

VCS SECTION 7 REVIEW REPORT

Project ID	981
Project Name	ADPML PORTEL-PARA REDD PROJECT
Project Proponent	Avoided Deforestation Project (Manaus) Limited (“ADPML”)
Methodology	VM0015 v1.1
Sectoral Scope(s)	14. Agriculture, Forestry, Land Use
Validation/Verification Body (VVB)	Det Norske Veritas (USA) Inc (DNV-GL)
Registry	Markit

Assessment Criteria	VCS Standard v3.3, VCS AFOLU Requirements v3.3, VM0015 Version 1.1, “Methodology for Avoided Unplanned Deforestation”
Date of First Issue	22 August 2014
Date of Final Issue	<i>Pending</i>

Summary:

A review of the ADPML PORTEL-PARA REDD PROJECT has been initiated by VCS in accordance to its responsibilities set out in Section 2.5.6 of the *VCS Program Guide* and carried out in conformance with the relevant procedure contained in Section 7 of the *VCS Registration and Issuance Process*.

The accuracy review has raised one assessment finding detailed below. The VVB, in coordination with the project proponent, is hereby required to provide a response to the assessment finding presented in section 1. The assessment finding must be addressed to the satisfaction of VCS. As per Section 7 of the *VCS Registration and Issuance Process*, further issuance of VCUs from the project is temporarily suspended during this review process.

1 ASSESSMENT FINDINGS

Finding 1

Section 3.2.6 of the VCS Validation Report Template v3.0 requires that the VVB identify, discuss and justify the quantification of baseline emissions, project emissions and leakage, as well as the summary of GHG emission reductions or removals.

Section 3.2.1 of the project description states that above-ground biomass for a DBH ≥ 10 cm was calculated using Overman's equation corrected for biomass moisture content.

The validation report does not identify or otherwise discuss this conversion of Overman's equation.

The conversion, $DB = (\alpha(DBH)^\beta) / (1-M)$, appears to be calculating for dry weight (DB). However, the original Overman's equation $DW = (\alpha(DBH)^\beta)$ already calculates for dry weight. The purpose and accuracy of this conversion is therefore unclear. Furthermore the division of $(1-M)$ in the equation appears to lead to erroneous results.

The VVB is requested to please clarify how it assessed the appropriateness of this conversion.

VVB Response:

DNV GL agrees with the finding of the VCS that there is an error in the equation used, however we believe that the correct equation is the standard form $B = \alpha(DBH)^\beta$ as originally published by Overman et al., without any form of moisture correction.

After reviewing the papers again, it appears that the Overman et al. equation predicts dry biomass. The Araujo et al. 1999 paper cited by the project proponents validated the most appropriate equation for biomass estimates in the Belem region and found that the Overman equation was the most appropriate equation. However Araujo et al. worked with fresh biomass data for their assessments, so corrected the Overman predictions by dividing by $(1-M)$ in order to get a wet biomass estimate. Since the VCS methodology calls for dry biomass, the corrected form of the equation adopted by Araujo et al. is not appropriate. Rather, the project should have directly used the dry biomass equation as published by Overman et al. Though the project proponent demonstrated by the Araujo et al. 1999 publication that the Overman equation was appropriate, the modification to the equation by Araujo et al. to predict fresh, rather than dry biomass was not consistent with the selected VCS methodology and thus should not have been used.

DNV GL apologize that it did not catch this subtle but highly material distinction previously. The project proponents did utilize the equation exactly as reported by Araujo et al, which DNV GL validated in the spreadsheets they provided. However, DNV GL failed to realize that Araujo et al were reporting fresh biomass, which is less common in the literature than dry biomass.

The PP has revised the PDD in response to the above finding. The below table lists the PDD deviation and DNV GLs assessment and conclusion. DNV GL has updated the verification report with this additional information.

	Reason for deviation	Assessment by DNV GL
1) Correction of the Overman's allometric equation used at validation in order to account only for dry biomass	In the original PD the project applied a correction factor for fresh to dry biomass which was not required based on the fact that the Overman equation is already based on dry biomass	DNV GL has reviewed as part of the CAR 16 the Araujo et al. 1999 paper that was cited as reference in the PD and confirmed that the Araujo et al 1999 reason for modifying the Overman et al equation was that the study used fresh biomass. In line with the VCS requirements which require the use of dry biomass data the correction factor applied in Araujo et al 1999 should not be applied. DNV GL has assessed the corrected equation used in its spreadsheets and confirms that it now correctly applies the Overman et al equation using dry biomass. The identified deviation is in line with methodology VM0015, version 1.1
2) Update of carbon stocks and carbon stock change factors calculations based on the biomass results from the corrected Overman equation	In response to the identification that the Overman equation was incorrectly applied the Carbon Stock dated was required to be updated throughout the project data.	DNV GL re-assessed the spreadsheet and all formula that uses the data derived from the correct Overman equation. DNV GL confirms that the changes to the modified carbon stock are only a result of the correct application of the Overman equation. The identified deviation is in line with methodology VM0015, version 1.1
3) Update of calculations to determine significance of the pool "Wood Products" using the updated net carbon stock	In the original PD the project assumed that 30m3/ha (maximum legal volume that can be harvested) would be harvested however following further literature	DNV GL has assessed the provided publications of the project developer as well as assessed inventory data. DNV GL concluded that indeed applying a 30m3/ha harvesting

change factors and a logging intensity factor closer to the reality of selective illegal logging in the region of the project	<i>studies, it was identified that this would be an overestimation and based that there is only 23.99 m3/ha of valuable species in the area a new harvesting volume has been selected.</i>	<i>level would not be correct for this project due to the fact that these volume are not available within the project area. DNV GL accepts that an harvesting level between 10 and 20 m3/ha is more realistic based on the overall total of 23.99 m3/ha that is found in the area and that normally not all trees (100% of inventoried tries) will be harvested and inventory data shows that 10.57 m3/ of total 23.99 m3/ha is classed as high economic value (0.03 m3/ha) or medium economic value (10.54 m3/ha) as such accepts that the project demonstrates the significant of the pool based on a maximum of 20 m3/ha.</i> <i>The identified deviation is in line with methodology VM0015, version 1.1</i>
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VCS Response:

Section 3.2.1 of the updated project description applies Overman's equation without any form of moisture correction. Carbon stock and carbon stock change factor calculations appear to be updated based on the corrected Overman equation.

Section 3.4 of the updated project description contains updated significance levels for the wood products pool, using the updated net carbon stock change factors and logging intensity factor.

Section 2.2 of the updated monitoring report details the project description deviations including the correction of Overman's equation and the subsequent updates to the carbon stocks, carbon stock change factors and significance levels for the wood products.

Section 3.2 of the updated verification report contains the VVB assessment of the project description deviations outlined in section 2.2 of the monitoring report. The VVB confirms that the updated project description correctly applies the Overman equation and that the deviation is consistent with the methodology's requirements. The VVB continues to confirm that the spreadsheets and all formulas that uses data derived from Overman's equations have been re-assessed and are correct.

Regarding the updated significance of the wood products pool, the VVB confirms that applying the original harvesting level would be incorrect and justifies the updated significance of the pool based on the lower volume available within the project area.

Considering the above, this finding is closed and no further action is required.

2 MINOR FINDINGS

3 ASSESSMENT CONCLUSION

On 22 August 2014, VCS issued the first round of findings to Det Norske Veritas Climate Change Services AS (DNV).

On 12 November 2014, VCS received DNV's final response and an updated project description, monitoring report and verification report addressing the assessment finding.

On 3 December 2014, VCS closed all findings and no further action was required from the VVB.