# Voluntary Carbon Standard Methodology Assessment Report for:

# IFM-LtPF Methodology - Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)

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| Issuance of Final Report after consolidation with Second Assessor | 24 February 2011 |
| Issuance of Draft Report after consolidation with Second Assessor | 21 February 2011 |
| Date Final, Internally Reviewed, Report Issued: | 15 October 2010 |
| Date Final Report Issued: | 23 September 2010 |
| Date Draft Final Report Issued: | 10 September 2010 |
| Audit dates: | 08 September – 10 September 2010 |
| Assessment team: | Adam Gibbon, Jared Nunery |
| Approved by: | Jeffrey Hayward |
| Assessment standard: | *Voluntary Carbon Standard, 2007.1 (November 18, 2008)* <br><br> *Voluntary Carbon Standard, Guidance for Agriculture, Forestry, and Other Land Use, 2007.1 (November 18, 2008)* <br><br> *Voluntary Carbon Standard, Tool for AFOLU Methodological Issues, (November 18, 2008)* |
| **Assessment of methodology Version BSTP-3.1.2:271210** | |
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# 1 INTRODUCTION

## 1.1 Objective

The purpose of this report is to document conformance of the IFM-LtPF Methodology - Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management) with the requirements of the Voluntary Carbon Standard (VCS). This assessment was requested by Carbon Planet Limited, hereafter referred to as the "Project Proponent". The report represents the first assessment of the VCS double approval process.

This report contains Rainforest Alliance's assessment conclusion for the following version of the methodology: **BSTP-3.1.2:271210.** This is the same version for which Bureau Veritas approved in their assessment report dated 08 February 2011.

The report presents the findings of qualified Rainforest Alliance auditors and technical experts in methodologies for greenhouse gas emissions and removals who have assessed the methodology under review according to the applicable standard(s) and protocols of the Voluntary Carbon Standard. Section 2 below provides the assessment conclusions. Rainforest Alliance carbon evaluation reports will be available to the public only upon finalization and after agreement of both the proponents and the Rainforest Alliance. Particular material in the report identified as confidential by the proponent will be excluded from any publicly available reports.

Dispute resolution: If Rainforest Alliance clients encounter organizations or individuals having concerns or comments about Rainforest Alliance / SmartWood and our services, these parties are strongly encouraged to contact the SmartWood program headquarters directly. Formal complaints or concerns should be sent in writing to SmartWood, and may simultaneously been sent to the Voluntary Carbon Standard Association. For more information on complaints and appeals, please visit: http://www.rainforest-alliance.org/forestry.cfm?id=dispute_resolution.

History of Assessments

The Rainforest Alliance report dated 3rd November 2009 is presented as an appendix to this report. It contains the findings and corrective action requests (CARs) issued against the first three versions of the methodology. The corrective action requests that were open in the 3rd November 2009 report have been carried forward into this report. The methodology version, BSTP-3:101209 (dated 01 December 2009) that was presented to Rainforest Alliance for review was developed to meet the corrective action requests issued against the previous version of the methodology in the report dated 3rd November 2009. The findings and subsequent corrective action requests were raised in the audit report dated 19 February 2010. Rainforest Alliance conducted a fifth assessment of an improved forest management methodology from Carbon Planet (BSTP-3.1:100610 - written to address the corrective action requests raised in the audit report dated 19 February 2010) in a report dated 13 August 2010. Rainforest Alliance conducted a sixth assessment of the methodologydated 15 October 2010. This assessment came to the conclusion that the methodology was in conformance with the VCS standard 2007.1. The Methodology was subsequently assessed by Bureau Veritas, who requested a number of changes. Carbon Planet made the requested changes and Bureau Veritas approved the methodology (BSTP-3.1.2:271210) in a report dated 08 February 2011. Rainforest Alliance then assessed the changes made and concluded that the methodology was still in conformance with the standard in this report dated 21 February 2011.

## 1.2 Rainforest Alliance Fulfilment of Criteria to Perform Assessment

The Rainforest Alliance's SmartWood program was founded in 1989 to certify forestry practices conforming to Forest Stewardship Council (FSC) standards, and now focuses on providing a variety of forest auditing services. The Rainforest Alliance's SmartWood program is a member of the Climate, Community, and Biodiversity Alliance (CCBA) and approved verifier to CCB standards, an accredited verifier with the Chicago Climate Exchange (CCX), a verifier with the Plan Vivo (PV) and CarbonFix standards, and an accredited validator/verifier with the Voluntary Carbon Standard (VCS) and Climate Action Reserve.

With specific reference to Section 4.7.2 of the 'VCS Program Normative Document - Double Approval Process[1]', Rainforest Alliance meets the following criteria to provide an assessment of a Non ARR Methodology element:

1) Eligible under the VCS Program to perform validation for sectoral scope 14 (AFOLU): Rainforest Alliance has received accreditation from the American National Standards Institute (ANSI) to ISO 14065:2007, the international standard for greenhouse gas validation and verification bodies and a necessary requirement for approval to the Voluntary Carbon Standard(VCS).
2) Jeffrey Hayward is a VCS approved AFOLU expert in the fields of REDD and IFM, and was involved in the assessment[2].

## 1.3 Scope and Criteria

**Scope:**

This assessment of a new methodology evaluated whether or not the methodology was prepared following the guidance provided by the VCS Program, including Section 5 (project level requirements) and Section 6 (methodologies) of the VCS 2007.1 document.

The scope of this assessment included, as a minimum:

1.  <u>Eligibility criteria</u>. Assessment of whether the methodology's eligibility criteria were appropriate and adequate.

2.  <u>Project boundary</u>: Assessment of whether an appropriate and adequate approach was provided for the definition of the project's physical boundary and sources and types of gases included.

3.  <u>Baseline approach</u>: Assessment of whether the approach for determining the project baseline was appropriate and adequate.

4.  <u>Additionality</u>: Assessment of whether the approach/tools for determining whether the project was additional are appropriate and adequate.

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[1] http://www.v-c-s.org/docs/VCS%20Program%20Normative%20Document%20-%20Double%20Approval%20Process.pdf
[2] http://www.v-c-s.org/docs/VCS_Approved_AFOLU_experts.pdf

5. <u>Emissions</u>: Assessment of whether an appropriate and adequate approach was provided for calculating baseline emissions, project emissions and emission reductions.

6. <u>Leakage</u>: Assessment of whether the approach for calculating leakage was appropriate and adequate.

7. <u>Monitoring</u>: Assessment of whether the monitoring approach was appropriate and adequate.

8. <u>Data and parameters</u>: Assessment of whether monitored and not monitored data and parameters used in emissions calculations were appropriate and adequate.

9. <u>Adherence to the project-level principles of the VCS Program:</u> Assessment of whether the methodology adhered to the project-level principles of the VCS Program.

10. <u>Special case of rejection from other GHG programs</u>: Assessment in the special case that the methodology was rejected by another GHG program.

11. <u>Public Review:</u> Under the double approval process, new methodologies must be posted for public comment prior to the first assessment. Any comments made during this process are reported here and addressed.

The methodology was assessed against these eleven criteria. The first nine were referred to specifically by the VCS in section 5.1.2 of the VCS Program Normative Document: Double Approval Process as the minimum to review. The special case of rejection from other GHG programs is also a VCS requirement. A 'Public Review' section follows that documents findings, and the Methodology Developer's response from the public comment period which all VCS methodologies are subject to. Each of the criteria is followed by more specific points that pertain to Section 5 and/or Section 6 of the VCS 2007.1 standards and where appropriate the relevant section of the VCS Tool for AFOLU Methodological Issues.

The following project level principles, based upon ISO 14064-2:2006, from Section 5 of the VCS 2007.1, were the principles considered in evaluating the methodology against the checklist criteria:

i. <u>General</u>: The application of principles was fundamental to ensure that GHG-related information was a true and fair account. The principles were the basis for, and were used to guide the application of, requirements in this part of ISO 14064:2006 and the VCS 2007.1.

ii. <u>Relevance</u>: Select the GHG sources, GHG sinks, GHG reservoirs, data and methodologies appropriate to the needs of the intended user.

iii. <u>Completeness</u>: Include all relevant GHG emissions and removals. Include all relevant information to support criteria and procedures.

iv. <u>Consistency</u>: Enable meaningful comparisons in GHG-related information.

v. <u>Accuracy</u>: Reduce bias and uncertainties as far as is practical.

vi.    Transparency: Disclose sufficient and appropriate GHG-related information to allow intended users to make decisions with reasonable confidence; and

vii.   Conservativeness: Use conservative assumptions, values and procedures to ensure that GHG emission reductions or removal enhancements are not overestimated

**Standard criteria**:

This assessment followed in line with the guidance provided within the following standards:

- *Voluntary Carbon Standard, 2007.1 (November 18, 2008)*

- *Voluntary Carbon Standard, Guidance for Agriculture, Forestry, and Other Land Use, 2007.1 (November 18, 2008)*

- *Voluntary Carbon Standard, Tool for AFOLU Methodological Issues, (November 18, 2008)*

- *VCS Program Normative Document: Double Approval Process Version 1.0 (June 18, 2009)*

## 1.4    Methodology Description

Copied from the executive summary of the methodology:

The Methodology provides a procedure to determine the net anthropogenic greenhouse gas (GHG) emission reductions associated with an Improved Forest Management - Logged to Protected Forest (IFM-LtPF) activity which prevents the degradation of a forest through the cessation of a baseline activity of selective logging.

The Methodology is written to be compliant with the Voluntary Carbon Standard (VCS 2008a; 2008b; 2008c) and follows the structure and procedural steps as defined in the VCS Tool for AFOLU Methodological Issues. The Methodology specifically applies to previously logged or intact tropical forests, where the baseline activity can be clearly demonstrated and substantiated to be selective logging.

The key components of the Methodology are:
   (1)   Applicability criteria and decision pathway for applying this Methodology based on the availability of data sources
   (2)   Justification for a baseline activity of selective logging, additionality and definition of project boundary
   (3)   Accounting for carbon changes of the baseline activity of selective logging

(4) Accounting for emissions due to implementation of the baseline and IFM-LtPF project activity

(5) Leakage assessment and management

(6) Uncertainty analysis

(7) Monitoring methodology.

The application of this Methodology is based on the justification that selective logging is the most likely baseline activity above all other possible land use alternatives.

The Methodology calculates the net anthropogenic emission reductions by firstly estimating emissions due to forest degradation and the implementation of the baseline activity, selective logging. From this, GHG emissions associated with the implementation of the IFM-LtPF project activity, plus any emissions due to leakage of the baseline activity occurring outside the Project Area (as a result of the IFM-LtPF project activity), are subtracted from the baseline emissions to provide the net anthropogenic emission reductions of the IFM-LtPF project.

The baseline scenario, selective logging, as defined in the Methodology, involves the annual removal of merchantable trees with a minimum diameter at breast height as defined by the relevant authority in the host country. According to the data available, the Methodology provides guidance on determining the quantity and type of wood product that would be removed, as well as the nature of its fate as a result of the baseline scenario. In summary, emissions due to carbon lost from forest degradation from selective logging are attributable to (i) emissions from the oxidation of both short-term and long-term harvested wood products that are removed from the Project Area, (ii) emissions from the decay of the trimmings and branches, as well as any residual stand damage accumulating in the dead wood pool, and (iii) emissions from carbon that is forfeited due to forest growth that did not occur (foregone) as a result of the selective logging. These emissions are offset by (iv) regrowth in already harvested areas following logging.

The monitoring methodology provides guidance for the monitoring of the parameters employed to calculate carbon changes due to forest degradation, as well as emissions due to implementation of project and baseline activities. Following the implementation of the monitoring methodology, the results are applied to the above-mentioned accounting components (3) to (6) to revise the net anthropogenic GHG emission reductions for the subsequent reporting period.

The application of the Methodology is intended to not only mitigate GHGs, but to trigger a long term sustainable shift in the status of the forest in the covered region, hence aiding in the conservation of biodiversity. In addition, local communities will have new avenues for revenues that replace and exceed revenues to be derived from the removal of their forests.

## 2 ASSESSMENT CONCLUSIONS

Conclusions from 21 February 2011 Reconciliation with the Second Assessors Report

'BSTP-3.1.2:271210' of the methodology was approved by Bureau Veritas. The table below summarises the issues raised by Bureau Veritas and the changes made by Carbon Planet. Rainforest Alliance assessed the changes made and found that the methodology still to be in conformance with the VCS standard.

| Bureau Veritas Corrective Action Request Topic | Change made to Methodology |
|---|---|
| CAR 01: Provision of geospatial data for project area | Minor text addition to Table1-1 |
| CAR 02: Use of VCS tool for demonstration of additionality | Minor text addition to Footnote 3, p15 |
| CAR 03: Exclusion of peatlands. | Minor text addition to Table 1-1. |
| CAR 04: Leakage for commercially harvested fuelwood | Text addition to section 5.1 and 5.2. |
| CAR 05: Suggestion to expand the scope to include plantations | No change was required, no change was made. |
| CAR 06: Clarity of descriptions when multiple parcels of project area exist. | Minor text addition to Section 2.2.1.1 |
| CAR 07: Procedure for the monitoring of emissions from natural disturbance. | Minor text additions to Section 4, Section 4.4. Reference addition to section 4.4. |
| CAR 08: Emissions associated with aerial surveillance and ground patrolling. | Clarification text added in Section 4.2.1, 4.2.2, 4.3.1, and 4.3.2. |
| CAR 09: Definition of illegal harvesting | Definition addition to section 4.5. |

| CAR 10: elaboration of methods for gathering data on illegal harvesting. | Suggested methods added to section 4.5.1. |
| CAR 11: Separation of steps related to determining land eligibility. | Minor text addition to Section 2.2.1.1 |
| CAR 12: Common practice volume to compare with intensification. | A new requirement to use comparable data rather than data from the leakage area if there is less than 5 years data available. Respective change made to parameter in equation 5-2. |
| CAR 13: Provision of information regarding the potential areas for leakage. | Text addition to section 5.2 |

Conclusions from 15 October 2010 Assessment

Version BSTP-3.1.1:030910 of the methodology has undergone a number of small changes in response to the CARs that were open in the 05 July 2010 report. As a result, all the CARs and Observations were closed and Rainforest Alliance approves version BSTP-3.1.1:030910 of the Carbon Planet IFM Methodology – Estimating Greenhouse Gas Emissions from Planned Degradation.

Conclusions from 05 July 2010 Assessment

Version BSTP-3.1:100610 of the methodology represents a significant improvement from the previous in terms of meeting the VCS standard, being internally consistent and scientifically sound. Of the 34 CARs that were open at the start of the assessment, 31 were closed. The persistent issues are related to the calculation method for harvested wood products, the treatment of uncertainty and regrowth following natural disturbance. It was also necessary for the auditors to raise 1 new CAR. CAR (52/10) was raised because there were a number of relatively small, but significant issues that must be changed in order for the methodology to be accepted. Whilst these issues range in their content, raising a separate CAR for each one would make the report overly complicated. Rather, each issue is flagged via reference to the CAR in the findings section of the report. It should also be noted that 13 out of the 14 Observations that were made in the last report have been addressed.

Audit Team Recommendation

Based on an evaluation of the Methodology Developer's new methodology, according to the defined assessment scope and criteria, which assessed the credibility of all data, rationale, assumptions, justifications and documentation provided by the methodology developer, the Rainforest Alliance new methodology assessment team finds that the proponent has:

☒    Demonstrated unqualified compliance/conformance with the standard

☐    Not demonstrated unqualified compliance/conformance with the standard.

## 2.1    Corrective Action Requests

*Note*: A non-conformance is defined in this report as a deficiency, discrepancy or misrepresentation that in all probability materially affects the methodology.  Corrective Action Request (CAR) language uses "shall" to suggest its necessity and tries not to be prescriptive in terms of mechanisms to mitigate the CAR.  Each CAR is brief and refers to a more detailed finding in the appendices.

