UCR program to exceed the limit of 60 kt/year and it has been approved by the UCR program.</i>				
Documentation provided by Project Owner				
<i>UCR Methodology deviation notification for Removal of 60 kt CO₂ annual CoU cap for UNFCCC CDM AMS-III.Z. Small-scale methodology users. And Monitoring report Ver.3.0</i>				
UCR Project Verifier assessment				Date: 08/03/2024
<i>The verification team checked the notification provided by UCR and monitoring report version 3.0 and found it conforming, hence CL 03 stands closed.</i>				

CL ID	04	Section no.: 3.3.5	Estimation of emission reductions or net anthropogenic removal	Date: 23/09/2023
Description of CL				
<i>Kindly clarify</i>				
<i>PO has provided two sets of data for raw material & Fuel consumption; new data is inconsistent with the data mentioned in PCN version 1.0, dated 30/06/2023</i>				
Project Owner's response				Date: 16/12/2023
<i>Earlier we had sent raw material and fuel consumption combined data of our Navsari plant and Jhajjar plant and PCN was prepared accordingly, but later we rectified the mistake and sent the data of Navsari plant only.</i>				
Documentation provided by Project owner				
-				
UCR Project Verifier assessment				Date: 24/01/2024
<i>The justification provided by the PO for the variation in raw material and fuel consumption is verified through document review and onsite assessment, and found to be appropriate, hence CL 04 is closed.</i>				

CL ID	05	Section no.: 3.9	Others (Double counting of credits)	Date: 23/09/2023
Description of CL				
<i>An agreement stating that the project activity will not cause double counting as per clause 1.8, Universal Carbon Registry Program Manual (Ver 4.0) August 2022 is missing.</i>				
Project Owner's response				Date: 16/12/2023
<i>Double accounting agreement is provided.</i>				
Documentation provided by Project owner				
<i>Double accounting agreement.</i>				
UCR Project Verifier assessment				Date: 24/01/2024
<i>Double accounting agreement is checked and found to be appropriate, therefore CL 05 is closed</i>				

Table 2. CARs from this Project Verification

CAR ID	01	Section no.: 3.3.4	Baseline scenario	Date: 23/09/2023
Description of CAR				
<i>In the section 1.2 of MR/9/ mentioned baseline scenario is inconsistent with the applied CDM methodology AMS-III.Z ver. 06.0 as per UCR CoU Standard ver.6.0 – page no. 6.</i>				
Project Owner’s response				Date: 16/12/2023
<i>Baseline scenario is updated as per the applied CDM methodology AMS-III.Z ver. 06.0</i>				
Documentation provided by Project Owner				
<i>MR Version 2.0</i>				
UCR Project Verifier assessment				Date: 24/01/2024
The updated baseline scenario is now consistent with the applied methodology; hence CAR 01 is closed.				

CAR ID	02	Section no.: 3.3.5	Estimation of emission reduction or net anthropogenic removal	Date: 23/09/2023
Description of CAR				
<ol style="list-style-type: none"> <i>In the section C.10 of Monitoring report, Emission factor of the diesel mentioned is not matching with Cell no. A13 – Sheet “PE” of emission reduction calculation sheet as per UCR CoU Standard ver.6.0-page no. 4.</i> <i>Source and Emission factor of Furnace oil is not mentioned in monitoring plan of PCN ver.1.0 as per UCR CoU Standard ver.6.0-page no. 4.</i> <i>In the section 5.2 of PCN ver.1.0 fuel consumption of Charcoal and pet coke is not in line with emission reduction calculation sheet submitted for verification as per UCR CoU Standard ver.6.0-page no. 4</i> <i>In the section B.8 of PCN Ver.1.0 and C.10 of MR ver.1.0; Source of Emission factor of POP & Gypsum is not provided as per UCR CoU Standard ver.6.0-page no. 4.</i> 				
Project Owner’s response				Date: 16/12/2023
<ol style="list-style-type: none"> <i>Emission factor of Diesel is corrected in MR ver.2.0, PCN ver.2.0 and made consistent with Emission reduction calculation sheet.</i> <i>Source link for the emission factor of Furnace oil is updated in monitoring plan of PCN.</i> <i>PCN ver.1.0 was prepared according to the data of Navsari and Jhajjar Plant, but MR and Emission reduction calculation sheet is prepared according to the Navsari plant only.</i> <i>Source of Emission factor of POP & Gypsum is updated in the monitoring MR and PCN.</i> 				

Documentation provided by Project Owner	
<i>MR Version 2.0</i>	
UCR Project Verifier assessment	Date: 24/01/2024
<ol style="list-style-type: none"> 1. Emission factor of diesel is checked in MR ver. 2.0 and verified against the source provided in monitoring plan and found to be conforming. 2. Source link of emission factor of furnace oil is checked in PCN ver.2.0 and found appropriate. 3. Navsari plant data is verified with MR and Emission reduction sheet and found to conforming. 4. Source of emission factor for POP & Gypsum is checked in MR Ver.2.0 and PCN Ver. 2.0 and found to be accurate. Hence, CAR 02 stands closed. 	

CAR ID	03	Section no.: 3.3.6	Monitoring report	Date: 23/09/2023
Description of CAR				
<i>In the section C.5.1 of MR ver.1.0, leakage emission related to transportation and consumption of raw material is not consistent with the emission reduction calculation sheet as per UCR CoU Standard ver.6.0-page no. 4.</i>				
Project Owner's response				Date: 16/12/2023
<i>Section C.5.1 of MR has been made consistent with the emission reduction calculation sheet.</i>				
Documentation provided by Project Owner				
<i>MR Version 2.0</i>				
UCR Project Verifier assessment				Date: 24/01/2024
Revised version of MR is checked and found to be consistent with emission reduction calculation sheet.				

Table 3. FARs from this Project Verification

FAR ID	--	Section no.	Date:
Description of FAR			
Project Owner's response			Date:
Documentation provided by Project Owner			