

PROJECT REVIEW REPORT

This document tracks the findings raised in Verra’s review of the project specified below. The VVB must address the findings before the project request can be considered by Verra for approval. The document will be made publicly available on the Verra Registry. Confidential information may be provided as separate attachments.

Review Type	Registration
Project ID	2649
Project Name	Housing Decarbonization in the United Kingdom
Program(s)	VCS
Verification Period	N/A
Project Proponent	Arctica Partners
Methodology	VM0008: Methodology for Decarbonisation of Single and Multi-Family Buildings, Version 1.1.
VVB	Earthood Services Private Limited
Assessment Criteria	VCS Version 4.2
Date of First Issue	29 July 2022
Review Conclusion	14 December 2022
Date of Final Issue	19 January 2023

FINDINGS			
#	Description	Response	Status
1	<p>The existing scenario before project implementation and the estimated annual ERRs are missing in the summary description of the project.</p> <p>Issue:</p> <p>The scenario existing before project implementation and the estimated annual ERRs have not been included in the summary description of the project under Section 1.1 of the project description.</p> <p>Action item:</p> <p>The VVB must ensure that the project proponent has included the scenario existing before project implementation and the estimated annual ERRs in the summary description of the project under Section 1.1 of the project description.</p> <p>Program rule:</p> <p>VCS Project Description Template v4.1, Section 1.1</p>	<p>Round1:</p> <p>VVB Response:</p> <p>The PP has amended section 1.1 of the PDD (V10.1) to revise the description of the existing scenario before project implementation which is continuation of less energy efficient household buildings in the UK . The PP has also included the estimated annual ERRs in section 1.1 and made additional amendments to align section 1.1 of the PDD with the descriptions used in the VCS Methodology.</p> <p>Verra Review:</p> <p>The existing scenario before project implementation and the estimated annual ERRs have been included in the summary description of the project under Section 1.1 of the project description. This finding is now closed, and no further response is required.</p>	Open
2	<p>The scope of the GHG gases included in the project is not defined.</p> <p>Issue:</p> <p>Section 1.3 of the VCS project description does not include the scope of GHG gases included in the project.</p> <p>Action item:</p> <p>The VVB must ensure that the project proponent has included the scope of GHG gases included in the project Section 1.3 of the project description.</p> <p>Program rule:</p>	<p>Round1:</p> <p>VVB Response: The PP has amended section 1.3 to include the correct reference to 'GHG gases' to 'carbon dioxide (CO2).</p> <p>Verra Review:</p> <p>The scope of GHG gases is included in the project Section 1.3 of the project description. This finding is now closed, and no further response is required.</p>	Closed

<i>VCS Standard v4.3, Section 2.1.1</i>		
<p>3</p> <p>The telephone contact details of the project proponent and other entity are missing</p> <p>Issue:</p> <p>The telephone contact details of the project proponent and the other entity have not been included under Section 1.5 and Section 1.6 of the project description.</p> <p>Action item:</p> <p>The VVB must ensure that Section 1.5 and Section 1.6 of the project description include the telephone contact details of the project proponent and the other entity, respectively.</p> <p>Program rule:</p> <p><i>VCS Standard v4.3, Section 3.4.1</i></p>	<p>Round1:</p> <p>VWB Response:</p> <p>The PP has amended sections 1.5 and 1.6 to include the telephone contact details.</p> <p>Verra Review:</p> <p>The telephone contact details of the project proponent and the other entity have been included in the project description. This finding is now closed, and no further response is required.</p>	<p>Closed</p>
<p>4</p> <p>Clarity required on the achieved net GHG ERRs</p> <p>Issue:</p> <p>The ERRs for 2022 and 2029 vintages are the same as the other years, however, this cannot be since they are not full years.</p> <p>Action item:</p> <p>The VVB must ensure that the project proponent updates the emission reductions of years 2022 and 2029.</p> <p>Program rule:</p> <p><i>VCS Standard v4.2, Section 3.4.1</i></p>	<p>Round1:</p> <p>VWB Response:</p> <p>The PP has amended section 1.10 to reflect the project start date being mid-year.</p> <p>Verra Review:</p> <p>This has been updated. This finding is now closed, and no further response is required.</p>	<p>Closed</p>
<p>5</p> <p>The mechanism for ensuring on-going communication with stakeholders is not included</p> <p>Issue:</p>	<p>Round1:</p> <p>VWB Response:</p> <p>The PP has amended section 2.2 to replace the high-level reference to further consultation with a detailed description of the mechanisms for ongoing communication with stakeholders</p>	<p>Closed</p>