Please see the report from Rainforest Alliance dated 3rd November 2009 for previous CARs that have been closed.

| CAR#: | **CAR 02/09** |
|---|---|
| Checklist reference: | Applicability/Eligibility Criteria |
| CAR description: | Carbon Planet shall provide applicability criteria such that the methodology's use is restricted to projects and areas for which it is suitable. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now has strengthened applicability criteria (table1-1) and a clearer delineation on what prior and anticipated land-use types are allowed to constitute the project area.<br><br>The methodology has defined exclusion zones/areas that communities can use for harvesting activities and which do not form part of the project area.  However, please see **CAR 30/09**, and the findings presented under criteria 2.2. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 12/09** |
|---|---|
| Checklist reference: | 5 Emissions |
| CAR description: | Carbon Planet shall conservatively account for harvesting and project related emissions in the baseline and project scenario respectively. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now accounts for the possibility of harvesting in the project scenario.  However, it characterises all such harvesting as being, 'illegal'.  It may not be the case that any harvesting in the project scenario is illegal, so the wording does not currently reflect the fact that legal harvesting could occur in the project scenario and would need top be accounted for. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 13/09** |
|---|---|
| Checklist reference: | 5.1 Emissions, 5.5 Emissions, 5.7 Emissions, 5.21 Emissions |

| CAR description: | Carbon Planet shall ensure that there is a clear, correct and logical flow of data (including units of measurement) between Equations presented in the methodology. These Equations should culminate in the number of VCU's generated by the project at any given monitoring event. |
|---|---|
| Timeline for conformance: | N/A |
| Evidence to close CAR (19 February 2010): | The methodology now has a logical flow of data and calculations. However, inconsistencies within the equations create confusion.<br><br>There were also isolated examples of equations not calculating exactly what was meant to be calculated, most likely related to inconsistent labeling and descriptions (Eqn 3-40, 3-47, 3-57).<br><br>In addition, a spreadsheet presented to demonstrate the operation of Eqn 3-41 to 3-45 was found not to work if the HWP input changed between years. However, equation presented would work in this scenario. |
| Evidence to close CAR (13 August 2010): | The methodology now allows a logical flow of data. There is an ongoing issue relating to HWP calculation, but this is covered by **CAR 42/10**.<br><br>The equations listed above have been corrected, however, equation 3-33 still has the same issue, this is covered by **CAR 43/10**. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 18/09** |
|---|---|
| Checklist reference: | 6.1 Leakage |
| CAR description: | Carbon Planet shall present a workable and defended methodology for calculating leakage that is correctly documented. |
| Timeline for conformance: | N/A |
| Evidence to close CAR (19 February 2010): | The revised methodology has a new approach to leakage calculations. The leakage section was still found to be unclear. The leakage section does not consider that someone other than the project developer could have been the baseline deforestation agent. There is still a concern that the leakage method presented would not be able to detect and correctly attribute leakage.<br><br>Rainforest Alliance has contacted the VCS to seek clarification on which entities require monitoring for activity shifting leakage, in particular the case where the project developer is an NGO with no logging interests, but the previous owner, and baseline logging agent is known. Clarification has also been sought regarding the extent to which a methodology needs to provide calculation steps if the VCS default market leakage table is used and what number the market leakage percentage has to be applied to. |
| Evidence to close CAR (13 August 2010): | The assessment and management of leakage is done in section 5 (page 74). The methodology considers both activity shifting leakage |

| | and market leakage. |
| --- | --- |
| | The methodology now defines activity shifting leakage as those emissions due to the project proponent logging outside the project area above their average historical intensity (5.2.1) or from new areas (5.2.2). |
| | The new methods were found to provide adequate ways of detecting and quantifying leakage. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 19/09** |
| --- | --- |
| Checklist reference: | 7.3 Monitoring |
| CAR description: | Carbon Planet shall provide a complete monitoring plan that is to a Tier 3 level of accuracy. The way in which results feedback into the carbon accounting calculations shall be transparent and documented in full. |
| Timeline for conformance: | N/A |
| Evidence to close CAR (19 February 2010): | The revised version of the methodology has an improved monitoring section. The link between monitoring results and the equations to calculate emissions reductions was relatively clear.<br><br>However, in section 8.2.1.2.4 the monitoring required to calculate the carbon 'lost' due to growth increment foregone is documented. The table only includes the re-calculation of values and does not mention the measurement of trees in the PSPs. The PSPs are mentioned as a data source in the text above, but no calculation steps are shown to link the data gathered in the PSPs to the equations for growth increment foregone. The text also assumes that the results of monitoring would always yield a positive growth value. This may not always be the case in any one monitoring period if a large tree dies or falls. |
| Evidence to close CAR (13 August 2010): | While addressing **OBS 23/10**, Section 8.2.1.2.4 (in BSTP-3) has been removed. Thus **CAR 19/09** is no longer relevant. However, Step 1 of Section 3.3.4 provides a detailed procedure to account for the carbon in the growth foregone due to selective logging. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 21/09** |
| --- | --- |
| Checklist reference: | vii Monitoring |
| CAR description: | Carbon Planet shall explain the data gathered from each data source referenced, and demonstrate consistency with the inputs required for the calculations. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The table which used to contain all the parameters has been removed. There is still not a consistent method for providing |

guidance to project developers on selecting data for parameters or choosing suitable equations. This CAR has been closed and replaced with **CAR 38/10 NEW**, **CAR 40/10 NEW** and **CAR 43/10 NEW**, which describe corrective action more appropriate to this version of the methodology.

| CAR status: | **CLOSED** |
|---|---|

| CAR#: | **CAR 22/09** |
|---|---|
| Checklist reference: | xi General |
| CAR description: | Carbon Planet shall present the methodology complete and free from internal errors. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology can now be considered complete in that it has all the required sections. It is not completely free from internal errors, but the issues that do remain have been raised in new more specific CARs during this review. Therefore, this CAR is considered to be replaced by the new CARs. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 24/09** |
|---|---|
| Checklist reference: | 2.2 Project Boundary |
| CAR description: | Carbon Planet shall define the project boundaries in accordance with VCS guidelines. |
| Timeline for conformance: | N/A |
| Evidence to close CAR (19 February 2010): | The project boundary has been more clearly and consistently defined in section 2 of the methodology. The project boundaries are defined in a way consistent with the VCS standard. However, there are still ambiguities around the definition of the spatial boundaries (see **CAR 30/09**). There is also inadequate definition of 'merchantable' trees and species, which is used as a sub-division of the above-ground tree pool. |
| Evidence to close CAR (13 August 2010): | Section 1.1 of the methodology now includes a definition of merchantable trees that is related to host country definitions. Both terms "Commercial Trees" and "Commercial Timber Species" have been removed in the Methodology. Both terms "merchantable trees" and "merchantable logs" are now defined in Appendix A. To conclude, clarity has now been provided about what constitutes merchantable trees. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 26/09** |
|---|---|
| Checklist reference: | 11 Public Review: |

| CAR description: | Carbon Planet shall demonstrate how it has taken due account of all public comments. |
|---|---|
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Carbon Planet has now addressed all public comments. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 27/09** |
|---|---|
| Checklist reference: | Baseline approach |
| CAR description: | Carbon Planet shall provide the framework for a quantifiable assessment of the threat of future degradation. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now includes section 2.1, which is a framework for documenting the threat of degradation as a part of a baseline justification exercise. This CAR is therefore closed. However, there were issues with the steps presented in section 2.1 and **CAR 35/10 NEW** was raised to address these. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 28/09** |
|---|---|
| Checklist reference: | Baseline approach |
| CAR description: | Carbon planet shall present clearly the options and approaches for calculating conservative baselines and ensure that all other sections of the methodology are consistent with the approaches presented. |
| Timeline for conformance: | Prior to approval |
| Evidence to close CAR: | The methodology now has a three pathway approach as shown in figure 3-1. The baseline approach is now well tied to the monitoring section. Therefore, this CAR has been closed. However, there were some specific issues raised which are covered in new CARs. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 29/09** |
|---|---|
| Checklist reference: | Baseline approach |
| CAR description: | Carbon Planet shall ensure all terminology used is globally applicable and adequately defined. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now contains language that is universal. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 30/09** |
|---|---|
| Checklist reference: | 2.2 Project Boundary |
| CAR description: | Carbon planet shall clearly define the spatial project boundaries. |
| Timeline for conformance: | N/A |
| Evidence to close CAR (19 February 2010): | The definitions used to define the project boundaries were still found to be overly complicated and ambiguous. |
| Evidence to close CAR (13 August 2010): | The changes made to simplify the geographical boundary definitions are sufficient to close **CAR 30/10**. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 31/09** |
|---|---|
| Checklist reference: | v Emissions |
| CAR description: | Carbon Planet shall provide full guidance for carrying out field work necessary to derive parameters for use in equations. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Sufficient guidelines have been provided for gathering data in the field. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 32/09** |
|---|---|
| Checklist reference: | Emissions |
| CAR description: | Carbon Planet shall adequately account for emissions from illegal harvesting if they occur in the project scenario. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now has equations to account for illegal harvesting in section 4.5. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 33/09** |
|---|---|
| Checklist reference: | Data and parameters |
| CAR description: | Carbon Planet shall explain the use of strata clearly in the methodology and ensure that the equations consider differences in strata where appropriate. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Strata are now defined and used consistently. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 34/09** |
|---|---|
| Checklist reference: | 5.20 Emissions |
| CAR description: | Carbon Planet shall provide best practice guidance for allometric equation selection and use. |
| Timeline for conformance: | N/A |
| Evidence to close CAR (19 February 2010): | More guidance has been provided around the selection of allometric equations. However this approach does not include testing the suitability of equations. Well established guidelines for allometric equation use in methodologies exists in CDM methodologies but has not been reproduced here. |
| Evidence to close CAR (13 August 2010): | Guidance for validating the inventory data in the existing FIR is provided in Section 3.2.1.1 in order to assess the accuracy of the FIR data and also to reduce uncertainty. Guidance for validating or deriving the wood density, allometric equations (volume and biomass) and BCEFS have been presented in the BSTP-3.1 in Section 7.2.4. This was found to be an improvement; however, the approach for validating BCEFs was not found to be scientifically sound.  After a discussion with CP, it was agreed that since no common validation method for BCEFs existed, and the CDM methodologies do also not include BCEF validation, it was acceptable for the methodology to remove this section.

In addition, this Methodology also provides guidance for selecting the appropriate literature or default value wherever they are presented in the calculation flow. |
| CAR status: | **CLOSED** |


| CAR#: | **CAR 35/10** |
|---|---|
| Checklist reference: | 3.2 Baseline Approach |
| CAR description: | Carbon Planet shall include a clear, logical step-wise approach to select the most likely baseline scenario. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | A new two step process for selecting the most likely baseline scenario has been introduced.  The procedure to identify the baseline scenario as selective logging for VCS IFM-LtPF project activities has been adapted from Steps 1 and 2 of the "Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities" (CDM-EB, 2007a, pp. 2-7).  The previous issues raised in **CAR 35/10** have been addressed by these changes and the CAR is now closed. |
| CAR status: | **CLOSED** |


| CAR#: | **CAR 36/10** |
|---|---|
| Checklist reference: | 3.3 Baseline Approach |

| CAR description: | Carbon Planet shall include steps in the methodology to ensure that any harvest plans used are an accurate and conservative reflection of the most likely harvesting scenario in the absence of the project and that FIRs are accurate. |
|---|---|
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now includes steps to validate the use of FIRs (section 3.2.1, p25), so the concern over their legitimacy no longer exists. There is no longer a need to correct for the use of historical data. This was sufficient to close **CAR 36/10**.

However, it was noted by Rainforest Alliance that the validation of an existing FIR was as labor intensive as the 'measured data pathway'. CP acknowledged that there was an error on p25, and that the validation of FIRs was supposed to use preliminary plot data, not permanent data as shown in step 4. This error was rectified in the 030910 version of the methodology. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 37/10** |
|---|---|
| Checklist reference: | 4.1 Additionality |
| CAR description: | Carbon Planet shall use the words, "should" and "shall" consistently to reflect optional and mandatory components of the methodology respectively. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The language has been changed to reflect the mandatory nature of an additionality test. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 38/10** |
|---|---|
| Checklist reference: | 5.1 Emissions, 5.7 Emissions, 5.17 Emissions, 8.1 Data and Parameters |
| CAR description: | Carbon Planet shall provide clear guidance how to select, for each parameter, factor or equation that requires literature to be consulted, a value/equation that is appropriate and conservative, as well as providing a default value in the case that a project area or regional specific value/equation could not be found. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now provides suitable guidance for the selection of literature data. See all references to **CAR 38/10** in the findings section of this report for details of specific examples. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 39/10** |
|---|---|
| Checklist reference: | 5.1 Emissions, 5.7 Emissions |
| CAR description: | Carbon Planet shall adjust old Forest Inventory Reports in a manner that is conservative, mathematically correct and takes into consideration both growth and losses to the merchantable timber pool. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now requires validation of all FIRs, and applies growth foregone information ex-post. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 40/10** |
|---|---|
| Checklist reference: | 5.1 Emissions, 5.7 Emissions |
| CAR description: | Carbon Planet shall use methods to calculate total above-ground biomass in a way that is accurate and consistent with how the equations are designed to be used. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology now uses $BCEF_j$ correctly in section 3.2.1.2.2 (p29). Equations 3-10 to 3-12 now correctly sum the results of allometric equations used on individual trees. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 41/10** |
|---|---|
| Checklist reference: | 5.1 Emissions, 5.7 Emissions |
| CAR description: | Carbon Planet shall calculate the above ground biomass of trees with a DBH greater than 10 cm in a way that uses the most accurate available data and can be applied in all cases. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Emissions from infrastructure clearance are no longer quantified by the methodology. This is conservative. In section 3.2 methods for quantifying the growing stock are presented. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 42/10** |
|---|---|
| Checklist reference: | 5.1 Emissions, 5.7 Emissions |
| CAR description: | Carbon Planet shall define time clearly in all equations and parameter descriptions so it is clear when 'annual emissions', 'cumulative emissions', etc., are being considered. |
| Timeline for conformance: | N/A |

| | |
|---|---|
| Evidence to close CAR: | The equations and parameters associated with the emissions from the HWP pool have been changed to improve clarification of the time flow through equations (sections 3.3.2 and 3.3.3). The auditors still found it very difficult to understand how the equations were supposed to be implemented. After discussion between RA and CP the example spreadsheet provided by CP to demonstrate how the equations were found to work was found not to function correctly if the HWP inputs vary year by year (which they could). This same issue was highlighted in the previous audit report. CP has presented a solution that, if executed correctly will resolve this issue. It will also be necessary to provide example tables to aid developers, given the complexity of the approach taken. **CAR 42/10** remains open. |
| | In the revised methodology, the approach to calculating emissions from HWP (3-29 a and b) and deadwood (Eqn 3-22a and b) has now been revised. In each case, two equations are presented – a simple case when there is a constant input into the pool, and a more complex equation for when the input varies year on year. Appendix D provides an example of how to perform the calculation for deadwood. This was necessary due to the complexity of the equations. The units have also been corrected such that they are consistent throughout the methodology. |
| CAR status: | **CLOSED** |

| | |
|---|---|
| CAR#: | **CAR 43/10** |
| Checklist reference: | 5.1 Emissions, 5.7 Emissions |
| CAR description: | Carbon Planet shall present all parameters (including subscripts), in a logical and clear manner and describe all parameters in a consistent and clear manner. They shall also be referred to consistently in the methodology text. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The specific issues raised in the previous report related to parameters and parameter descriptions have been addressed by Carbon Planet. |
| | Two small parameter issues persist, which are covered by **CAR 52/10**. |
| CAR status: | **CLOSED** |

| | |
|---|---|
| CAR#: | **CAR 44/10** |
| Checklist reference: | 5.1 Emissions, 5.7 Emissions, 8.1 and 8.2 Data and Parameters |
| CAR description: | Carbon Planet shall, where references are provided for data sources, be explicit in the location of the data to allow data to be checked by the audit team and retrieved by project developers. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Where references are provided for data sources, Carbon Planet is |

| | |
|---|---|
| | now explicit in the location of these, to permit checking by the audit team and retrieval by the Project Proponent.  For all data sources recommended in the guidance for parameter selection, the following reference format has been taken: Reference/author(s) name, year of publication, volume (if applicable), chapter (if applicable), section (if applicable), table/figure number (if applicable) and page number(s). |
| CAR status: | **CLOSED** |

| | |
|---|---|
| CAR#: | **CAR 45/10** |
| Checklist reference: | 5.15 Emissions |
| CAR description: | Carbon Planet shall quote the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination correctly or simply reference it.<br><br>Rainforest Alliance has sought clarification from the VCS on what number the VCS buffer percentage should be applied to. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | In section 7.2.5 the VCS tool is simply referenced, which eliminates all previous issues.  The approach to using the buffer percentage is in line with the clarifications received by the VCS. |
| CAR status: | **CLOSED** |

| | |
|---|---|
| CAR#: | **CAR 46/10** |
| Checklist reference: | 5.20 Emissions |
| CAR description: | Carbon Planet shall provide clear guidance on how the outputs from the equations in section 8.4 must be used. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The uncertainty section has been changed significantly since the previous version and now is in a stand alone section, section 6.  The outcomes of section 6 are not used elsewhere in the methodology.  The aim of calculating uncertainty is only so that areas of high uncertainty can be identified and be reduced as much as possible. It was not found to be acceptable that projects with any level of uncertainty would be able to issue VCUs.  As such, it is necessary that a method is used to limit the allowed uncertainty, or credits issued at a given uncertainty level.<br><br>Section 6.6 has been added to the revised methodology.  This section makes a deduction for uncertainty based on a threshold of 10% allowable uncertainty.  This was found to be acceptable. |
| CAR status: | **CLOSED** |

| | |
|---|---|
| CAR#: | **CAR 47/10** |
| Checklist reference: | 2.2 Project Boundary |

| CAR description: | Carbon Planet shall include a clear list of what mapping is required to be presented in the PDD and be available for auditing in digital GIS format. |
|---|---|
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The Methodology is now clear that it is for use on one discrete parcel of land, but that it can be used on multiple parcels, but that the emissions reductions and non-permanence must be calculated separately. Mapping requirements are now found in 2.2.1.1.1 and 2.2.1.2. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 48 /10** |
|---|---|
| Checklist reference: | 2.2 Project Boundary |
| CAR description: | Carbon Planet shall account for losses of carbon stocks in the project area in a manner that is consistent with the VCS standard.<br><br>*Note: The VCS has been contacted to provide clarity on what exactly they require with respect to avoidable and unavoidable emissions, changes to project area size and the carbon stocks for which the project developer is responsible for. The results of this enquiry will be forwarded to Carbon Planet.* |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Following clarification from VCS, it was agreed that the project area must remain fixed for the crediting period (unless a project was to be re-validated, essentially re-started). This has been reflected in the methodology, with the removal of steps to reduce the project area. The VCS also confirmed that projects are responsible for all losses to carbon stocks within the project boundary. In response, the methodology now accounts for natural disturbances (and their impact on the whole growing stock) and illegal logging (see Eqn 4.1, and then sections 4.4 and 4.5). The approach taken is therefore in line with VCS requirements.<br><br>However, equation 4-20 was found to lead to a double deduction of regrowth from the projects GHG benefits. In addition, it was highlighted by the auditors that if regrowth post natural disaster is conservatively ignored, this leaves projects with no way to recoup losses following a natural disturbance which could be significant. Carbon Planet has suggested a new approach that involves allowing regrowth to be monitored and corrects equation 4-20 such that it no longer double counts.<br><br>In the revised methodology, Equation 4-20 and the natural disturbance related equations that flow into it have been modified such that regrowth after natural disturbances can be accounted for. Double deductions no longer occur |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 49/10** |
|---|---|
| Checklist reference: | 5.1 emission |
| CAR description: | Carbon Planet shall calculate the most likely annual harvest rate using the most accurate data available, ensuring that it is possible to verify the credibility of the estimate. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Section 3.2.3.1 to use existing harvesting plan for predicting the annual volume of wood harvest under the baseline scenario. In addition, it is stated that a commonly employed and sustainable method of harvesting must be used to generate harvest area data if plans do not already exist. These plans would need to be validated during project validation. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 50/10** |
|---|---|
| Checklist reference: | 5.1 emissions |
| CAR description: | Carbon Planet shall be conservative when considering regrowth after logging and clearance for infrastructure. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | The methodology no longer considers the emissions associated with the clearance for infrastructure, so it is not necessary for regrowth to be calculated there. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 51/10** |
|---|---|
| Checklist reference: | 5.3 emissions |
| CAR description: | Carbon Planet shall provide thorough steps on how to quantify the carbon stocks lost in the project area in the project scenario. |
| Timeline for conformance: | N/A |
| Evidence to close CAR: | Carbon Planet has revised both the methods for calculating illegal harvesting in the Methodology BSTP 3.1 (see Section 4.5.1. and 4.5.2) and provides explicit and logical steps for the calculation of illegal harvesting. The procedure for estimating carbon losses due to illegal harvesting using satellite data (Section 4.5.2) has been simplified by using average growing stock per hectare in each stratum. Thus the Steps 3 and 4 of Section 4.5.2 (in the Methodology BSTP 3) for estimating the volume to trees to 10 cm DBH are no longer applied and are removed in the Methodology BSTP 3.1. |
| CAR status: | **CLOSED** |

| CAR#: | **CAR 52/10** |
|---|---|
| Checklist reference: | Project Boundary 2.1, Baseline Approach 3.2, Emissions 5.1, 5.11, 5.12, Quality and Uncertainty 5.20, Leakage 6.1, Data and Parameters 8.2, Adherence with project-level principals of the VCS 9.1. |
| CAR description: | Carbon Planet shall correct the issues in the methodology that are flagged by reference to **CAR 52/10** in this report in order to bring the report into complete conformance with VCS 2007.1. The issues are listed here: |
| | The definition of deadwood includes coarse roots down to 2mm in size. However, belowground deadwood (e.g. coarse roots) is not included in dead wood calculations. Carbon Planet agrees the definition needs changing. |
| | In section 2.1 it is stated that selective logging must be shown to be the most conservative baseline scenario. It was agreed with Carbon Planet that this was not correct; rather, selective logging must be the most *likely.* |
| | The methodology now uses BCEFs correctly in section 3.2.1.2.2 (p29); (relevant to **CAR 40/10**). However, BCEFs (and BEFs) may vary depending upon strata, and at present the parameter BCEF (and BEF) does not take this into account. For example see Eqn 4-22 (p 73) where one BCEF is multiplied by volume data from multiple strata. |
| | A slight mis-quote of Brown *et al.*, (2005) was found that requires correction. The definition of branch trim factor was still found to be ambiguous, given the inclusion of coarse woody debris in the definition, but not in the derivation of the number. |
| | Equation 3-40, now 3-26 was correct; however, the parameter description did not limit the calculation to only sawn wood and was hence ambiguous. This has now been corrected. However, a similar problem persists with the parameter description for Eqn 3-33 where the parameter is not limited to stHWPs. |
| | After being guided through the section by CP, RA have concluded that whilst all steps to execute the setting up of permanent sample plots are present in the methodology, two weaknesses in cross referencing exist, which makes it hard to follow. Firstly, neither 3.3.4 nor 3.2.1.3.2 makes reference to section 7.1.2 (how to set up PSPs). Secondly in 7.1.2, point (ii) is unspecific as to the exact uses of the PSPs. If these links were clear there would be no issue. Small clarification needed. |
| | Project Registration and VCU Issuance Process Version v1.2 explains that ex-post calculation of emissions reductions must be presented in a monitoring report and be subject to verification. Thus, the text on p102, that mentions emissions reductions being presented in the VCS PD, and being subject to validation and verification is not correct. Only ex-ante estimates and the project design are subject to validation. |

Equation 1-3 calculates the VCUs to be issued pre-buffer deduction. Whilst the equations are logical, the language does not exactly align with that of the VCS, which could cause potential confusion. The VCS talks about "carbon credits" being issued, and some of these being retained in the buffer account (VCS Guidance for AFOLU Projects p18). VCUs are the tradable credits issued. As such it is incorrect for Equation 1-3 to calculate the VCUs that are issued, when some of these are actually only credits that will need to be retained in the buffer.

Guidance for validating the inventory data in the existing FIR is provided in Section 3.2.1.1 in order to assess the accuracy of the FIR data and also to reduce uncertainty. Guidance for validating or deriving the wood density, allometric equations (volume and biomass) and BCEFS have been presented in the BSTP-3.1 in Section 7.2.4. This was found to be an improvement; however, the approach for validating BCEFs was not found to be scientifically sound. After a discussion with CP, it was agreed that since no common validation method for BCEFs existed, and the CDM methodologies do also not include BCEF validation, it was acceptable for the methodology to remove this section.

The use of the word, "recommends" (using its common interpretation) creates an internal inconsistency in the document (p97), which would lead to ambiguity as to the necessity of project proponents to carry out validations of parameters. CP agreed that this required a small change to the wording.

Section 5.2.2 which detects shifted logging operations states that new harvesting operations starting "directly" after the start of the project were to be counted as leakage. When questioned on this, CP acknowledged this was a mistake and that, in fact, any new land logged during the crediting period must be counted as leakage. A typo was found in the parameter table beneath Eqn 5-9, "intensification" was not supposed to be referred to.

However, a sample of table 7-1's parameters was checked and errors were found. The table incorrectly states that $BCEF_s$ is used in equations 4-21, 5-8 and 5-9. The table fails to state that BEF is used in equation 4-21. $V_{PP\_Branch\_trim,t}$ was not found to be used in 5-10 (or anywhere in the methodology).

On page 30, section 3.2.1.3 it is stated that: "If the FIR or an equivalent document provides field inventory data on the diameter at breast height (DBH) and tree height (H) of the growing stock at the sample plot level s…". Figure 3-1 shows that species data is also required, but this is not mentioned here.

The parameter fv in the table is missing the right parentheses, I the parameter table beneath Eqn 3-10.

It was noted that the parameter definition for B(branch_trim) contains the term "coarse woody debris" (eqn 7-4 and Appendix A).

| | |
|---|---|
| | Step 1 of Section 7.2.4.4 only includes the measurement of large branches, and does not include a sample of coarse woody debris, leading to an internal inconsistency.

The VCS document, 'Project Registration and VCU Issuance Process Version v1.2' explains that ex-post calculation of emissions reductions must be presented in a monitoring report and be subject to verification. The text on p102 of the methodology, that mentions emissions reductions being presented in the VCS PD, and being subject to validation and verification is not correct. Only ex-ante estimates and the project design are subject to validation.

Equation 1-3 calculates the VCUs to be issued pre-buffer deduction. Whilst the equations are logical, the language does not exactly align with that of the VCS, which could cause potential confusion. The VCS talks about "carbon credits" being issued, and some of these being retained in the buffer account (VCS Guidance for AFOLU Projects p18). VCUs are the tradable credits issued. As such it is incorrect for Equation 1-3 to calculate the VCUs that are issued, when some of these are actually only credits that will need to be retained in the buffer. |
| Evidence to close CAR: | There were a total of 15 individual issues covered by CAR 52/10. Each of these has been addressed in the revised methodology. Please see appendix B for a description of each change that led to the CAR being closed. |
| CAR status: | **CLOSED** |

### 2.1.1 Observations

Observations are not mandatory, therefore the open observations from the last review of the methodology have not specifically been re-assessed. It was evident from a document provided by Carbon Planet that efforts had been undertaken to address observations. New observations are reported below. It is recommended that Carbon Planet consider these observations, because observations, if they are not addressed could lead to CARs in the next version if the issues become more serious after a revision.

| **OBS 10/10** | Checklist reference: 2.1 Project Boundary |
|---|---|
| Observation: Carbon Planet should clarify the treatment and references to sources, sinks and reservoirs of GHGs. | |

| **OBS 11/10** | Checklist reference: 4.1 Additionality |
|---|---|
| Observation: Carbon Planet should move the additionality test towards the front of the methodology. | |

| **OBS 12/10** | Checklist reference: 5.1 Emissions |
|---|---|
| Observation: Carbon Planet should re-name the two paths currently called 'ex-ante' and 'ex-post'. | |

| **OBS 13 /10** | Checklist reference: 5.1 Emissions |
|---|---|

Observation: Carbon Planet should expand figure 3-1 to reflect the possibility of the product or non-product specific data driven pathways that exist.

| **OBS 14/10** | Checklist reference: 5.1 Emissions |
|---|---|

Observation: Carbon Planet should define branches and trimmings clearly, in a way that allows project developers to find suitable sources of data for the parameter $f_{branch\_trim.}$

| **OBS 15 /10** | Checklist reference: 5.1 Emissions |
|---|---|

Observation: Carbon Planet should make the detailed method to calculate a project area specific deadwood decay rate optional.

| **OBS 16/10** | Checklist reference: 5.1 Emissions |
|---|---|

Observation: In the 2nd paragraph of section 3.3.3, page 54 it is stated that if the ratio of logs going into the short term HWP pool vs. the long term pool is unknown then it is conservative to assume all logs go into the long term pool. This assumption is acceptable; however, leaving it until section 3.3.3 could lead to confusion.

| **OBS 17/10** | Checklist reference: 5.3 Emissions |
|---|---|

Observation: Carbon Planet should provide more guidance on how the boundaries of GHG emissions are drawn for the project activity related emissions.

| **OBS 18/10** | Checklist reference: 5.3 Emissions |
|---|---|

Observation: Carbon Planet should be clear on what constitutes making a conservative assumption or data selection.

| **OBS 19/10** | Checklist reference: 5.12 Emissions |
|---|---|

Observation: Carbon Planet should give clear instructions about the frequency with which the calculation steps need to be conducted in order to calculate the VCUs that should be issued if it has been more than one year since the previous verification.

| **OBS 20 /10** | Checklist reference: 5.18 Emissions |
|---|---|

Observation: Carbon Planet should make it clear when the method for applying GWPs to non-$CO_2$ GHG provided in Appendix C is supposed to be used.

| **OBS 21/10** | Checklist reference: 5.20 Emissions |
|---|---|

Observation: Carbon Planet should develop QA/QC procedures that reflect the broad range of data gathering methods that are used.

| **OBS 22/10** | Checklist reference: 7.3 Monitoring |
|---|---|

Observation: Carbon Planet should provide appropriate guidance on the frequency of monitoring the location of trees.

| **OBS 23/10** | Checklist reference: 7.3 Monitoring |
|---|---|

Observation: Carbon Planet should highlight those values which need to be re-measured, reviewed in the literature for clarity.

| **OBS 24/10** | Checklist reference: 8.1 Data and Parameters |
|---|---|

Observation: Carbon Planet should distinguish between cited material and reference material

## 2.2    Actions Taken by Company Prior to Report Finalization

This assessment represents the sixth review of an improved forest management methodology from Carbon Planet by Rainforest Alliance.  The methodology version, BSTP-3.1.1:030910, presented to Rainforest Alliance for assessment was developed to meet the corrective action requests issued against the previous version of the methodology in the report dated 05 July 2010.

# 3    AUDIT METHODOLOGY

## 3.1    Assessment Team

| Assessor(s) | Qualifications |
| --- | --- |
| **Adam Gibbon,** MSci.<br><br>Rainforest Alliance Technical Specialist, Climate Initiative | Adam has led the technical side of ten CCBA validations that are either completed or currently underway.  He has also led five VCS methodology assessments, one VCS validation and been involved in one CCX verification.<br><br>Adam has trained over 100 people in Spain, Bali, Rwanda and Vietnam in AFOLU project auditing and project development. Recipients of the training included Rainforest Alliance auditors, government officials, private consultants and NGO representatives.  Adam was lead author of recent Rainforest Alliance publication entitled, "Guidance on coffee carbon project development using the (CDM) simplified agroforestry methodology" as well as two scientific articles currently in press.<br><br>Adam has been appointed to the Plan Vivo Technical Advisory Panel, and awarded lead auditor status by the Climate Action Reserve, as well as becoming a qualified SmartWood Lead Auditor for Carbon.<br><br>Before joining Rainforest Alliance, Adam worked at Oxford University as a researcher. His research emphasized the potential of carbon markets to finance sustainable management of forest resources.  He led a team conducting a landscape scale assessment of carbon stocks in the Peruvian Andes' cloud forests and montane grasslands.<br><br>Adam earned a distinction on the Environmental Change and Management MSc. Program at Oxford University, winning prizes for his dissertation and overall performance.  He was awarded the Sir Walter Raleigh Scholarship at Oriel College, Oxford.  He graduated with a first class degree from Durham University, with a BSc in Natural Sciences, specializing in Geology, Chemistry & Geography. |

| | |
|---|---|
| **Jared Nunery**<br>Rainforest Alliance,<br>Smartwood Carbon<br>Technical Specialist | Jared has led the technical review of multiple validation assessments for the VCS and CCBA on three different continents. In addition, he has participated in two Improved Forest Management methodological reviews for the VCS. Before joining the Rainforest Alliance, Jared worked as a member of the Carbon Dynamics Lab at the University of Vermont, where he conducted research on the effects of forest management on carbon sequestration. Jared has published multiple scientific articles on the impacts of forest management practices on forest carbon dynamics. Jared has presented research and guest lectured on the topic of forest management and forest carbon dynamics at over a dozen scientific conferences and universities both within the USA and abroad.<br><br>Jared has a B.S. in Environmental Sciences from the University of Vermont and earned his M.Sc. in Forestry from the University of Vermont. Jared has extensive experience in forest stand dynamics, forest carbon dynamics, forest mensuration, GHG quantification, forest growth and yield modeling, and wildlife habitat conservation. In addition, Jared is a certified lead auditor with the Climate Action Reserve for Forest and Urban Forest projects. |
| **Jeff Hayward, MSci.**<br>**Rainforest Alliance**<br>**Manager, Climate**<br>**Initiative**<br><br>**(Senior Internal**<br>**Reviewer)**<br><br>**VCS AFOLU Expert in**<br>**REDD & IFM** | Jeff is based in Washington, DC, though his work has a worldwide focus, especially in Asia, Africa, Latin America, leading development of a cross-program initiative including carbon verification, best practices and standards for climate mitigation and adaptation, climate-oriented capacity building, and facilitation of carbon forestry and agroforestry projects. For nearly six years he managed the Rainforest Alliance forest certification programs in the Asia-Pacific region from Jakarta, Indonesia. In forest certification and carbon verification, he has conducted over 25 forest management assessments and/or audits and over 60 chain-of-custody assessments and/or audits. He has led forest certification awareness training courses in Malaysia, Indonesia, Japan, Fiji, and China. Prior to working for the Rainforest Alliance, he conducted silviculture and ecology research for the University of British Columbia's Alex Fraser Research Forest in Canada. In Oregon, he worked for the U.S. Bureau of Land Management in forest inventory and timber sale administration. For three years he was with the U.S. Peace Corps serving as a community forester in Guatemala in an agroforestry and conservation of natural resources program. Jeff earned an MSci in forestry, (Univ. of British Columbia, Canada); and a B.A. in Latin American development with a specialization on forestry (Univ. of Washington, USA). |

### 3.2    Methodology Assessment Process

The methodology assessment was conducted from Rainforest Alliance offices and those of the contracted consultants. The assessment consisted of a desk evaluation, along with phone calls and correspondence with the methodology developers.

### 3.3 Document Review

| Document Date | Title, Author(s), Version |
|---|---|
| 10 June 2010 | Improved Forest Management Methodology for Estimating Greenhouse Gas Reductions from Planned Degradation (Improved Forest Management, BSTP-3.1:100610 |
| 28 July2010 | Spreadsheet to demonstrate accounting of HWPs- 'Equation 3-31 example' |
| 28 July2010 | Carbon Planet Response to CARs, 'Address+to+RA+4th+Review+FINAL' |
| 03 Sept 2010 | Carbon Planet Methodology BSTP-3 1 1:030910 FINAL |

## Appendix A:  PROPONENT CONTACT AND DETAILS

## 1   Contacts

| | |
|---|---|
| **Methodology name:** | IFM-LtPF Methodology - Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management) |
| **Proponent:** | Carbon Planet Limited |
| Type of organization: | Company |
| Contact person, Title: | Sunil Sharma |
| Address: | Level 4, 170 North Terrace Adelaide , SA 5000, Australia |
| Tel/Fax/Email: | Phone: + 61 8 8237 9000 Direct:  + 61 8 8237 9033 Fax:  + 61 8 8232 9115 sunil.sharma@carbonplanet.com |
| **Billing contact:** | As Above |
| **Methodology developer:** | As Above |
| Type of organization: | As Above |
| Contact person, Title: | As Above |
| Address: | As Above |
| Tel/Fax/Email: | As Above |

# Appendix B: DETAILED ASSESSMENT FINDINGS TO THE STANDARDS

## 1 Eligibility criteria

The methodology shall contain eligibility criteria which are appropriate and adequate.

**1.1** The methodology shall be for a project type which falls within one or more of the eligible AFOLU project categories as Defined in the VCS Tool for AFOLU methodological issues (See: I. Scope and Applicability)

| Findings from 19 FEB 10 Assessment | The methodology describes a logged to protected forest project under the improved forest management project type (IFM – LtPF) and is compatible with the specific VCS guidelines relating to this project type. There are two subtypes of IFM-LtPF, "*a. protecting currently logged or degraded forests from further logging; and, b. protecting unlogged forests that would be logged in the absence of carbon finance.*" (VCS Tool for AFOLU Methodological Issues, page 3) This methodology covers either alternative, see 'condition of the forest' in table 1-1. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CAR or OBS raised | | |

**1.2** The methodology shall be compatible with VCS Tool for AFOLU methodological issues in the statement of eligibility conditions. Specifically;

   i.   "Documented evidence shall be provided in the VCS PD that no ARR or ALM project areas were cleared of native ecosystems within the ten years prior to the proposed VCS project start." (II. Step 1, paragraphs 6)

   ii.  "In the case of REDD projects, the boundary of the REDD activity shall be clearly delineated and defined and include only land qualifying as "forest" for a minimum of 10 years prior to the project start date." (II. Step 1, paragraphs 7)

| Findings from 19 FEB 10 Assessment | (i) Does not apply to this IFM project. (ii) Table 1-1 contains a condition that the forest must have been forest for 10 years prior to the project start date, although as this is an IFM methodology, this is not a mandatory requirement. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CAR or OBS raised | | |

**1.3** The methodology shall contain appropriate applicability conditions (e.g. project type, national and regional circumstances / policies, data and resource availability, environmental conditions, past land-use and land use changes, purpose of the activity and practices) that adequately constrain the use of the methodology such that any assumptions made or data inputs required later in the methodology are appropriate.

| | |
|---|---|
| Findings from 19 FEB 10 Assessment | The methodology's applicability criteria are described in section 1.2. The applicability conditions are appropriate for constraining the use of the methodology for suitable projects. |
| | The methodology no longer makes reference to indigenous groups and has adopted a new approach for defining, "exclusion areas" or "exclusion zones" in which pre-project activities can continue (see section 2.2.1.2 on page 17). |
| | In table 1-1, on page 8, the methodology states that, "forest land utilized for production by the community residing in the project boundary" is not to be included in the project area. Stakeholder consultations are mentioned on page 18 as one data source for defining these areas. |
| | The definition of the types of organisations that could be the baseline agent is now clear. |
| Findings from 13 AUG 10 Assessment | Same as previous findings. |
| Conformance | Yes ☒      No ☐      N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

## 2   **Project boundary:**

The methodology shall contain an appropriate and adequate approach for the definition of the project's physical boundary and sources and types of gases included.