<p>A mechanism for on-going communication with stakeholder has not been included under Section 2.2 of the project description.</p> <p>Action required:</p> <ol style="list-style-type: none"> 1. The VVB must ensure that the project proponent has included a mechanism for on-going communication with stakeholder under Section 2.2 of the project description. 2. The VVB must assess the appropriateness of the mechanism for on-going communication with stakeholder in the validation report. <p>Program rule:</p> <p>VCS Standard v4.3, Section 3.17.4</p>	<p>and the steps taken to ensure that stakeholders can raise concerns about potential negative impacts during project implementation.</p> <p>The validation report section 3.2.2 and CL ID09 has been amended to include the assessment of the appropriateness of the mechanism for on-going communication with stakeholders.</p> <p>Verra Review:</p> <p>A mechanism for on-going communication with stakeholder has been included under Section 2.2 of the project description. The VVB has assessed the appropriateness of the mechanism for on-going communication with stakeholder in the validation report. This finding is now closed, and no further response is required.</p>
<p>6 Evidence for the project start date is not sufficient</p> <p>Issue:</p> <p>At the time of validation, the project had not started and the VVB has confirmed the project start date based on the future projections. However, since this is a futuristic date, the VVB cannot confirm with certainty when the project will start operating.</p> <p>Action required:</p> <p>The VVB must raise a FAR in the verification report to check and confirm the project start date at the first verification.</p> <p>Program rule:</p> <p>VCS Standard v4.3, Section 3.7.1</p>	<p>Round1: closed</p> <p>VVB Response:</p> <p>VVB team would like to clarify that section 3.1 (Project start date) of the validation report, clearly mentions that it a green field project and PP <i>'intended'</i> to complete the energy efficiency measures by 01/07/2022. However, a FAR (06) has been raised to confirm the start date of the project during the first verification.</p> <p>Verra Review:</p> <p>FAR (06) has been raised to confirm the start date of the project during the first verification. This finding is now closed, and no further response is required.</p>
<p>7 Methodology applicability conditions have been mixed with project eligibility requirements</p> <p>Issue:</p>	<p>Round1: Closed</p> <p>VVB Response: The PP has amended section 1.4 (Eligibility Criteria) of the PDD to include only the eligibility criteria applicable to additional individual dwellings as called for by the</p>

The project proponent has mixed the methodology applicability conditions with the project specific eligibility criteria. Some applicability conditions have been left out and

Action required:

The VVB must ensure that the project proponent has demonstrated how the project meets all the methodology applicability and has clearly separated the applicability conditions from the project specific eligibility.

Program rule:

VCS Project Description Template, Section 3.2

VCS Standard v 4.3 for regulations applicable to grouped projects.

The PP has separately amended section 3.2 (Applicability of Methodology) of the PDD to include the applicability criteria applicable to all project activity as called for by the VM0008 Methodology. All applicability conditions have been included. Where a condition is not applicable to this project that is now clearly noted in the project description rather than the prior approach of excluding the condition.

The project meets all the methodology applicability and has clearly separated the applicability conditions from the project specific eligibility.

Verra Review:

The project description have been updated and now, the methodology applicability conditions have been separated from project specific eligibility criteria. This finding is now closed, and no further response is required.

8 Lack of evidence to demonstrate regulatory surplus in the host country:

Issue:

The project description and the validation report do not provide information, including evidence on the regulatory surplus in the host country.

Action item

1. The VVB must ensure that the project proponent has included details of the regulatory surplus in the updated project description.
2. The VVB must provide evidence and documents used to cross check the regulatory surplus in the revised validation report.

Program rule:

VCS Standard v4.3,

Round1:

closed

VVB Response: The PP has amended Section 1.13 of the PDD to replace the high-level reference to regulatory surplus with a detailed description of the regulatory surplus and evidence used to cross check the regulatory surplus.