**2.1** The methodology shall provide a methodological procedure for identifying and assessing GHG sources, sinks and reservoirs controlled, related to, or affected by the project. The methodology shall include guidance for the identification and assessment of GHG sources, sinks and reservoirs as being:

    i.     controlled by the Project Proponent:

    ii.    related to the GHG project; or

    iii.   affected by the GHG project. (VCS 2007.1, S6.2).

    iv.   if necessary, explain and apply additional criteria for identifying relevant baseline GHG sources, sinks and reservoirs; and compare the project's identified GHG sources, sinks and reservoirs with those identified in the baseline scenario. (VCS 2007.1, Section 6.2)

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| Findings from 19 FEB 10 Assessment | The methodology in section 2.3 describes the carbon pools (reservoirs) that are considered by the project. Section 2.4 of the methodology considers the sources and sinks of the six primary gases that contribute to climate change. |
| | Table 2-5 logically considers the inclusion of various sources of GHGs in the baseline. Some sources are listed that appear to have nothing to do with the |

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| | baseline scenario that the methodology uses. For example, livestock farming could not be used as a baseline scenario, so the reason for its inclusion in the table is not clear. (**OBS 10/10**)<br><br>Table 2-6 presents the sources of emissions in the project scenario and is consistent with the rest of the document. However, the footnote, "^^" could be improved. It is not correct to say, "None of the GHGs are sinks", since it is not the GHGs themselves that are sinks and sources. (**OBS 10/10**) |
| Findings from 13 AUG 10 Assessment | Carbon Planet has removed the following sources/sinks from Table 2-5 as they are not relevant to the baseline scenario: (i) livestock farming, (ii) storage and management of livestock manure, (iii) nitrogen-based fertiliser, (iv) storage and management of livestock manure.<br><br>In footnote "^^" the sentence "none of the GHG gases are sinks" has been changed to "there are no sinks for GHG emissions".<br><br>**OBS 10/10** has been addressed.<br><br>The definition of deadwood includes coarse roots down to 2mm in size. However, belowground deadwood (e.g. coarse roots) is not included in dead wood calculations. Carbon Planet agrees the definition needs changing. (Forms part of **CAR 52/10**) |
| Findings from 15 OCT 10 Assessment | The definition of deadwood has been changed in Appendix A and is now appropriate. (Note, this also addresses one part of **CAR 52/10**). |
| Conformance | Yes ☒       No ☐       N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

 

2.2 The methodology shall be compatible with the VCS Tool for AFOLU methodological issues, providing steps to define the project boundary in terms of:

    i. The geographic boundary within which the project will be implemented;

    ii. The project crediting period;

    iii. The sources and sinks, and associated types of GHGs (i.e., $CO_2$, $N_2O$, $CH_4$), the project will affect; and

    iv. The carbon pools that the project will consider, in accordance to the particular project type and Table 1, in step 3 of the VCS Tool for AFOLU Methodological Issues and ensuring they are appropriate in the context of the applicability conditions and the determination of project GHG emissions and baseline net GHG emissions.

(II. Step 2 Determine the Project Boundary and 3 Determine the Carbon Pools)

 

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| Findings from 19 FEB 10 Assessment | The project boundaries are described in section 2.2 of the methodology.<br><br>(i) The spatial boundaries are defined in section 2.2.1 of the methodology. The section defines, 'Forest Area', 'Project Area', 'Leakage Area(s)'. Appendix A (Definitions and Acronyms) also defines, 'Forest Area', 'Project Area' and 'Project Boundary'. |

The Forest Area definition was found to be acceptable. The approach to defining the Project Area appears logical, but the way the information is presented leads to some ambiguity. For example, in section 2.2.1.2, where Project Area is defined the first sentence reads, "The Project Area is the forest area within the defined geographical area, i.e. Project Boundary". This sentence uses four terms which require further definition to define the Project Area, which leads to some ambiguity. For example, if the definitions are followed to their sources, and Project Boundary is checked in Appendix A, another new (undefined) concept of geographical boundary is introduced. The definition of Project Area is thus unnecessarily complicated. (**CAR 30/09**)

The Project Area is defined as the Project Boundary minus 'exclusion zones' or 'exclusion areas'. The terms 'exclusion zones' and 'exclusion areas' are used interchangeably, which could cause confusion. (**CAR 30/09**)

Exclusion Zones/Areas are defined in 2.1.2.2 as being, "areas in which logging operations are prohibited for environmental, cultural or other reasons." The word 'prohibited' can be interpreted as meaning forbidden by some authority, but it is understood when reading further in the section that the term is mean to mean something more general. (**CAR 30/09**)

There is a lack of detail in how the exclusion zones/areas should be defined. The land use scenarios in tropical forests could be sensitive and contested, and the methodology is not explicit enough in how these areas are defined and what evidence needs to be provided to show that any piece of land meets the definition. (**CAR 30/09**)

The methodology is not clear on whether multiple discrete land parcels would be allowed under one project. Mapping of the various classifications of areas is mentioned in section 2.2.1.2. However it is not explicitly clear that all areas (including stratified areas) must be mapped digitally and provided in the PDD. (**CAR 47/10**)

To compliment the text descriptions Eqns 2-1, 2-2 and 2-3 define $A_{Project, t}$. All three equations define the same parameter, '$A_{Project, t}$' which was found to cause problems. Eqn 1-1 actually appears to define the initial project area or the project area at the time of the project start, whilst Eqn 2-1 includes reductions in project area that could occur at any time as the project progresses (reductions for illegal harvest or natural disaster). (**CAR 30/09**)

Eqn 2-2 leads to the possibility of the project area being reduced if illegal harvests or natural disturbances occur. This was not thought to be appropriate. It is the auditors interpretation of the standard that the project boundary should remain fixed. The equation, as currently presented would mean that if a drought led to some deaths of trees across the whole project area the project area would be reduced to zero. However, how losses of carbon stocks should be handled in the methodology was not found to be clearly presented in the VCS standard, therefore an email has been sent to clarify this matter. The developers are advised to wait for the response before designing a new solution. (**CAR 48/10**)

(ii) The project crediting period is clearly defined in section 2.2.2.1.

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| | (iii) See section 2.1 above.

(iv) The carbon pools considered by the project area described in section 2.3 of the methodology and conform to the VCS guidelines applicable to the project type.

The methodology, rather than considering the aboveground carbon in all trees, narrows the definition to, "merchantable trees" only. In section 2.3, 'merchantable trees' are not defined. Despite frequent references to merchantable logs and trees, a definition is not found until page 96 of the methodology (mentioned in some detail on page 35). Here, in section 8.1.2.3, it is stated that, "Merchantable trees are defined by a FIR or equivalent document (if available) or using commercial timber species product guide for the host country, or equivalent." "Commercial Trees" and "Commercial Timber Species" are two more terms that are frequently used, but there is not one place where all these definitions can be found, and their relationship understood. Only, "Merchantable Logs" are defined in appendix A. There is a concern that the commercial viability of any tree or log can vary over time (with market fluctuations), by site (cost of extraction and access to markets) and by form (some trees may meet diameter and species requirements but have a form that makes them not worth extracting) and that these aspects were not adequately handled in the definitions related to merchantable and commercial species/trees/logs. (**CAR 24/09**) |
| Findings from 13 AUG 10 Assessment | The project boundaries are described in section 2.2 of the methodology.

(i) The spatial boundaries are defined in section 2.2.1 of the methodology. The section defines, 'Project Area' and 'Leakage Area(s)'. Appendix A (Definitions and Acronyms) also defines, 'Project Area' and 'Project Boundary'. The 'forest area' is a subsection of the project areas that meets the host country definition of a forest. The definitions of the geographical boundaries have now been clarified and unnecessary complexity has been removed. (Relevant to **CAR 30/09**)

The concept of exclusion zones has been removed. This is an improvement as the introduced complexity previously. Limits on baseline harvesting areas will be derived from the harvest plan which will take them into account. (Relevant to **CAR 30/09**)

The Methodology is now clear that it is for use on one discrete parcel of land, but that it can be used on multiple parcels, but that the emissions reductions and non-permanence must be calculated separately. Mapping requirements are now found in 2.2.1.1.1 and 2.2.1.2. This was sufficient to close **CAR 47/10**.

The equations that used to define $A_{Project,\ t}$ have been replaced, thus the previous confusion removed. (related to **CAR 30/10**)

The changes made to simplify the geographical boundary definitions have been sufficient to close **CAR 30/10**.

Following clarification from VCS, it was agreed that the project area must |

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| | remain fixed for the crediting period (unless a project was to be re-validated, essentially re-started). This has been reflected in the methodology, with the removal of steps to reduce the project area. The VCS also confirmed that projects are responsible for all losses to carbon stocks within the project boundary. In response the methodology now accounts for natural disturbances (and their impact on the whole growing stock) and illegal logging (see Eqn 4.1, and then sections 4.4 and 4.5). The approach taken is therefore in line with VCS requirements. However, equation 4-20 was found to lead to a double deduction of regrowth from the projects GHG benefits. In addition it was highlighted by the auditors that if regrowth post natural disaster is conservatively ignored, this leaves projects with no way to recoup losses following a natural disturbance which could be significant. Carbon Planet has suggested a new approach that involves allowing regrowth to be monitored and corrects equation 4-20 such that it no longer double counts. This relates to **CAR 48/10**, which remains open.<br><br>(ii) Same as previous findings.<br><br>(iii) See section 2.1 above.<br><br>(iv) The carbon pools considered by the project area described in section 2.2.3 of the methodology and conform to the VCS guidelines applicable to the project type.<br><br>Section 1.1 of the methodology now includes a definition of merchantable trees that is related to host country definitions. Both terms "Commercial Trees" and "Commercial Timber Species" have been removed in the Methodology. Both terms "merchantable trees" and "merchantable logs" are now defined in Appendix A. To conclude, clarity has now been provided about what constitutes merchantable trees. This was sufficient to close (**CAR 24/10**) |
| Findings from 15 OCT 10 Assessment | Equation 4-20 and the natural disturbance related equations that flow into it have been modified such that regrowth after natural disturbances can be accounted for. Double deductions no longer occur. This closes **CAR 48/10.** |
| Conformance | Yes ☒        No ☐        N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**2.3** The methodology shall, provide steps to account for $N_2O$ emissions, unless insignificant[3], if any nitrogen fertilizer and/or manure are applied, or N-fixing species planted, during the crediting period. Note that; Reductions of $N_2O$ and/or $CH_4$ emissions are eligible for crediting if in the baseline scenario the project land would have been subject to cattle grazing and/or nitrogen fertilization, and/ or if fire would have been used to clear the land or constitutes a cause of forest degradation. (II. Step 3 Determine the Carbon Pools, paragraphs 10 & 11)

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| Findings from 19 FEB 10 Assessment | $N_2O$ emissions in the baseline are not significant. Appendix C provides the equations for converting between $N_2O$ and $CO_{2e}$. However, the equations in Appendix C are not referenced anywhere else in the methodology so it is not clear where they will be used. |

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[3] Certain GHG sources may be considered "insignificant" and do not have to be accounted for if together such omitted decreases in carbon pools and increases in GHG emissions amount to less than 5% of the total $CO_2$-eq benefits generated by the project.

| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
|---|---|---|---|
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

### 3    <u>Baseline approach:</u>

**3.1**    The baseline scenario shall set out the geographic scope as applicable to the methodology. (VCS 2007.1, Section 6.3)

| Findings from 19 FEB 10 Assessment | The methodology is applicable only for tropical forests, see table 1-1, page 7. This was found to be acceptable. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

**3.2**    The methodology shall provide a procedure for the selection of most conservative baseline scenario. This shall reflect what most likely would have occurred in the absence of the project. (VCS 2007.1, Section 6.3)

In doing so, the methodology shall provide guidance for the selection or establishment of criteria and procedures for identifying and assessing potential baseline scenarios considering the following:

    i.    the project description, including identified GHG sources, sinks and reservoirs;

    ii.    existing and alternative project types, activities and technologies providing equivalent type and level of activity of products or services to the project;

    iii.    data availability, reliability and limitations;

    iv.    other relevant information concerning present or future conditions, such as

    v.    legislative, technical, economic, socio-cultural, environmental, geographic, site specific and temporal assumptions or projections.

| Findings from 19 FEB 10 Assessment | The baseline assessment and selection is conducted in section 2 of the methodology.<br><br>In section 2.1.1 the requirements for justification of the selective logging baseline are provided. This involves a re-iteration of the VCS requirements to this project types.<br><br>The methodology makes an interpretation of the VCS's footnote 13 regarding setting baselines for new management entities, stating that it should equally apply when the land has been acquired for logging but an operator not yet defined. This was found to be acceptable.<br><br>Section 2.1.2 contains a four step process to identify and assess other potential |
|---|---|

| | land uses for the project area. The approach taken was generally logical; however, there were some issues in the text that made it difficult to interpret. (**CAR 35/10**)<br><br>The audit team found that in step 1 it was not necessary to identify GHG sources and sinks for all possible scenarios. Step 2 refers to table 2-1 as a source of criteria for assessing possible scenarios against. The text refers to a, "zero or negligible outcome" for the criteria. It was not understood what this means in the context of the criteria in the table, which do not have a numerical scale. Table 2-1 seems focused on natural resource extraction scenarios (see second row – land suitability/resource potential), but it is not made clear that conservation in the absence of carbon finance, must also be considered as a baseline scenario. (**CAR 35/10**)<br><br>Step 3 references table 2-2 as a tool for further assessing shortlisted baseline scenarios. It is not clear what triggers a scenario to pass or not pass from step 2 to 3. It is not clear if scenarios that are not selective logging could be assessed with table 2-2. (**CAR 35/10**)<br><br>It was concluded that the baseline scenario selection tool presented in section 2-1 was not clear enough to be acceptable. Other established frameworks for selecting the most credible baseline scenario exist (i.e., CDM). (**CAR 35/10**) |
|---|---|
| Findings from 13 AUG 10 Assessment | The baseline assessment and selection is conducted in section 2 of the methodology.<br><br>In section 2.1 it is stated that selective logging must be shown to be the most conservative baseline scenario. It was agreed with Carbon Planet that this was not correct; rather, selective logging must be the most *likely*. (Forms part of **CAR 52/10**)<br><br>A new two step process for selecting the most likely baseline scenario has been introduced. The procedure to identify the baseline scenario as selective logging for VCS IFM-LtPF project activities has been adapted from Steps 1 and 2 of the "Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities" (CDM-EB, 2007a, pp. 2-7). The previous issues raised in **CAR 35/10** have been addressed by these changes and the CAR is now closed. |
| Findings from 15 OCT 10 Assessment | Section 2.1 has been updated to refer to the most "likely" baseline scenario. (This addresses one part of **CAR 52/10**) |
| Conformance | Yes ☒      No ☐      N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**3.3** In defining the process for developing the baseline scenario, the methodology shall ensure that the selection of assumptions, values and procedures will help to ensure that GHG emission reductions or removal enhancements are not overestimated. (VCS 2007.1, Section 6.3)

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|---|---|
| Findings from 19 FEB 10 Assessment | The methodology relies heavily on the data provided in forest inventory reports (FIR) to set the baseline. In section 1.3.2 of the methodology it is mentioned that the FIR must be, "legally sanctioned"; however, this is not mentioned |

| | elsewhere in the report, including in the definition in Appendix A. The definition in Appendix A is very broad (page 124). There is a concern that the lack of controls over what constitutes a valid FIR, and the lack of any requirement to verify that the accuracy of data could lead to the overestimation of the baseline emissions in some cases. (**CAR 36/10** ) |
|---|---|
| Findings from 13 AUG 10 Assessment | The methodology now includes steps to validate the use of FIRs (section 3.2.1, p25), so the concern over their legitimacy no longer exists. There is no longer a need to correct for the use of historical data. This was sufficient to close **CAR 36/10**.<br><br>However, it was noted by Rainforest Alliance that the validation of an existing FIR was as labour intensive as the 'measured data pathway'. CP acknowledged that there was an error on p25, and that the validation of FIRs was supposed to use preliminary plot data, not permanent data as shown in step 4. The approach at present is acceptable, although maybe not the most efficient. If CP change this section, it must be in a way that maintains the statistical robustness of the approach (i.e. plots must be able to determine with statistical confidence that the FIR is accurate/conservative). |
| Findings from 15 OCT 10 Assessment | The approach to validation of existing FIR data has been revised to be less labor intensive. This was an acceptable change (there was not a CAR around this issue). |
| Conformance | Yes ☒ No ☐ N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**3.4** The methodology shall be compatible with the project type specific rules on baseline development specified in the VCS Tool for AFOLU methodological issues (See: II. Step 4, Establish a Project Baseline, paragraphs 13 - 16)

| Findings from 19 FEB 10 Assessment | Section 2.1.1 of the methodology is consistent with the IFM specific requirements for establishing a baseline scenario (paragraph 14). |
|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. |
| Conformance | Yes ☒ No ☐ N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**3.5** The methodology shall estimate the baseline net GHG emissions and removals for each year of the proposed crediting period. (II. Step 4, Establish a Project Baseline, paragraph 17)

| Findings from 19 FEB 10 Assessment | The methodology leads to annual GHG emissions quantification of emissions and removals. |
|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. |
| Conformance | Yes ☒ No ☐ N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

## 4    Additionality:

**4.1**    The methodology shall contain an appropriate and adequate methodological procedure for determining whether the project is additional, and demand sufficient information to be presented in the PDD such that the additionality can be validated by a third party. (VCS 2007.1, Section 6.4)

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|---|---|
| Findings from 19 FEB 10 Assessment | Additionality is addressed in section 7 of the methodology (Additionality and Non-Permanence). It was not understood why a fundamental concept of additionality, which is closely tied to baseline scenario development, does not appear until section 7 (page 90) of the methodology and was grouped with non-permanence. (**OBS 11/10**) <br><br> The methodology references the VCS's three step project test to check for additionality. The methodology states that the project developer "should" use this test applying it is optional, yet no other alternative to demonstrate additionality is provided. (**CAR 37/10**) |
| Findings from 13 AUG 10 Assessment | Additionality has been moved to Section 2.1.3 to follow on from Section 2.1.2 Possible Alternative Baseline Scenarios in the Project Area. **OBS 11/10** was closed by this change. <br><br> The language of this section has been changed to reflect the mandatory nature of an additionality test. **CAR 37/10** was closed by this change. |
| Conformance | Yes ☒            No ☐            N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

## 5    Emissions:

This section is divided into ex-ante and ex-post emissions calculations. The ex-post emissions will be calculated as a result of the monitoring which is assessed in section 7 below. There is also a separate section which assesses the specific requirements as stated in the VCS documentation.

### *Ex – ante emissions calculation*

**5.1**    The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the baseline scenario (ex-ante). (VCS 2007.1 6.5.3)

The assessment should consider:

i.  The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

ii.  The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

iii.  The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from

official statistics, expert judgment, proprietary data, IPCC Good Practice
Guidance for LULUCF, commercial data and scientific literature.

iv. Any data gaps.

| | |
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| Findings from 19 FEB 10 Assessment | The calculation steps to quantify the emissions ex-ante from the baseline scenario are provided in section 3 of the methodology.

Section 3.1 provides an overview and the equations for calculation of the total emissions in the baseline scenario. Emissions in the baseline scenario are calculated as the emissions due to degradation (actual loss of standing biomass) and the emissions due to the activities associated with degradation (transport, processing etc). Figure 3-1 presents the three pathways that a project can take through the methodology depending on the data availability. The pathway to be taken is determined by the presence of a) a detailed forest inventory report (FIR), b) a less detailed FIR or C) no FIR. The two pathways that can be taken are described as 'ex-ante' (a or b) and 'ex-post' (c). The naming of these was found to be somewhat confusing. The 'ex-post' route actually requires that permanent sample plots are required *before* the project developer can estimate the baseline emissions. More descriptive names may help avoid confusion. (**OBS 12/10**)

This approach of clearly presenting the pathways based on data availability is a sensible one and an improvement on previous versions of the methodology. However, it would be even clearer if the pathways related to the presence or absence of product specific data was also incorporated.  As the inclusion or exclusion of this data requires additional pathways not described in figure 3.1. (**OBS 13/10**)

**Emissions from Degradation**

The high level calculation of emissions from degradation is performed in Eqn 3-2. The emissions are comprised of emissions from deadwood decay, harvested wood product emissions, growth foregone and regrowth (a baseline sink). These parameters are then calculated in the following sections.

Section 3.2.1 provides an equation for calculating the volume of merchantable logs by applying a correction of growth to any data gathered from a historical Forest Inventory Report. There is no maximum age of the FIR report to be used. (**CAR 36/10**). The growth factor applied is based on the "mean annual growth volume for a tropical forest with a corresponding climate region and ecological zone". No guidance is provided on where this data should be obtained from. (**CAR 38/10**). It was not thought to be correct to apply a value of growth for the whole forest, when the value is being added to only a portion of the trees (those deemed merchantable). Additionally, this approach does not consider that some forests may be in a state closer to equilibrium than significant growth, and that growth in volume can be balanced by loss through death and decay. (**CAR 39/10**).

More generally, there is no requirement in the methodology to conduct any checks of data provided in the FIRs. Given the potential variation in quality of such reports in the tropics, and the fundamental importance of the data, this |

was not found to be acceptable. (**CAR 36/10**)

Less Detailed FIR Available

In section 3.2.1.1.1 the methodology for calculating the baseline emissions from a less detailed FIR is presented. The method for converting from merchantable volume to carbon is correct (Eqn 3-4 to 3-8).

In section 3.2.1.1.2 the methodology applies a biomass conversion and expansion factor (BCEF) to convert from volume of merchantable timber to biomass in the whole tree (above ground). The BCEFs that the audit team are aware of require the total volume of wood per ha to be used in the calculations (not just for some certain trees who meet the 'merchantable' criteria). The reason for this is that the factors are significantly related to the corresponding biomass of the inventoried volume[4]. The reference provided by in the methodology on page 31 also shows the BCEF to be a function of total volume per ha. The methodology provides no way of calculating the total volume per ha of a strata that could be used in selecting a BCEF. (**CAR 40/10**)

More Detailed FIR Available

In section 3.2.1.2 the methodology for calculating the baseline emissions from a more detailed FIR (with diameter at breast height, DBH, and height of trees) is presented. Equation 3-11 uses an average DBH and average height with a volumetric allometric equation to calculate the merchantable log volume per ha. It is not mathematically correct to use average values as inputs to allometric equations, since the output of the equation is non-linear. The same applies for equation 3-13 where a biomass allometric equation is used and average data are used as inputs. (**CAR 40/10**)

No FIR Available

In section 3.2.2.1 the methodology for calculating the baseline emissions when there is no FIR is presented. No guidance is provided on where individual volumetric allometric equations used in Eqn 3-16a could be sourced from is presented. (**CAR 38/10**). In equation 3-19 allometric equations are used correctly. However, the text in step two of section 3.2.2.2 states that the allometric equation converts the merchantable log volume to the AGB, when in fact it is DBH and height data that is used as the input.

Annual Net Harvest Area

In section 3.2.3 the annual net harvest area is calculated based on a sustainable harvesting rate, the volume of wood per unit area and the total area.

The title of section 3.2.5, "Carbon in the annual aboveground biomass of the merchantable trees" was found to be ambiguous, but the calculation was appropriate.

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[4] http://www.fao.org/docrep/W4095E/w4095e06.htm#3.1.3 biomass expansion factor (bef)

Eqn 3-23 calculates the annual volume of wood that is expected to be cut in the baseline scenario. It is not clear, why if a harvest plan existed there are no provisions for its use in making a prediction on the baseline cutting schedule. There is also a concern that only sustainable cutting cycles can be considered since sustainable harvesting may not be common practice and may not be what the baseline agent typically does. Finally, there is no consideration of limiting factors that may mean the scale of harvesting derived from Eqn 3-23. For example, lack of access or man power, etc., may mean the harvest rate calculated is unrealistic for the region in which it is being proposed. (**CAR 49/10**).

Once the key parameters of annual net harvest area, carbon in merchantable logs and carbon in merchantable trees have been determined in section 3.2 (by one of the three methods), they are used in section 3.3 to calculate the other parameters which relate to emissions from degradation (emissions from deadwood decay, HWP decay, growth foregone and regrowth).

Deadwood

Section 3.3.1 calculates the net annual emissions from the deadwood pool. Generally, the approach taken to calculating the inputs and emissions from the deadwood pool is appropriate; however, there are a number of specific issues which mean the section cannot yet be deemed to be fit for purpose.

In section 3.3.1.1 the carbon input to the deadwood pool from residual stand damage is calculated. The methodology requires that a residual stand damage factor that is specific to the region, forest type and logging operation intensity is used. This is an example, of which more exist, where the guidance on selection of factors from the literature is not adequate. No potential sources are given or any indication of what the minimum level of specificity is provided. It is not known whether such sources of data will exist for all tropical regions and forests. (**CAR 38/10**) The CDM has a standard approach for providing guidance on sources of data and the provision of default data (in the data/parameters boxes), but the presence of a standard structure for source selection is lacking in this methodology. For another example, see section 3.3.1.2 where the guidance for selecting a suitable branch and trimming factor is presented differently.

The definition of branches and trimmings in section 3.3.1.2 was found to be unclear. For example, 'litter' is not usually considered part of a tree, but rather a pool that losses of tree biomass (mainly leaves and twigs) flow into. The description of the parameter $f_{branch\_trim}$ does not clarify what the factor represents. Without a clear definition or any example sources of data, searching the literature for such a factor would be difficult. (**OBS 14/10, CAR 38/10**)

Eqn 3-29 which calculates the, "Carbon in branches and trimmings left over from harvesting at time, $t$" requires the parameters $C_{merch,t}$ and $C_{AGB\_merch,t}$. $C_{AGB\_merch,t}$ is calculated in both the BCEF method in section 3.2.1.1.1, Eqn3-10 and in the allometry section 3.2.1.2, Eqn 3-15 . $C_{merch,t}$ is calculated in the in Eqn 3-25 using the $\bar{C}_{merch,t}$. However, $\bar{C}_{merch,t}$ is calculated separately

depending on the method (BCEF or allometry) chosen.  In Step 4 of section 3.2.1.1.1 A (BCEF method) Eqn 3-5 $C(bar)_{merch,t}$ parentheses are not used as in Eqn 3-18 used in Step 6 of 3.2.2.1 (allometric method).  Additionally, the descriptions associated with Step 4 of 3.2.1.1.1 A and Step 6 of 3.2.2.1 are different (one is described as a weighted average and one is described as an average).  Inconsistencies in the multiple methods that are presented for the calculation of $C(bar)_{merch,t}$, create confusion. (**CAR 13/09**).

Section 3.3.1.3 calculates the carbon in the AGB (of merchantable trees) due to infrastructure clearance. All previous calculations have only calculated carbon stocks and volumes of 'merchantable trees', which meet a certain minimum DBH and species criteria. Since clearance for infrastructure will not only remove merchantable trees a correction factor is needed. The correction factor is calculated in Eqn 3-30. The method creates a factor that when multiplied by the merchantable tree volume will give the volume of the merchantable species down to a diameter of 10 cm. Non-merchantable species will not be counted, which is conservative. The method relies on one reference and it relies on the minimum diameter of all merchantable species to have been set at 25-20 cm. There are no requirements elsewhere in the document for this DBH range to be used, and no method for applying a correction for cases where this DBH range was not used. When the ex-post method has been used and the volume of all trees > 10 cm DBH could have been calculated accurately, it does not seem necessary to introduce this possible source of inaccuracy. (**CAR 41/10**).

In section 3.3.1.4 a detailed method is presented for calculating the project area specific decay rate of deadwood to be used from year 5 of the project onwards. It is not clear why the burden of conducting this assessment is placed on project developers, the increases in accuracy that would be achieved in such a study would most likely be insignificant when compared to the uncertainty introduced by using FIRs without checking them, or pan-tropical BCEFs and allometric equations. (**OBS 15/10**)

The concept of time, and annual inputs and losses from the deadwood pool was not found to be well described in the names of the parameters or the descriptions given to them. This made interpreting the method to calculate the flow of carbon through the deadwood pool difficult. For example, in Eqn 3-27a the parameter $C_{DW\ in,\ t}$ is described as, "Total carbon in the deadwood pool at time, t", whilst in Eqn 3-37 the parameter $C_{DW\ pool,\ t}$ is described as, "Carbon remaining in the deadwood pool at time, t". These two descriptions seem to be describing the same things but the equations reveal them to be different (and the parameter names also hint that they are different).  Please see the HWP section for a discussion of a spreadsheet that was presented to demonstrate the calculation method for the flow of carbon through the HWP pool, but which is also applicable to the deadwood equations as they are similar in structure. (**CAR 42/10**)

Harvested Wood Products (HWP)

Section 3.3.2 calculates the carbon emissions from the long term HWP pool.  In the 2nd paragraph of section 3.3.3, page 54 it is stated that if the ratio of logs going into the short term HWP pool vs. the long term pool is unknown then it is conservative to assume all logs go into the long term pool. This assumption is

acceptable; however, leaving it until section 3.3.3 could lead to confusion. (**OBS 16/10**).

In equation 3-40 the term $\overline{C}_{merch,p,t}$ was found to be described in an ambiguous manner. No guidance is provided on the conservative selection of a factor for lumber recovery (**CAR 38/10**). This equation calculates the carbon in long-term harvest wood product residues, using product specific inventory data e.g. $\overline{C}_{merch,p,t}$, however the different product types are not summed in order to calculate $C_{ltHWPresidues,t}$. Hence this equation is only calculating $C_{ltHWPresidues,t}$ for one product type. (**CAR 13/09**)

A spreadsheet was presented to the review team to demonstrate the calculations made by Eqns 3-41 to 3-45. The spreadsheet's mathematics were correct for the example presented, but the formulas would not work when the HWP input changed between years (**CAR 13/09**). Going through these calculations with the developers highlighted the confusion introduced by the names of the parameters and treatment of time. (**CAR 41/10**)

The same issues raised for the long term wood products apply for the sort term wood products calculations presented in section 3.3.3. In addition, in equation 3-47, because $C_{stHWPcomm\_FW,t}$ is not product specific, and $C(bar)_{merch,p,t}$ is product specific, $C(bar)_{merch,p,t}$ must be summed ($\sum C(bar)_{merch,p,t}$) in order to calculate $C_{stHWPcomm\_FW,t}$ as a non product specific total carbon emissions from short term products. (**CAR 13/09**)

Growth Foregone

Section 3.3.4 calculates the growth foregone in trees that are logged under the baseline scenario (Eqn 3-50). Insufficient guidance was provided on selecting a for $G_{mean\_unlogged,t}$. It was also considered incorrect to use a growth value for the whole forest, when it is only applicable to some trees (i.e. those that meet the definition of merchantable and would have been harvested). In addition, the methodology does not consider that some forests may be in equilibrium, or consider that natural losses would have occurred as well due to death and decay. (**CAR 39/10** )

The description of the parameter $G_{mean\_unlogged,t}$ in Eqn 3-50 is ambiguous. The parameter includes the word unlogged, but the description says, "following logging". (**CAR 43/10**)

It should be noted that in order to measure growth between two periods of time in a PSP, a longer time period that one year would be required (see Eqn 3-51).

Regrowth After Selective Logging

It is conservative to consider the carbon sink of regrowth in the baseline scenario. This is calculated in section 3.3.5. The assumption that all areas cleared for infrastructure would never be subject to regrowth was not valid, secondary roads and log landings can regrow quickly. (**CAR 50/10**)

Otherwise, section 3.3.5 was acceptable.

**Emissions from Activities Associated with Degradation**

Section 3.4 calculates the emissions associated with a harvesting operation and are summarised in Figure 3-2. The approach is thorough.

Most of the equations were well presented. However, in a number of cases, no guidance is given on where emissions factors should be sourced from. There is also no guidance on how to make conservative estimates for consumption values, for example, how does one estimate the amount of electricity that will be used in planning the operation? (**CAR 38/10**)

There were found to be some specific issues with some equations.

Eqn 3-57 does not consider that as a road is made wider the productivity of the grader (length of road per hour) may change (**CAR 13/09**). The reference provided for getting data on grading is an FAO publication that is specific to steep terrains. The audit team was not able to assess the applicability of the data within, as no page numbers were provided for where data should be sourced from. (**CAR 44/10**)

For Eqn 3-61 the emissions associated with harvesting operations are calculated. As part of the calculations the parameter $FC_{harvest}$ is obtained using table 3-1; however, no finite number is given in the table, but rather a range (**CAR 38/10**). Conservative estimates would use the lower bound of the range for the baseline scenario; however, no guidance on this matter is offered in the text.

In Eqn 3-68c $N_{trucks}$ is calculated as a function of the column of long term HWPs and the truck load capacity. In equation 3-64c the same parameter is calculated as a function of the volume of merchantable logs and truck load capacity. It is confusing to use the same parameter twice that is calculated with two different methods. (**CAR 43/10**)

It was noted that at no point was the total biomass of the forest per ha calculated, since only the biomass of merchantable trees was calculated. The carbon in merchantable species that were below the critical DBH but above 10 cm DBH are calculated later using a correction factor, but non commercial species are never calculated. This leads to a conservative under-estimate of emissions when emissions from clearing for infrastructure are calculated.

| | |
|---|---|
| Findings from 13 AUG 10 Assessment | Carbon Planet has re-named the pathways to reflect the difference in data sources for each pathway - see Figures 1-1 and 3-1. The two pathways are now called "Existing Inventory Data" and "Measured Data", where the data will be obtained from a Forest Inventory Report or equivalent document, and from field measurements in the Project Area, respectively. Note, both these pathways are ex ante estimates for carbon due to degradation - which is in-line with the definition of ex ante. This closes **OBS 12/10**.<br><br>**Emissions from Degradation**<br><br>The primary parameters, annual net harvest area, annual total carbon in merchantable logs and annual carbon in the AGB of the growing stock are calculated in section 3.2 according to which of the data pathways are taken. Section 3.3 then uses these parameters to calculate each of the parameters in equation 3.2 (p23) that are used to calculate the emissions from degradation.<br><br>The calculation of the primary parameters was found to be difficult to follow, but acceptable.<br><br>The methodology no longer has a correction for historical data (relevant to **CAR 36/10**). Specific guidance for selection of 'average annual growth' has been provided in Section 3.3.5 of the Methodology BSTP 3.1. (Relevant to **CAR 38/10**).<br><br>Less Detailed FIR Available<br><br>The methodology now uses BCEFs correctly in section 3.2.1.2.2 (p29); (relevant to **CAR 40/10**). However, BCEFs (and BEFs) may vary depending upon strata, and at present the parameter BCEF (and BEF) does not take this into account. For example see Eqn 4-22 (p 73) where one BCEF is multiplied by volume data from multiple strata. (Forms part of **CAR 52/10**)<br><br>More Detailed FIR Available<br><br>Equations 3-10 to 3-12 now correctly sum the results of allometric equations used on individual trees. (relevant to **CAR 40/10**)<br><br>No FIR Available<br><br>Specific guidance for selection of individual volumetric allometric equations has been provided in Section 3.2.1.3.1 A of the Methodology BSTP 3.1. (relevant to **CAR 38/10**)<br><br>Annual Net Harvest Area<br><br>Section 3.2.3.1 to use existing harvesting plan for predicting the annual volume of wood harvest under the baseline scenario. In addition, it is stated that a commonly employed and sustainable method of harvesting must be used to generate harvest area data if plans do not already exist. These plans would need to be validated during project validation. The changes made close **CAR** |

**49/10**.

Deadwood

Guidance for the selection of a residual stand damage factor has been provided in Section 3.3.1.1 based on the study by Brown *et al.*, (2005). Brown *et al.*, (2005) compiled the residual stand damage factor (damage over extracted) for various countries and revealed a strong relationship with commercial log length (Figure 11, p. 16). The results have been summarised in this Methodology in Table B-3 in Appendix B and specific guidance for using this table is presented in Section 3.3.1.1. (relevant to **OBS 14/10**) A slight mis-quote of Brown *et al.*, (2005) was found that requires correction. The definition of branch trim factor was still found to be ambiguous, given the inclusion of coarse woody debris in the definition, but not in the derivation of the number. (Forms part of **CAR 52/10**)

The Equation 3-29 in the Methodology BSTP-3 has been revised to Equation 3-20 in the Methodology. This Equation 3-20 now does not use $C_{AGB\_merch,t}$. However, it requires $C_{merch,t}$ and is obtained from Equation 3-15 (in BSTP-3.1). In the combined BCEFS and wood density methods, and the allometric method, the original parameter $C_{AGB\_merch,t}$ has been replaced by $C_{AGB\_gstock,t=0}$, the average carbon per hectare in the aboveground biomass of the growing stock. The parameter $C_{AGB\_gstock,t=0}$ is calculated in Equation 3-9 and Equation 3-14 for the BCEFS and allometric methods in Sections 3.2.1.2.2 and 3.2.3.2, respectively. $C_{merch,t}$ is not required in the equations. Carbon Planet have added parentheses in Equation 3-6 (formerly Equation 3-5 in BSTP-3) and have also deleted the term "weighted" from Step 6 of Section 3.2.1.2.1,A (formerly Step 4 of 3.2.1.1.1,A in BSTP-3). (Relevant to **CAR 13/09**)

Emissions from infrastructure clearance are no longer quantified by the methodology. This is conservative. This closes **CAR 41/10**.