The validation report has also been amended (Section 3.1) to include the assessment of the evidence of the regulatory surplus in the host country.

Verra Review

Details of the regulatory surplus have been included in Section 1.13 of in the updated project description. The VVB has included ann assessment of the evidence of the regulatory surplus in the host country under Section 3.3 of the VR. This finding is now closed, and no further response is required.

<p>9</p>	<p>Assessment of leakage due to disposal of replaced equipment not sufficient</p> <p>Issue:</p> <p>The VVB has not assessed how project activity instances will meet the inclusion criterion on controlling leakage by proper disposal of replaced boilers. For this criterion, the VVB refers to “criteria 11” which is not related to disposal of replaced boiler but relates to the capacity of replacement appliance or replacement component.</p> <p>Action required:</p> <ol style="list-style-type: none"> 1. The VVB must provide an assessment on how the project activity instances will meet the inclusion criterion on controlling leakage by proper disposal of replaced boilers. 2. The VVB must ensure that the project proponent has accounted according to the Table 2 of the applied methodology VM0008 <p>Program rule:</p> <p>VCS Standard v4.3, Section 3.5.16</p>	<p>Round1:</p> <p>VVB Response: The PP has amended Section 1.18 and Section 4.3 of the PDD to replace the high-level reference to regulatory requirements for the disposal of boilers with a detailed description of the regulatory requirements for the disposal of boilers and evidence used to cross check proper disposal. The PP has amended Table 2 to include emissions from the improper disposal of boilers.</p> <p>VVB has further strengthen the assessment of how the project activity instances will meet the inclusion criterion on controlling leakage by proper disposal of replaced boilers is included in the Validation Report at Section 3.3.6 (Quantification of GHG Emission Reductions and Removals) and Section 3.3.8.5 (Monitoring Data Collection: Leakage). The leakage emissions are identified in line with the applied methodology. CAR (O4) which was raised to check the implementation and also been revised to include the safe disposal of boilers. If any boiler is not disposed according to applicable laws these will be accounted for by their exclusion from the total emissions reduction.</p> <p>Verra Review:</p> <p>Section 1.18 and Section 4.3 of the project description have been updated with a detailed description of the disposal of boilers and evidence used to cross check proper disposal. The PP has amended Table 2 to include emissions from the improper disposal of boilers. Further, The VVB has now included an assessment of how the project activity instances will meet the inclusion criterion on controlling leakage by proper disposal of replaced boilers under Section 3.3.6 (Quantification of GHG Emission Reductions and Removals) and Section 3.3.8.5 (Monitoring Data Collection: Leakage). This finding is now closed, and no further response is required.</p>	<p>Closed</p>
----------	---	--	---------------

10	<p>The units for fossil fuel consumption are not defined</p> <p>Issue:</p> <p>The project proponent does not define the energy units for fossil fuel consumption in Table 4, Table 5, Table 6 and Table 7 of the VCS project description.</p> <p>Action required:</p> <p>The VVB must ensure that the project proponent has defined the energy units for the mean fossil fuel consumption in the various tables of the VCS project description.</p> <p>Program rule:</p> <p><i>Not applicable</i></p>	<p>Round1:</p> <p>VVB Response: The PP has defined the energy units for the mean fossil fuel consumption in the various tables of the VCS project description.</p> <p>Verra Review:</p> <p>The energy units for the mean fossil fuel consumption have been included in the various tables of the VCS project description. This finding is now closed, and no further response is required.</p>	closed
11	<p>The conservative provisions for defining the control group is not followed</p> <p>Issue:</p> <p>The project proponent does not follow the conservativeness provisions prescribed by the methodology for defining the control group.</p> <p>Action required:</p> <p>The VVB must ensure that the project proponent has followed the conservativeness provisions prescribed by the methodology for defining the control group.</p> <p>Program rule:</p> <p>VM0008, Section 4.6</p>	<p>Round1:</p> <p>VVB Response: The PP has amended the description of the control group approach in Section 4.4 of the revised PDD to apply the conservativeness provisions prescribed in Section 4.6 of the methodology for defining the control group.</p> <p>Verra Review:</p> <p>The description of the control group approach in Section 4.4 of the revised PDD now applies the conservativeness provisions prescribed in Section 4.6 of the methodology for defining the control group. This finding is now closed, and no further response is required.</p>	Closed
12	<p>The description of monitored parameters is not aligned with the methodology</p> <p>Issue:</p>	<p>Round1:</p> <p>VVB Response: The PP has amended the monitoring parameters under Section 5.2 and in Section 4.4 of the PDD to align with the methodology.</p>	closed