The calculations of project specific deadwood decay rates are no longer mandatory. This closes **OBS 15/10**.

Harvested Wood Products (HWP)

The equations and parameters associated with the emissions from the HWP pool have been changed to improve clarification of the time flow through equations (sections 3.3.2 and 3.3.3). The auditors still found it very difficult to understand how the equations were supposed to be implemented. After discussion between RA and CP the example spreadsheet provided by CP to demonstrate how the equations were found to work was found not to function correctly if the HWP inputs vary year by year (which they could). This same issue was highlighted in the previous audit report. CP has presented a solution that, if executed correctly, will solve this issue. It will also be necessary to provide example tables to aid developers, given the complexity of the approach taken. **CAR 42/10** remains open.

The statement regarding conservative treatment of HWP allocation has been moved forward in the methodology, closing **OBS 16/10**.

For Equation (in BSTP-3) which is now Equation 3-26 (in BSTP-3.1), the term $C_{merch,p,t=0}$ has been clarified in the parameter description table as "Average carbon per hectare in merchantable logs of forest product type p=sawlog, in the Project Area determined ex ante - before the start of the IFM-LtPF project activity, hence t=0 year". (relevant to **CAR 38/10 and CAR 13/10**)

Equation 3-40, now 3-26 was correct; however, the parameter description did not limit the calculation to only sawn wood and was hence ambiguous. This has now been corrected. However, a similar problem persists with the parameter description for Eqn 3-33 where the parameter is not limited to stHWPs. (Relevant to **CAR 13/09 and CAR 52/10**)

Growth Foregone

Section 3.3.4 p47 calculates the carbon stock changes due to growth foregone.

In Section 3.3.4, an ex ante application of growth foregone due to selective logging has been omitted from the Methodology - this is a conservative omission. Instead, an ex post means of deriving a Project Area specific growth value in the merchantable trees is provided in Step 1 of Section 3.3.4 which deals with annual growth foregone of merchantable trees only. (This closes **CAR 39/10**)

To avoid ambiguity, $G_{mean\_unlogged,t}$ in Eqn 3-50 and its description have been changed to $G_{growth\_foregone,t}$ and "Annual average growth in the aboveground biomass in the merchantable trees in the Project Area in year, $t$, (where $t=1,2,3$ ... $t^*$ years elapsed since the start of the IFM-LtPF project activity)", respectively. (this is relevant to **CAR 43/10**)

After being guided through the section by CP, RA have concluded that whilst all steps to execute the setting up of permanent sample plots are present in the methodology, two weaknesses in cross referencing exist, which makes it hard to follow. Firstly, neither 3.3.4 nor 3.2.1.3.2 makes reference to section 7.1.2 (how to set up PSPs). Secondly in 7.1.2, point (ii) is unspecific as to the exact uses of the PSPs. If these links were clear there would be no issue. Small clarification needed. (Forms part of **CAR 52/10**)

Regrowth After Selective Logging

The methodology no longer considers the emissions associated with the clearance for infrastructure, so it is not necessary for regrowth to be calculated there. This closes **CAR 50/10**. The section on regrowth is now acceptable.

**Emissions from Activities Associated with Degradation**

Section 3.4 still calculates the emissions associated with a harvesting operation and are summarised in Figure 3-2. The approach is thorough. Two emissions sources have been removed, infrastructure establishment and harvesting (operations). This is conservative and acceptable.

Guidance on the selection and source of emission factors for fuel consumed in

| | forestry equipment, and ground transportation has been provided in BSTP-3.1. See Sections 3.4.1, to 3.4.4. (relevant to **CAR 38/10**) |
|---|---|
| | The section and parameter concerning the emissions due to administration and planning, including inventory and pre-harvest planning, have been omitted from the Methodology due to the difficulty for the Project Proponent to obtain or derive the amount of electricity that would be consumed for planning the selective logging operations. This is a conservative omission. (relevant to **CAR 38/10**) |
| | Grading is no longer included in the baseline. (relevant to **CAR 13/10**) |
| | The guidance for selecting the fuel consumption of a harvester has been revised in Step 2 of Section 3.4.1. In this, it is stated that "if a range for fuel consumption is provided, the Project Proponent is required to provide justification for their choice of fuel consumption in the VCS PD. If no justification can be derived, it is conservative to select the lower end of the range." (relevant to **CAR 38/10**) |
| | Where references are provided for data sources, Carbon Planet is now explicit in the location of these, to permit checking by the audit team and retrieval by the Project Proponent. For all data sources recommended in the guidance for parameter selection, the following reference format has been taken: Reference/author(s) name, year of publication, volume (if applicable), chapter (if applicable), section (if applicable), table/figure number (if applicable) and page number(s). This closes **CAR 44/10**. |
| | The parameters to denote the number of trucks required for log transport ($N_{trucks\_transport,t}$) (see parameter table of Equation 3-44) and distribution ($N_{trucks\_distrib,t}$) (see parameter table of Equation 3-44) have been differentiated so as to avoid confusion in BSTP 3.1. (relevant to **CAR 43/10**) |
| | The methodology does now calculate the growing stock of the forest. |
| Findings from 15 OCT 10 Assessment | Less Detailed FIR Available |
| | $BCEF_j$ are now stratum specific in the methodology. (This addresses one part of **CAR 52/10**) |
| | Harvested Wood Products (HWP) and Deadwood |
| | The miss-quote from Brown *et al.*, has been corrected. (This addresses one part of **CAR 52/10**) |
| | The approach to calculating emissions from HWP (3-29 a and b) and deadwood (Eqn 3-22a and b) has now been revised. In each case two equations are presented – a simple case when there is a constant input into the pool, and a more complex equation for when the input varies year on year. Appendix D provides an example of how to perform the calculation for deadwood. This was necessary due to the complexity. The units have also been corrected such that they are consistent throughout the methodology. This closes **CAR 42/10**. |

| | The parameter in 3-33 that was ambiguous has been corrected. (This addresses one part of **CAR 52/10**) |
|---|---|
| | |
| | <u>Growth Foregone</u><br>Section 3.2.1.3.2 and 3.3.4 now includes a reference to PSPs in section 7.1.2. 7.1.2, point (ii) is now specific as to the exact uses of the PSPs. (This addresses one part of **CAR 52/10**) |
| Conformance | Yes ☒        No ☐        N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.2** The methodology shall contain procedures that result in a *conservative* estimation of the sum of the <u>baseline emissions</u> within the project boundary that would have occurred in the absence of the proposed VCS project activity (ex-ante), taking into account the uncertainties associated with the data and parameters used. In addition, the procedure shall be designed such that it can be *carried out in an unambiguous way, replicated, and subjected to a validation and/or verification study*.

| Findings from 19 FEB 10 Assessment | The methodology does not contain any major systematic issues that would render the baseline calculations inherently not conservative. However, issues were raised above regarding the reliability of the FIRs and lack of verification of FIR accuracy. Additionally, some equations were found to contain elements such as Eqn 3-50 that were not conservative.<br><br>The methodology is designed in a way that makes it replicable and possible to validate. |
|---|---|
| Findings from 13 AUG 10 Assessment | The methodology does not contain any issues that would render the baseline calculations inherently not conservative. |
| Conformance | Yes ☒        No ☐        N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.3** The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the <u>project scenario</u> (ex-ante). (VCS 2007.1 6.5.3)

The Assessment should consider:

i. The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

ii. The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

iii. The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

iv. Any data gaps:

| Findings from 19 FEB 10 Assessment | Section 4 of the methodology calculates the emissions that could be released under the project scenario. The emissions are calculated as the sum of emissions from project planning, project design, monitoring, natural disturbances and illegal harvests. |
| --- | --- |
| | There was little guidance on how emissions from project planning and design should be quantified. For example, where should a project developer draw the boundary of their GHG footprint assessment for the various components? (**OBS 17/10**) |
| | Section 4.4 provides a method for estimating the emissions caused by natural disturbances. It appears from the calculation that the method only quantifies the loss of carbon from merchantable trees. However, in the description of the process in step 3 (page 74) it is said that the, "AGB of trees above 10 cm" will be calculated. The subscript of the parameter $C_{AGB\_10+\_nd,j,t}$ does not include the word, 'merch' which is usually used to denote merchantable trees. Throughout section 4.4, "all trees" and "total carbon" are used when in fact the equations only refer to the pool that is in the merchantable trees (or merchantable species down to 10 cm DBH). This is an example of a common issue in the methodology; small inconsistencies accumulate to make the meaning and intentions of a section ambiguous. (**CAR 43/10**) |
| | Step 6 of section 4.4 (page 76) states that a "conservative" estimate of damage must be made. This could be ambiguous, because in this case a conservative estimate would involve estimating on the high side. This needs to be clear to avoid confusion. (**OBS 18/10**) The factor of disturbance needs only apply to merchantable species > 10 cm in diameter to be used in Eqn 4-16 but this is not clear in the parameter description. (**CAR 43/10**) |
| | In section 4.5 emissions due to illegal harvesting are calculated. |
| | Two methods are presented for quantifying emissions, the field inventory method (section 4.5.1) and the satellite imagery method (4.5.2). The level of guidance on how emissions should be calculated was found to be insufficient. |

| | |
|---|---|
| | For example, how would one 'estimate' emissions in step 3 of 4.5.2? Steps that a project developer can follow and an auditor can subsequently verify are required. (**CAR 51/10**) |
| | It was noted that harvesting could occur by the project developer that is not strictly illegal, but that does contravene the objectives of the project. As such a narrow interpretation of illegal harvesting could mean that some harvesting emissions are not accounted for. (**CAR 12/09**) |
| | The methodology is conservative because it does not account for regrowth after illegal harvesting. |
| | In the case of a natural disaster or illegal logging the methodology currently calculates the emissions that occurred from the commercial species only down to 10 cm DBH (although this was ambiguous as mentioned above) and then excludes the area from the project area, regrowth of lost stocks is not considered. The auditors are seeking guidance from the VCS as to whether treating avoidable and unavoidable losses in this manner is correct. (see **CAR 48/10**) |
| | In Eqn 4-20 a BCEF is used without the total volume per ha being known. See findings in section 5.2 for the issues surrounding doing this. (**CAR 40/10**) |
| Findings from 13 AUG 10 Assessment | As previously, Section 4 of the methodology calculates the emissions that could be released under the project scenario. The emissions are calculated as the sum of emissions from project planning, project design, monitoring, natural disturbances and illegal harvests. |
| | In order to help the Project Proponent draw the boundary of their GHG footprint assessment, the following statement has been included in section 4 after Equation 4-1: |
| | "*The Project Proponent must use the guidelines established by The Greenhouse Gas Protocol (WBCSD and WRI, 2005) to determine the boundary for accounting of the activities of the above emission sources.*" (*p*61) |
| | This closes **OBS 17/10**. |
| | Section 4.4 that calculates emissions from natural disturbances has been changed considerably since the last version. The calculation steps now account for emissions from the total growing stock. There are no longer parameter issues in this section (relevant to **CAR 43/10**). However, note that issues were found with the new natural disturbance equations. |
| | Carbon Planet has revised both the methods for calculating illegal harvesting in the Methodology BSTP 3.1 (see Section 4.5.1. and 4.5.2) and provides explicit and logical steps. The procedure for estimating carbon losses due to illegal harvesting using satellite data (Section 4.5.2) has been simplified by using average growing stock per hectare in each stratum. Thus the Steps 3 and 4 of Section 4.5.2 (in the Methodology BSTP 3) for estimating the volume to trees to 10 cm DBH are no longer applied and are removed in the Methodology BSTP 3.1. This is sufficient to close **CAR 51/10**. |

| | To avoid confusion, the word "conservative" has been removed. Step 5 of Section 4.4 in BSTP-3 is now Step 4 of Section 4.4. This closes **OBS 18/10**.<br><br>**CAR 40/10** has been closed. |
|---|---|
| Conformance | Yes ☒         No ☐         N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.4** The methodology shall contain procedures that result in a *conservative* estimation of the sum of the <u>project emissions</u> within the project boundary (ex-ante), taking into account the uncertainties associated with the data and parameters used. In addition, the procedure shall be designed such that it can be carried out in an *unambiguous way, replicated, and subjected to a validation and/or verification study*.

| Findings from 19 FEB 10 Assessment | The methodology does not contain any systematic issues that would render the project scenario calculations inherently unconservative. The methodology is designed in a way that makes it replicable and possible to validate. However, see **OBS 17/10** relating to defining the boundaries of the emissions from project activities. |
|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. However, it was agreed that the methodology was not explicit in how it can be used to generate ex-ante estimates sufficient to estimate the emissions reductions that would be generated by the project. As this is important, CP agreed that it would be best to add a paragraph explaining this. |
| Conformance | Yes ☒         No ☐         N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.5** The methodology shall provide steps to calculate the <u>net GHG benefit of the project</u> ex ante. The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emission reductions and removal enhancements during project implementation. GHG emission reductions or removal enhancements shall be quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario. (VCS 2007.1 6.5.3)

*Note, an ex-ante calculation of the net carbon benefits of the project is only required to determine whether decreases in carbon pools or increases in GHG emissions are insignificant and need not be measured and monitored. (II. Step 0, paragraph 1)*

| Findings from 19 FEB 10 Assessment | The methodology has two sections where the net anthropogenic GHG emissions reductions are calculated (Section 1.3.1, page 9 and 6.1, page 85). It is not clear why both equations 1-1 and 6-1 are needed as they appear to do the same things, although the baseline parameter is described differently in the two equations (**CAR 13/09**). This discrepancy must be addressed. Eqn 1-1 can be used to calculate the net GHG benefit of the project (although the description of the baseline parameter appears incorrect). |
|---|---|
| Findings from 13 AUG 10 Assessment | The duplication of equations has been resolved. Please see point above regarding the ex-ante calculations. |
| Conformance | Yes ☒         No ☐         N/A ☐ |

| CAR/OBS | No CARs or OBS raised. |
|---|---|

**5.6** All significant GHG sources and leakage shall be measured, estimated and monitored in both the baseline and project case. Certain GHG sources may be considered "insignificant" and do not have to be accounted for if together such omitted decreases in carbon pools and increases in GHG emissions amount to less than 5% of the total CO2-eqbenefits generated by the project. Pools can be omitted if their exclusion leads to conservative estimates of the number of carbon credits generated. (II. Step 0, paragraph 2 and 3)

| Findings from 19 FEB 10 Assessment | The methodology has a system for determining materiality with respect to GHG sources and sinks in section 1.3.3. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Following a discussion between CP and RA it was agreed that the concepts of materiality and significance are in fact separate. It was also agreed that the VCS language and guidance on determining significance was sufficient for projects to use without further elaboration. As such, CP agreed to replace the materiality section with one on significance that simply references the relevant VCS guidance. | | |
| Findings from 15 OCT 10 Assessment | Section 1.2.3 of the methodology is now called 'Significance' and refers to the VCS definition of significance. There was no CAR surrounding this issue; however, the methodology is now better aligned with the wording and concepts of the standard. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

### *Ex-Post Emissions Calculation*

**5.7** The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the <u>baseline scenario</u> (ex-post). (VCS 2007.1 6.5.3)

The assessment should consider:

   i. The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

   ii. The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

   iii. The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

   iv. Any data gaps.

| Findings from 19 FEB 10 Assessment | The same calculations used to calculate the baseline emissions ex-post are used ex-post as described in section 8.2.1.<br><br>Please see the findings and CARs related to monitoring and the ex-ante |
|---|---|

| | calculation of baseline emissions. |
|---|---|
| Findings from 13 AUG 10 Assessment | Please see the findings and CARs related to monitoring and the ex-ante calculation of baseline emissions. |
| Findings from 15 OCT 10 Assessment | Please see the findings and CARs related to monitoring and the ex-ante calculation of baseline emissions. |
| Conformance | Yes ☒  No ☐  N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.8** The methodology shall contain procedures that result in a conservative estimation of the sum of the <u>baseline emissions</u> within the project boundary that would have occurred in the absence of the proposed VCS project activity (ex-post), taking into account the uncertainties associated with the data and parameters used. In addition, the procedure shall be designed such that it can be carried out in an unambiguous way, replicated, and subjected to a validation and/or verification study.

| | |
|---|---|
| Findings from 19 FEB 10 Assessment | Please see the findings and CARs related to monitoring and the ex-ante calculation of baseline emissions. |
| Findings from 13 AUG 10 Assessment | Same as previous findings. |
| Findings from 15 OCT 10 Assessment | Please see CARs related to monitoring and the ex-ante calculation of baseline emissions. |
| Conformance | Yes ☒  No ☐  N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.9** The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs for the <u>project scenario</u> (ex-post). (VCS 2007.1 6.5.3)

The Assessment should consider:

  i. The choice of algorithms/formulae and/or models used and correctness of their application (e.g. mathematical deficiencies, inconsistencies in calculus of dimensions).

  ii. The appropriateness (adequacy, consistency, accuracy and reliability) of the parameters provided by the methodology.

  iii. The appropriateness of procedures on how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

  iv. Any data gaps:

| | |
|---|---|
| Findings from 19 FEB 10 | The same calculations used to calculate the baseline emissions ex-post are used ex-post as described in section 8.2.2. |

| Assessment | Please see the findings and CARs related to monitoring and the ex-ante calculation of project activity emissions. |
|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. |
| Findings from 15 OCT 10 Assessment | Same as previous findings. |
| Conformance | Yes ☒      No ☐      N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.10** The methodology shall contain procedures that result in a conservative estimation of the sum of the <u>project emissions</u> within the project boundary (ex-post), taking into account the uncertainties associated with the data and parameters used.  In addition, the procedure shall be designed such that it can be carried out in an unambiguous way, replicated, and subjected to a validation and/or verification study.

| Findings from 19 FEB 10 Assessment | The methodology does not contain any systematic issues that would render the project scenario calculations inherently not conservative. The methodology is designed in a way that makes it replicable and possible to validate. |
|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. |
| Conformance | Yes ☒      No ☐      N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.11** The methodology shall provide steps to calculate the <u>net GHG benefit of the project</u> ex-post. The methodology shall state the criteria, procedures and/or methodologies (calculation steps) for quantifying GHG emission reductions and removal enhancements during project implementation. GHG emission reductions or removal enhancements shall be quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario. (VCS 2007.1 6.5.3)

| Findings from 19 FEB 10 Assessment | Section 8.3 of the methodology (page 117) provides equation 8-4 to calculate the ex-post net GHG benefit of the project. The input data is derived from the monitoring plan. This was found to be acceptable. |
|---|---|
| | However the sentence, "Adjustments must be assessed and validated by the body who verified the project" is not necessary and could lead to confusion. Different bodies may be involved in project validations and subsequent verifications. |
| Findings from 13 AUG 10 Assessment | The steps to calculate the VCUs to be issued were found to be acceptable. |
| | Project Registration and VCU Issuance Process Version v1.2 explains that ex-post calculation of emissions reductions must be presented in a monitoring report and be subject to verification. Thus, the text on p102, that mentions emissions reductions being presented in the VCS PD, and being subject to validation and verification is not correct. Only ex-ante estimates and the project |

| | design are subject to validation. (Forms part of **CAR 52/10**) | | |
|---|---|---|---|
| Findings from 15 OCT 10 Assessment | The language in section 1.2.4 (including equation 1-3) has been changed to align with VCS definitions of carbon credits and VCUs. (This addresses one part of **CAR 52/10**) | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

**5.12** The methodology shall provide the steps for calculating the number if VCUs to be issued at any given verification event, considering net GHG reductions, leakage, risk buffer credit deduction and any other deductions or alternations that may be needed.

| | | | |
|---|---|---|---|
| Findings from 19 FEB 10 Assessment | Eqn 1-2 (page 12) calculates the number of VCUs to be issued as well as the number to be issued on an annual basis. If the monitoring event took place at a frequency less than annually, the annual emissions would need to be summed. The methodology does not explicitly make this clear, but it is implicit. (**OBS 19/10**) | | |
| Findings from 13 AUG 10 Assessment | Equation 1-3 calculates the VCUs to be issued pre-buffer deduction. Whilst the equations are logical, the language does not exactly align with that of the VCS, which could cause potential confusion. The VCS talks about "carbon credits" being issued, and some of these being retained in the buffer account (VCS Guidance for AFOLU Projects p18). VCUs are the tradable credits issued. As such it is incorrect for Equation 1-3 to calculate the VCUs that are issued, when some of these are actually only credits that will need to be retained in the buffer. (Forms part of **CAR 52/10**)<br><br>The frequency of monitoring is now clear. | | |
| Findings from 15 OCT 10 Assessment | The language in section 1.2.4 has been changed to align with VCS definitions of carbon credits and VCUs. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

### *VCS Specific Requirements for Emissions (ex-ante and ex-post)*

**5.13** Based on selected or established criteria and procedures, the methodology shall enable the quantification of GHG emissions and/or removals separately for:

    i.    each relevant GHG for each GHG source, sink and/or reservoir relevant for the project; and

    ii.    each GHG source, sink and/or reservoir relevant for the baseline scenario. (VCS 2007.1 6.5.2)

| | | | |
|---|---|---|---|
| Findings from 19 FEB 10 Assessment | GHG's and the sources and sinks are calculated separately. | | |
| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |

| CAR/OBS | No CARs or OBS raised. |
|---------|----------------------|

**5.14** When highly uncertain data and information are relied upon, the methodology shall ensure the selection of assumptions and values available to the project developer do not lead to an overestimation of GHG emission reductions or removal enhancements. (VCS 2007.1, 6.5.2)

| Findings from 19 FEB 10 Assessment | See **CAR 38/10**, the methodology lacks a systematic approach to data selection; therefore, there is a possibility of project developers selecting inappropriate variables. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | The revised methodology has improved guidance for data selection. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

**5.15** The methodology shall estimate GHG emissions and/or removals by GHG sources, sinks and reservoirs relevant for the project and relevant for the baseline scenario, but not selected for regular monitoring. (VCS 2007.1, 6.5.2)

| Findings from 19 FEB 10 Assessment | The methodology demands the periodic checking of all parameters, so in effect all are subject to regular monitoring and this criterion therefore does not apply. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
| Conformance | Yes ☐ | No ☐ | N/A ☒ |
| CAR/OBS | No CARs or OBS raised. | | |

**5.16** The methodology shall establish and apply criteria, procedures and/or methodologies to assess the risk of a reversal of a GHG emission reduction or removal enhancement (i.e. permanence of GHG emission reduction or removal enhancement) (VCS 2007.1, 6.5.2).

| Findings from 19 FEB 10 Assessment | After Rainforest Alliance held a discussion with Jerry Seager from the VCS it was acknowledged that the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination, which would form part of a VCS project would adequately account for this criterion. |
|---|---|
| | In section 7.2 of the methodology (page 7.2) the developers have instructed project developers to use the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination. This is appropriate. |
| | In the following sections, 7.2.1, the steps from the Tool are summarized. This is unnecessary, and has led to the introduction of ambiguity. The following are some examples: |
| | Table 7-2 introduces a new term, "risk category" not found in the VCS tool. The VCS uses the term "Risk Factor" to define what the methodology defines as "risk category". The Methodology uses the term "risk factor" to denote what the |

| | VCS tool refers to as "risk rating". Table 7-2 uses different names in its "risk categories" from those found in the Tool, which makes cross referencing difficult. The Methodology uses different default risk ratings compared to those found in the VCS Tool. For example, in table 6 of the VCS tool, if there is illegal logging in the area, and no forest guards are employed, a LtPF project must receive a 'high' risk rating for the 'illegal logging potential' risk factor. In the methodology the default risk factor in this situation is said to be 'low', with no explanation for this deviance being provided. |
|---|---|
| | In section 7.2.2 it is stated that risk factors should be weighed together. However, the VCS Tool on paragraph 17, page 8 states that: |
| | "In the case of IFM projects, the factor with the highest rank determines the project's overall risk rating and shall be used to determine the required buffer." (**CAR 45/10**) |
| Findings from 13 AUG 10 Assessment | In section 7.2.4 the VCS tool is simply referenced, which eliminates all previous issues. This is acceptable and closes **CAR 45/10**. |
| Conformance | Yes ☒        No ☐        N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.17** If applicable, the methodology shall provide guidance for the selection or development of GHG emissions or removal factors that:

  i.     are derived from a recognized origin;

  ii.     are appropriate for the GHG source or sink concerned;

  iii.     are current at the time of quantification;

  iv.     take account of the quantification uncertainty and are calculated in a manner intended to yield accurate and reproducible results; and

  v.     are consistent with the intended use of the VCS PD or monitoring report as applicable (VCS 2007.1, 6.2.5).

| Findings from 19 FEB 10 Assessment | The methodology does not contain a systematic approach to ensuring all emissions factors needed meet the criteria above. (**CAR 38/10**) |
|---|---|
| Findings from 13 AUG 10 Assessment | **CAR 38/10** has been closed as the methodology has an approach to ensuring the data selected meets the criteria above. |
| Conformance | Yes ☒        No ☐        N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.18** The methodology shall use metric tonnes as the unit of measure and shall convert the quantity of each type of GHG to tonnes of $CO_{2e}$ using appropriate global warming potentials.

| Findings from 19 FEB 10 Assessment | The methodology uses t $CO_2e$ as the unit of measurement and correctly converts between units. The method for applying GWPs to non-$CO_2$ GHGs is provided in Appendix C. However, it is unclear when these are supposed to be used, since no reference is made to them in the methodology. (**OBS 20/10** ) |
|---|---|
| Findings from 13 | Appendix C is now referenced where appropriate. This closes **OBS 20/10**. |

| AUG 10 Assessment | | | |
|---|---|---|---|
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

**5.19** The methodology shall be compatible with the project type specific rules in the VCS Tool for AFOLU methodological issues for the estimation and monitoring of GHG benefits (See II. Step 6, Estimate and Monitor net GHG Benefits, paragraphs 28, 29, 30 & 31)

| Findings from 19 FEB 10 Assessment | Regarding paragraph 28 and 31 of the VCS Tool for AFOLU methodological issues: The maximum number of credits that a project could earn is equal to the average carbon stocks on the land during rotation since regrowth is included in the equations.<br><br>Paragraphs 29 and 30 are not relevant to IFM projects. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

### Quality Control and Uncertainty (ex-ante and ex-post)

**5.20** The IPCC 2006 Guidelines shall be followed in terms of quality assurance/control and uncertainty analysis. (II. Step 6, Estimate and Monitor net GHG Benefits, paragraph 31)

| Findings from 19 FEB 10 Assessment | Section 8.4 provides guidance on quality assurance and control. The section provides appropriate guidance and references IPCC 2006 guidelines. However, it was not clear how the data obtained from carrying out the equations would be used to assess the project against the "target guide for uncertainty level ... a 90% confidence interval which equates to 10% of the estimated emission reduction value" or if indeed it is the intention of the equations to allow such a comparison. For example, what is the output of equation 6-6 used for? (**CAR 46/10**)<br><br>In addition, It was found that the information provided in section 8.4.1 is overly focused on 'plots'. Some monitoring, will not involve plot measurements so the QA/QC section should reflect, more broadly the project activities that will be taking place. (**OBS 21/10**)<br><br>The largest sources of uncertainty introduced into the methodology are the accuracy of the FIR, the allometric equations and BCEFs used. No guidance is provided on how to reduce uncertainty from these sources or validate them. The CDM has established guideline on selecting and testing the applicability of allometric equations, no such approach is taken by this methodology. (**CAR 34/09**)<br><br>The methodology's approach to uncertainty analysis is documented under criterion 5.21 below. |
|---|---|

| | |
|---|---|
| Findings from 13 AUG 10 Assessment | The uncertainty section has been changed significantly since the previous version and now it is in a stand alone section, section 6. The outcomes of section 6 are not used elsewhere in the methodology. The aim of calculating uncertainty is only so that areas of high uncertainty can be identified and be reduced as much as possible. It was not found to be acceptable that projects with any level of uncertainty would be able to issue VCUs. As such it is necessary that a method is used to limit the allowed uncertainty, or credits issued at a given uncertainty level. (Relevant to **CAR 46/10**)

QA/QC guidance that is broader than just plots is found in section 7.3 of the methodology. This closes **OBS 21/10**.

Guidance for validating the inventory data in the existing FIR is provided in Section 3.2.1.1 in order to assess the accuracy of the FIR data and also to reduce uncertainty. Guidance for validating or deriving the wood density, allometric equations (volume and biomass) and BCEFS have been presented in the BSTP-3.1 in Section 7.2.4. This was found to be an improvement; however, the approach for validating BCEFs was not found to be scientifically sound. After a discussion with CP, it was agreed that since no common validation method for BCEFs existed, and the CDM methodologies do also not include BCEF validation, it was acceptable for the methodology to remove this section. (Forms part of **CAR 52/10**)

The use of the word, "recommends" (using its common interpretation) creates an internal inconsistency in the document (p97), which would lead to ambiguity as to the necessity of project proponents to carry out validations of parameters. CP agreed that this required a small change to the wording. (Forms part of **CAR 52/10**)

In addition, this Methodology also provides guidance for selecting the appropriate literature or default value wherever they are presented in the calculation flow. This closes **CAR 34/09**. |
| | The steps to validate BCEFs have been removed from section 7.2.4. (This addresses one part of **CAR 52/10**)

Section 6.6 has been added to the revised methodology. This section makes a deduction for uncertainty based on a threshold of 10% allowable uncertainty. This was found to be acceptable. This closes **CAR 46/10**.

The word "recommends" has been changed to "required" on p97, which is now p98, thus the internal inconsistency has been removed, (This addresses one part of **CAR 52/10**) |
| Conformance | Yes ☒   No ☐   N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**5.21** The methodology shall provide guidance for the establishment and application of quality management procedures to manage data and information, including the assessment of uncertainty, relevant to the project and baseline scenario. (VSC 2007.1, 6.5.4)

| | |
|---|---|
| Findings from 19 | Section 6 (page 85) describes the approach to estimating uncertainty. The |

| | |
|---|---|
| FEB 10 Assessment | approach was found to be acceptable. However, in Equation 6-6 a value is multiplied by 100%. This is not mathematically correct. It is assumed that the intention was to multiply by 100 to convert a fraction to a percentage. (**CAR 13/09**) |
| Findings from 13 AUG 10 Assessment | The methodology no longer multiplies by percentages. |
| Conformance | Yes ☒　　　　　　　　No ☐　　　　　　　　N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

## 6　Leakage:

The methodology shall contain an approach for calculating leakage that is appropriate and adequate.

**6.1**　Leakage is defined by The VCS Tool for AFOLU Methodological Issues as, "any increase in greenhouse gas emissions that occurs outside a project's boundary (but within the same country), but is measurable and attributable to the project Activities". Its effects on all carbon pools shall be assessed and significant effects taken into account when calculating net emission reductions. Accounting for positive leakage is not allowed. (II. Step 5, Assess and Manage Leakage, paragraph 18).

The methodology shall assess and account for leakage in accordance with the project type specific rules in VCS Tool for AFOLU methodological issues (II. Step 5, Assess and Manage Leakage, paragraphs 20, 21, 22).

The methodology shall identify all possible leakage sources and provide mathematically correct procedures to quantify their effect on the net GHG benefits of the project.

| | |
|---|---|
| Findings from 19 FEB 10 Assessment | The assessment and management of leakage is done in section 5 (page 79). The methodology considers both activity shifting leakage and market leakage. |
| | Section 5.2.1 calculates activity shifting leakage. Within the title of the section and throughout, it is assumed that the leakage comes from the "Project Developer". It may not be the case that the Project Developer was the one who was going to do the logging, so this assumption is not appropriate. |
| | Activity shifting leakage could occur under two circumstances, 1) the agent who was going to harvest the project area moves to another forest area or 2) the agent intensifies harvesting activities on existing land to compensate for the reduced harvest in the project area. The methodology was not found to distinguish clearly between these. Furthermore, the methodology would only ever result in a reduction being made for activity shifting leakage if the agent declared that they were harvesting over the legal limit on their lands. It is unlikely an agent would declare illegal practices; then receive a leakage deduction on their carbon project. In the case where the project developer is not the agent that was going to do the harvest it could be difficult to discover illegal practices. |
| | The leakage methodology does not account for the fact that there are a number |

| | |
|---|---|
| | of different types of agents of deforestation (as listed in table 1-1, page 7). The methods needed to track leakage would be different depending on the agent. The methodology does not consider this.

Whilst the methods for arriving at the volume of leaked harvest were not found to be acceptable, the calculation of emissions once that value is known is acceptable.
(**CAR 18/09**)

Rainforest Alliance has contacted the VCS to seek clarification on which entities require monitoring for activity shifting leakage, in particular the case where the project developer is an NGO with no logging interests, but the previous owner, and baseline logging agent is known. Clarification has also been sought regarding the extent to which a methodology needs to provide calculation steps if the VCS default market leakage table is used and what number the market leakage percentage has to be applied to. |
| Findings from 13 AUG 10 Assessment | The assessment and management of leakage is done in section 5 (page 74). The methodology considers both activity shifting leakage and market leakage.

The methodology now defines activity shifting leakage as those emissions due to the project proponent logging outside the project area above their average historical intensity (5.2.1) or from new areas (5.2.2).

In order to detect an increase in logging intensity and class it as leakage the methodology compares a historical average logging volume from existing lands with the volume during the project (section 5.2.1). Given that the lands would historically, and in the future be logged according to approved management plans then this method would detect changes in plans that led the historical average to be exceeded.

In addition, it was found that the methodology would benefit from a clarification in section 5.2.1 to state that only lands not part of the project area must be considered in the analysis and subsequent equations.

Section 5.2.2 which detects shifted logging operations states that new harvesting operations starting "directly" after the start of the project were to be counted as leakage. When questioned on this, CP acknowledged this was a mistake and that, in fact, any new land logged during the crediting period must be counted as leakage. A typo was found in the parameter table beneath Eqn 5-9, "intensification" was not supposed to be referred to. (Forms part of **CAR 52/10**)

The approach for calculating the shifted baseline emissions was found to be appropriate and conservative. To match Eqn 3-39, it would be an improvement if the words "harvest" and "harvesting" were used consistently in the parameters.