Under Section 5.2 of the VCS project description, the description of the monitored parameters do not align with the methodology prescriptions. For instance.

- a) The units for monitored parameters $EL_{pre,i}$ and $EL_{post,i}$ are not aligned with the methodology. The project description uses kWh/yr while the methodology defines BTU/m².
- b) The monitoring frequency of parameter $F_{p,y,i,j}$ is not as prescribed by the methodology. Further, under 'source of data' it is sampled. Whereas under 'value applied' its value is determined individually.
- c) The monitoring frequency for the parameters 'Quality assurance sample group of fuel consumption within the Dwelling' and 'Quality assurance sample group of electricity consumption within the Dwelling' is not in line with the methodology. The unit for the parameter 'Quality assurance sample group of fuel consumption within the Dwelling' is also incorrect. Further, under 'source of data' it is sampled. Whereas under 'value applied' its value is determined individually. Consistency and adherence to the method is required.
- d) Parameter $E_{dem,i}$ should be expressed as $E_{dem,pre,i}$, as in the methodology
- e) The units for the parameter 'Fuel type j consumed in the year prior to project implementation for dwelling i (baseline consumption)' ($F_{b,i,j}$) should be mass/volume and not kWh/yr.
- f) Parameters $H_{load,pre,i}$ & $H_{load,post,i}$ do not align with the methodology
- g) For the parameter Number of fuel types (J), the source of data cannot be before project implementation, and is monitored yearly.
- h) For the parameter 'Number of dwellings included in the sample group (S)', shall be measured once annually in line with the methodology. The VVB is required to explain how this conforms with the methodology monitoring plan.
- i) The source of data, and monitoring frequency of the parameter Mean electricity consumed by sample group dwellings in Building Stock b in year y ($Elec_{SG,y,b}$) shall be revised and aligned with the methodology
- j) The source of data, and monitoring frequency of the parameter Mean electricity consumed by sample group dwellings in Building Stock b in year y ($Elec_{CG,y,b}$) shall be revised and aligned with the methodology
- k) For the parameter Mean fuel type j consumed by intervention group dwellings in Building Stock b in year y ($F_{SG,y,j,b}$), the description shall be revised to align with the methodology. The

Verra Review:

- a) Corrected
- b) Corrected
- c) Corrected
- d) Corrected
- e) Corrected
- f) Updated
- g) Corrected
- h) Corrected
- i) Corrected
- j) Corrected
- k) Corrected
- l) Corrected
- m) Corrected
- n) Corrected

This finding is now closed, and no further response is required.

source of data as per the meth has to be the individual dwellings (instances). The VVB shall clarify why data is sourced at a higher level and not directly. The fuel units are also incorrect

- l) For the parameter Mean fuel type j consumed by control group dwellings in Same Building Stock b in year y ($F_{CG,y,j,b}$), the description shall be revised to align with the methodology. The source of data as per the meth has to be the individual dwellings (instances). The VVB shall clarify why data is sourced at a higher level and not directly. The fuel units are also incorrect.
- m) For the parameter 'Number of fuel types (J)', the source of data cannot be 'Pre-retrofit energy assessment' as it is an annually monitored parameter.
- n) The parameter 'Number of dwellings included in the control group approach for the project year' shall be expressed as I_b in line with the applied meth.

Action item:

The VVB must ensure that the units, sources and monitoring frequencies of all monitored parameters are aligned with the methodology prescriptions defined under Section 9.2 of the methodology.

The VVB must include the list of monitored parameters as detailed in VCS project description

Program rule:

VM0008, Section 9.2, VCS Project Description Template v4.1, Section 5.2

13 The version of the validation report template is not consistent

Issue:

The first part of the header indicate that version 4.0 of the validation report template is being used while the last parts indicate version 4.1

Action item:

The VVB must ensure the version of the validation report template being used is consistent throughout the document.

Round1:

Closed

VVB Response: The header of the validation report has been updated to Version 4.1.

Verra Review:

This finding is now closed, and no further response is required.

<p>Program rule: VCS standard v4.3, Section 3.4.1</p>	
<p>14 Inconsistent number of CARs described</p> <p>Issue:</p> <p>The summary and Section 2.5 of the validation report describe 1 CAR and 18 CLs; however, the appendix describes 19 CLs and not CARs.</p> <p>Action item:</p> <p>The VVB must ensure that the number of CARs described are consistent in all sections of the validation report.</p> <p>Program rule: VCS standard v4.3, Section 3.4.1</p>	<p>Round1: Closed</p> <p>VVB Response: There is 1 CAR and 18 CLs recorded in the Appendix. Finding 10 was listed in the Appendix as a CAR, the appendix is now revised and the same is mentioned as CAR 01</p> <p>Verra Review:</p> <p>This finding is now closed, and no further response is required.</p>
<p>15 Justification that the site visit procedure meets the reasonable level of assurance insufficient.</p> <p>Issue:</p> <p>The VVB indicates that they carried out site visit on 22 & 23/03/2022 & 28/03/2022 including only stakeholder consultation. This does not include checking of the applied technologies and the details of project activity locations visited.</p> <p>Action item:</p> <p>The VVB must justify how conducting a site visit with only a stakeholder consultation is sufficient to meet a reasonable level of assurance required for at validation.</p> <p>Program rule:</p>	<p>Round1: closed</p> <p>VVB Response: The validation report states: “A physical site visit was conducted for the project activity on 22 & 23/03/2022 & 28/03/2022 (only stakeholder consultation)”.</p> <p>The reference to “only stakeholder consultation” does not refer to all 3 days but only to the site visit on 28/03/2022. The site visit on 22 & 23/03/2022 included an audit of the:</p> <ul style="list-style-type: none"> - Project design - Project ownership - Project start date - Project scale and estimated GHG reductions - Project activity - Project location, boundary and conditions prior to project initiation - Regulatory surplus - Sustainable development contributions

VCS standard v4.3, Section 4.1.2; VCS Project Description Template v4.1, Section 2.4

- Grouped project eligibility criteria
- Applicability of methodology and application criteria
- Local stakeholder impact
- Baseline scenario
- Additionality
- Leakage
- Approaches to calculating GHG emission reductions
- Commissioning date of the initial PAIs
- Generation, recording, and monitoring of data, including review of the applied technologies.

Technical details about decarbonisation measures implemented as part of the project activity were also checked. Project location which is entire UK was also checked during the site visit. The two stakeholders who are the housing trust and the project implementor were interviewed and their documentation reviewed. It is important to note that 28 PAIs selected as part of project implementation in future are owned by Ravan Housing one of the stakeholders who was interviewed. VVB not only undertook the stakeholders consultation but conducted the physical site visit to the client office, project location and the area of household locations. The validation report has been updated to reflect the activities conducted on site.

Pursuant to Rule 4.1.4 of VCS Standard 4.3, validation may occur before the first verification in which case the site visit is focused on the independent assessment of the project to determine whether the project complies with the VCS Program rules. In the assessment team’s opinion, the project does meet all requirements of the VCS standard and the applied methodology.

Verra Review:

The VVB has justified how conducting a site visit with only a stakeholder consultation is sufficient to meet a reasonable level of assurance required for at validation. This finding is now closed, and no further response is required.

16 **There is inconsistent use of the VCS standard versions in the validation report**

Issue:

The validation report mentions different versions of the VCS standard in different sections.

Action required:

The VVB must ensure that the VCS standard version used and mentioned in the various section of the validation report is consistent.

Program rule:

Not applicable

Round1:

VVB Response: The references to the VCS Standard have been updated to Version 4.3.

Verra Review:

This finding is now closed, and no further response is required.

Closed