The approach to market leakage simply refers to the VCS documentation on the subject. This is acceptable. The issue of how to calculate market leakage will need to be tackled by each user of the methodology and pass through the double approval process at the first issuance of credits. |

| | Rainforest Alliance had a concern that if activity shifting leakage were to occur, and a market leakage factor was also applied, then some leakage would be double counted. CP did not believe this to be the case. If it does happen it is conservative so RA accepts the overall format of using activity shifting and market leakage this way, without the consideration of overlap. | | |
|---|---|---|---|
| Findings from 15 OCT 10 Assessment | The revised methodology is clear on the timescale in which shifted operations are counted as leakage, and the typo beneath 5-9 has been corrected. (This addresses one part of **CAR 52/10**) | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

**6.2** The methodology shall account for market leakage if timber production is significantly affected, even if the illegal production is prevented or reduced. (II. Step 5, Assess and Manage Leakage, paragraphs 23, 24, 25, 26 and 27)

Note that the VCS provides a default table of market leakage deductions that can be referenced by a methodology.

| | | | |
|---|---|---|---|
| Findings from 19 FEB 10 Assessment | Section 5.3 contains the steps to determine if any market leakage has occurred.<br><br>The use of the standard VCS approach to market leakage is acceptable.<br><br>The alternative methodology proposed in section 5.3.2 was not found to be acceptable. There are many reasons why the volume of merchantable logs sold at a national level could fluctuate, yet no mechanism is proposed to attribute the fluctuations to the project. If the approach proposed in section 5.3.2 was used a project would be vulnerable to incurring leakage values significantly greater than the project GHG benefits if, for unrelated reasons national log production increases. (**CAR 18/09**) | | |
| Findings from 13 AUG 10 Assessment | The methodology now only references the VCS approach. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

## 7 Monitoring:

**7.1** The methodology shall select or establish criteria and procedures for selecting relevant GHG sources, sinks and reservoirs for either regular monitoring or estimation (VCS 2007.1, S6.5.1).

| | | | |
|---|---|---|---|
| Findings from 19 FEB 10 Assessment | The methodology has a systematic approach, presented in the tables in section 8 for selecting which parameters to monitor. | | |
| Findings from 13 AUG 10 Assessment | The methodology has a systematic approach, presented in the tables in section 7 for selecting which parameters to monitor. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |

| CAR/OBS | No CARs or OBS raised. |
|---|---|

**7.2** The methodology shall contain a procedure to monitor and document the implementation of the project on land areas within the project boundary.

| Findings from 19 FEB 10 Assessment | In section 8.2.1.1, 4.4 and 4.5, the approach to monitoring the project activities within the project area are defined. In effect the project should lead to no harvesting occurring in the project area. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Same conclusion as previous findings. | | |
| Conformance | Yes ☒ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

**7.3** The methodology shall contain appropriate and correct sampling design procedures for the ex-post calculation of actual GHG emissions and determination of the ex-post baseline GHG emissions by sinks (if required). The sampling design may, include determination of number of plots, and plot distribution, etc.

| Findings from 19 FEB 10 Assessment | Section 8.2 (page 96) describes the procedure for establishing and using permanent sampling plots (PSP). The methodology described for installing and collecting data from the plots was found to be appropriate however, some gaps existed. |
|---|---|
| | It was not understood why, if data was being collected on merchantable trees there would be no checks carried out to compare this data and the FIR to ensure the FIR was conservative and accurate in its reporting of merchantable volume. (**see CAR 36/10**) |
| | In addition, it was thought that measuring the distance and direction of a tree to the centre of the plot at regular intervals was unnecessary. Trees can be marked so re-measurement is not needed. (**OBS 22/10**) |
| | The measurement methodology provides a definition of merchantable trees in step 5 of section 8.1.2.3; however, it is not clear that factors beyond species, such as form or access which may affect the definition of what is merchantable will be considered. (See findings related to **CAR 24/09**) |
| | The approach to documenting the monitoring requirements for the baseline, project implementation and leakage was found to be exhaustive. It allows the use of data gathered through monitoring to calculate the ex-post GHG emissions reductions. However, some ambiguities were found in the monitoring section of the methodology. |
| | The re-calculation, reviewing literature values and measurements were rolled together into large tables making it difficult to see exactly what was being monitored (as opposed to just re-calculated). For example, for the long term harvest wood product emissions, the monitoring activity is to check two literature values for updates (table 8-4, page 105), but this information is somewhat buried in the table. All the other parameters in the table require re- |

| | calculation, presumably using the up to date literature values. (**OBS 23/10**)

In section 8.2.1.2.4 the monitoring required to calculate the carbon 'lost' due to growth increment foregone is documented. The table only includes the re-calculation of values and does not mention the measurement of trees in the PSPs. The PSPs are mentioned as a data source in the text above, but no calculation steps are shown to link the data gathered in the PSPs to the equations for growth increment foregone. The text also assumes that the results of monitoring would always yield a positive growth value. This may not always be the case in any one monitoring period if a large tree dies or falls. (**CAR 19/09**) |
|---|---|
| Findings from 13 AUG 10 Assessment | The FIR is now validated with plots, see section 3.2.1. (relevant to **CAR 36/10**)

Tree location measurement is no longer required in the methodology closing **OBS 22/10**. Carbon Planet have revised the tables in Section 7 Monitoring (in BSTP-3.1), previously Section 8 in BSTP-3), to have three tables: Table 7-1 Parameters obtained from literature to be reviewed or verified, Table 7-2 Parameters to be measured once (not monitored) and Table 7-3 Parameters to be monitored, in order to clarify between parameters that need to be measured and those that need to be reviewed in the literature. This closes **OBS 23/10**.

While addressing **OBS 23/10**, Section 8.2.1.2.4 (in BSTP-3) has been removed. Thus CAR 19/09 is no longer relevant. However, Step 1 of Section 3.3.4 provides a detailed procedure to account for the carbon in the growth foregone due to selective logging. |
| Conformance | Yes ⊠ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

**7.4** The monitoring plan in the methodology shall be compatible and consistent with the proposed baseline methodology and be described in an adequate and transparent manner.

| Findings from 19 FEB 10 Assessment | The monitoring methodology is compatible with the baseline scenario. | | |
|---|---|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. | | |
| Conformance | Yes ⊠ | No ☐ | N/A ☐ |
| CAR/OBS | No CARs or OBS raised. | | |

*Note: The monitoring methodology and results will determine the ex-post emissions estimation for the baseline, project emissions and leakage which are assessed in the sections above.*

## 8   Data and parameters:

**8.1**   The methodology shall have appropriate procedures for how project participants should select any parameters in cases where these are not provided in the methodology (e.g. from official statistics, expert judgment, proprietary data, IPCC Good Practice Guidance for LULUCF, commercial data and scientific literature.

| | |
|---|---|
| Findings from 19 FEB 10 Assessment | Throughout the methodology, clear guidelines on what constitutes a suitable source for data and parameters are not provided. Examples of how to reference suitable data sources can be found in the data and parameters tables of CDM methodologies. (**CAR 38/10**) |
| | A reference list is provided in section 9 of the methodology. Some of the references of the list are not referenced in the methodology (Chave *et al.*, and Hoover). If these are meant to be used as general reference it would be clearer to separate them in the list. (**OBS 24/10**) |
| | Table B-1 gives a density range based on tropical regions that is to be used in section 3.2.1.1.1 to calculate carbon in merchantable logs using the wood density method.  Though the application of these data requires a finite number, not a range, no guidance is given in the text as to how to use the table to determine a conservative estimate.  (**CAR 38/10**) |
| | It is not clear how the data was gathered from the reference cited (http://www.fs.fed.us/global/iitf/pubs/gtr_so088_1992.pdf) to produce the table. The reference, in Figure 1, shows the mean value for Africa to be 0.5 t.d.m. m⁻³, yet table B-1 shows it as 0.58. The ranges also do not obviously correlate with the numbers in the figures of the publication. It may be that the reference, "Brown, in Reyes et al., 1992" was not intended to reference the Reyes document directly, in which case the actual source must be made clear. In general, the exact source of many of the default data was not clearly referenced (page, table, figure number etc). (**CAR 44/10**) |
| Findings from 13 AUG 10 Assessment | The methodology now provides suitable guidance for the selection of literature data. |
| | The reference list has been updated to close **OBS 24/10**. |
| | Appendix B, Section B.1 has been revised to eliminate the previous discrepancy between the data of mean wood density for Africa in Table B-1 and its source Reyes et al. (1992).  The figure has been changed from 0.58 to 0.50 as presented in the literature.  In addition, the third column in Table B-1 involving density range has been removed as this was found to be confusing to the reader and not required for data selection.  Relevant to **CAR 38/10**. |
| | Documents are now well referenced, closing **CAR 44/10**. |
| Conformance | Yes ☒          No ☐          N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

**8.2** The methodology shall present equations in a clear, consistent, mathematically correct format which allows data to be traced through them.

| Findings from 19 FEB 10 Assessment | The concept of time was not found to be consistently used throughout the equations. In section 1.3.4 it is stated that the calculations provide a method for accounting the annual number of VCUs that should be issued to the project developer. In equation 1-2 where this value is calculated, all parameters are described as being 'net annual' amounts with units of $t$ $CO_2e$ $yr^{-1}$. Likewise equation 3-1 follows the same format. However from Eqn 3-2 onwards the reference to 'net annual' amounts is dropped making the value of all parameters ambiguous. (**CAR 42/10**) |
|---|---|
| | Most parameters are stated as being, "at time, $t$" however, the concept of time and its flow through the life of a project (and how that relates to $t$ is not defined). Approved CDM methodologies already have standard means for defining $t$ and time in equations. (**CAR 42/10**) |
| | The way in which parameters were named in equations was found to be inconsistent. Although not described in the methodology it appears that there is a system for labelling parameters that operates as follows: |
| | In a parameter such as $C_{baseline,j}$ |
| | Where C = X |
| | It seems to be that; |
| | X = a per year value (with the exception of when X = A)<br>X' = a per year $CO_{2e}$ value<br>X'' = an absolute value (e.g. $m^3$)<br>$\bar{x}$ = a per ha value (sometimes the description calls these average values, sometimes not – even for same parameter).<br>The system of using $\bar{x}$ to denote a "per ha" value, was considered confusing since in mathematics it has a common meaning which is the sample mean. Exceptions to these general rules were also found (see Eqns; 3-29, 3-51). (**CAR 43/10**) |
| | The description of parameters in the boxes underneath equations was found to be inconsistent in numerous equations, and the cause of ambiguity. In some cases some parameters are described differently in the tables underneath different equations (Some examples: compare $\bar{V}_{merch,j,t}$ in equations 3-3 and 3-4, compare $\bar{C}_{AGB\_merch,t}$ in equations 3-26, 3-15 and 3-10, compare $C'_{baseline,t}$ in equations 1-1 and 3-1, compare $C'_{degradation,t}$ in equations 1-1 and 3-1). (**CAR 43/10**) |
| | In some cases the unit was correct, but the description appears to be incorrect (See Eqn 3-20, "*Carbon* in merchantable trees"… and "Average *Carbon* stock in ….", see references to "logs" in descriptions of parameters for Eqn 3-10, see $C_{AGB\_merch,t}$ in Eqn 3-29 where the description does not mention that it is for merchantable trees and it is somewhat ambiguously worded, see Eqn 4-5 and 4-6 where $D_{n\_flight,y,t}$ and $D_{plan\_flight,y,t}$ are calculated as per annum values, but this is not reflected in the descriptions of these parameters) (**CAR 43/10**) |

| | |
|---|---|
| | In some cases the units presented did not match the description or equation (See Eqn 3-14; "t C ha$^{-1}$", and 3-11; "tree species$^{-1}$" which should be a "per ha" value). (**CAR 43/10**)<br><br>In some cases the unit and description appear to be incorrect (see Eqn 3-51; description and units for $\overline{B}_{AGB\_merch,\ t1}$). (**CAR 43/10**)<br><br>In some cases parameters in the equation are not defined below (See $f_i$ in Eqn 3-19, $C_{DWdecay,t}$ in Eqn 3-27a) and in some cases there are parameters in the box below that do not appear in the equation above (See $C_{AGB10\_z\_merch,t}$ in the box beneath Eqns 3-33a, b and c). (**CAR 43/10**)<br><br>Subscripts in equations are not used in a consistent manner, which can make interpreting parameters difficult. For example, in Eqn 3-19 the subscript 'i' is used to denote species and 's' to denote sample plot, whereas in Eqn 8-1 'sp' is used to denote sample plot and it appears that 'sp' may also be used to denote species, although this may be a typo.  In equation 3-41, the parameter $C_{ltHWPin,t}$ is described as "carbon going into the long-term harvested wood products pool from the specified forest product type…".  Other product-type specific parameters are denoted by the use of the subscript "p" yet this parameter does not follow this standard (see also Eqn 3-44).  (**CAR 43/10**)<br><br>In some cases there is a difference between the subscripts in the equation and those in the parameters box below (See Eqn 3-17; $A_{s,j,t}$,, Eqn 3-50; $C_{growth\_foregone,t}$, Eqn 8-2; $t_{stat}$). (**CAR 43/10**)<br><br>Footnotes are not always correctly referenced (See reference to footnote 6 in equation 3-33c). (**CAR 43/10**)<br><br>In section 8 of the methodology there are a series of tables that contain parameters, descriptions and units (linked to those found in the equations). Numerous parameters have different descriptions in these tables compared to the definitions given within previous sections of the methodology.  For example, $BCEF_R$ is described differently in table 8-3 than in Equation 3-32.  Additionally, some parameters do not have the same units in the tables in section 8 when compared to the equations earlier in the methodology, for example in table 8-3 $C_{merch,t}$ is labeled with t C ha$^{-1}$; however, the table refers to Equations 3-25 and 3-28 where 3 $C_{merch,t}$ has units of t C yr$^{-1}$. (**CAR 43/10**) |
| Findings from 13 AUG 10 Assessment | The use of time is now clearer in the methodology. Relevant to **CAR 42/10**.<br><br>The specific issues raised in the previous report related to parameters and parameter descriptions have been addressed by Carbon Planet.<br><br>However, a sample of table 7-1's parameters was checked and errors were found.  The table incorrectly states that $BCEF_s$ is used in equations 4-21, 5-8 and 5-9.   The table fails to state that BEF is used in equation 4-21. $V_{PP\_Branch\_trim,t}$ was not found to be used in 5-10 (or anywhere in the methodology). (relevant to **CAR 52/10**) |
| Findings from XX SEP 10 Assessment | Table 7-1's references have been corrected in the revised version of the methodology. (This addresses one part of **CAR 52/10**) |

| Conformance | Yes ☒ | No ☐ | N/A ☐ |
|---|---|---|---|
| CAR/OBS | No CARs or OBS raised. | | |

## 9     <u>Adherence to the project-level principles of the VCS Program:</u>

The methodology shall adhere to the project-level principles of the VCS Program (VCS 2007.1, 5.1), summarised below and the full principals at the top of this report.

**9.1**     The methodology shall be compatible with the VCS project level principles, as explained in more detail in section 1.3 of this report. These principles are relevancy, completeness, consistency, accuracy, transparency and conservativeness.

| Findings from 19 FEB 10 Assessment | The methodology was found to contain information that was relevant. The methodology was complete. The methodology was found not to be consistent in the way it presented data, parameter and specific terms. There was a concern around the use of forest inventory reports, BCEFs and allometric equations with no guidance on validating them, which could lead to inaccuracy. The methodology was broadly transparent. |
|---|---|
| Findings from 13 AUG 10 Assessment | The broad concerns that were stated above have been addressed in the revised methodology.<br><br>It was decided that at a high level, and in spirit, the methodology adhered to the project-level principles of the VCS program but there are still a number of open CARs which must be addressed before this criterion can be considered met.<br><br>A number of minor issues were found during the audit. These require correction.<br><br>On page 30, section 3.2.1.3 it is stated that: "If the FIR or an equivalent document provides field inventory data on the diameter at breast height (DBH) and tree height (H) of the growing stock at the sample plot level s…". Figure 3-1 shows that species data is also required, but this is not mentioned here. (Forms part of **CAR 52/10**)<br><br>The parameter fv in the table is missing the right parentheses, I the parameter table beneath Eqn 3-10. (Forms part of **CAR 52/10**)<br><br>It was noted that the parameter definition for B(branch_trim) contains the term "coarse woody debris" (eqn 7-4 and Appendix A). Step 1 of Section 7.2.4.4 only includes the measurement of large branches, and does not include a sample of coarse woody debris, leading to an internal inconsistency. (Forms part of **CAR 52/10**)<br><br>The VCS document, 'Project Registration and VCU Issuance Process Version v1.2' explains that ex-post calculation of emissions reductions must be presented in a monitoring report and be subject to verification. The text on p102 of the methodology, that mentions emissions reductions being presented in the VCS PD, and being subject to validation and verification is not correct. Only ex-ante estimates and the project design are subject to validation. (Forms |

| | part of **CAR 52/10**). |
|---|---|
| | Equation 1-3 calculates the VCUs to be issued pre-buffer deduction. Whilst the equations are logical, the language does not exactly align with that of the VCS, which could cause potential confusion. The VCS talks about "carbon credits" being issued, and some of these being retained in the buffer account (VCS Guidance for AFOLU Projects p18). VCUs are the tradable credits issued. As such it is incorrect for Equation 1-3 to calculate the VCUs that are issued, when some of these are actually only credits that will need to be retained in the buffer. (Forms part of **CAR 52/10**). |
| Findings from 15 OCT 10 Assessment | Section 3.2.1 now mentions species data and is thus consistent with Figure 3-1. (This addresses one part of **CAR 52/10**)<br><br>The parameter $f_v$ in the table beneath Eqn 3-10 is no longer missing the right parentheses. (This addresses one part of **CAR 52/10**)<br><br>The definition of the branch trim parameter has been updated in appendix A and eqn 7-4. (This addresses one part of **CAR 52/10**)<br><br>The PD, in section 7.4 now has language that correctly refers to results being put in a monitoring report for subsequent verification. (This addresses one part of **CAR 52/10**)<br><br>The language in section 1.2.4 (including equation 1-3) has been changed to align with VCS definitions of carbon credits and VCUs. (This addresses one part of **CAR 52/10**) |
| Conformance | Yes ☒       No ☐       N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

## 10  Special case of previous rejection from other GHG program

10.1 Methodologies rejected by other GHG Programs, due to procedural or eligibility requirements where the GHG Program applied has been approved by the VCS Board; can be considered for VCUs but Methodology Developers in this case shall:

    i.   document the methodology; and

    ii.   clearly state in its VCS PD all GHG Programs for which the methodology has applied for approval and why the methodology was rejected, such information shall not be deemed commercially sensitive information; and

    iii.   provide the VCS Program verifier with the actual rejection document(s) including explanation of why the methodology was rejected (VCS 2007.1, S6.1).

| | |
|---|---|
| Findings from 19 FEB 10 Assessment | The methodology has not been rejected under any other program. |
| Findings from 13 | Same as previous findings. |

| AUG 10 Assessment | |
|---|---|
| Conformance | Yes ☒ No ☐ N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

## 11 Public Review

**11.1** The Methodology shall be posted for public comment in accordance with VCS guidelines. The methodology developer shall demonstrate how it has taken due account of all and any such comments.

| Findings from 19 FEB 10 Assessment | All but one of the public review comments had been addressed in the last version of the methodology. The methodology now adequately addresses the comment by A Sen has now been addressed. The methodology is clearer for areas where commercial harvesting is the only driver of degradation, areas where smaller scale community biomass extraction occurs will be excluded from the project area. It is not the intention of this methodology to be able to quantify small scale extraction. |
|---|---|
| Findings from 13 AUG 10 Assessment | Same as previous findings. No new comments have been received. |
| Conformance | Yes ☒ No ☐ N/A ☐ |
| CAR/OBS | No CARs or OBS raised. |

## Appendix C: 19 NOVEMBER 2009 METHODOLOGY ASSESSMENT REPORT

See separate file; Carbon Planet Methodology Assessment VCS 03 November 09

--End of Report--