



South Asia

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# Methodology Assessment Report

ASSESSMENT OF THE VCS METHODOLOGY:  
“BASELINE AND MONITORING METHODOLOGY FOR  
THE REWETTING OF DRAINED PEATLANDS USED FOR  
PEAT EXTRACTION, FORESTRY OR AGRICULTURE  
BASED ON GESTS”

REPORT NO. 10280SH

09 JUNE 2017

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<b>Methodology Title</b>	Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs	
<b>Version</b>	Version 8/15/2016	
<b>Methodology Category</b>	<b>Methodology</b>	<b>X</b>
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	Module	
	Tool	
<b>Sectoral Scope(s)</b>	Scope 14 (WRC-RWE)	

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**Summary:**

TÜV SÜD South Asia Pvt Ltd (TÜV SÜD) performed the second assessment of proposed Verified Carbon Standard (VCS) methodology “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”.

The assessment was conducted on the basis of the VCS Standard version 3.5, respective guidance documents and clarifications obtained by VCS. The assessment was performed by means of a document review, follow-up interviews, and the resolution of outstanding issues.

Findings raised are summarized in this report and detailed in Annex 1 of the report. A total of 13 Corrective Action Requests and 10 Clarification requests were issued.

No uncertainties arose associated with the assessment.

In summary, TÜV SÜD concludes that the final version of the methodology (Version 8/15/2016) methodology meets current relevant VCS requirements and recommends the methodology to be accepted by the VCSA.

**Abbreviations**

<b>AFOLU</b>	Agriculture, Forestry and Other Land Use
<b>CAR</b>	Corrective Action Request
<b>CB</b>	TÜV SÜD Certification Body “climate and energy”
<b>CDM</b>	Clean Development Mechanism
<b>CR</b>	Clarification Request
<b>DOE</b>	Designated Operational Entity
<b>ER</b>	Emission Reduction
<b>GEST</b>	Greenhouse gas Emission Site Type
<b>GHG</b>	Green House Gas(es)
<b>GPG</b>	Good Practice Guidance
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>IRL</b>	Information Reference List
<b>LULUCF</b>	Land-Use, Land-Use Change and Forestry
<b>NEE</b>	Net Ecosystem Exchange
<b>NEP</b>	Net Ecosystem Production
<b>PD</b>	Project Document
<b>PP</b>	Project Participant
<b>SOP</b>	Standard Operating Procedure
<b>TÜV SÜD</b>	TÜV SÜD South Asia Pvt Ltd
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VCS</b>	Verified Carbon Standard
<b>VCU</b>	Verified Carbon Unit
<b>VVB</b>	Validation, Verification Body

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## 1 INTRODUCTION

### 1.1 Objective

The company Silvestrum has commissioned TÜV SÜD to conduct the second assessment of its proposed AFOLU methodology “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs” with regard to the relevant VCS requirements. The evaluation objective is an assessment by a Third Party (VVB) of the proposed new methodology against all defined criteria set for methodology approvals under the VCS.

In particular, the baseline methodology, its consistency with the monitoring methodology, emission reduction calculations and the methodology’s compliance with the requirements of the VCS standard are evaluated. This report summarizes the findings of the evaluation. The present report represents the second approval within the double approval process as defined by VCS. The first assessment was carried out by SCS global services.

### 1.2 Scope

The scope of evaluation of proposed new methodology is defined as an independent and objective review of the baseline and monitoring methodology and other relevant documents.

The information in these documents is reviewed against the requirements of the VCS, in particular:

- VCS standard version 3.5;
- VCS AFOLU Requirements version 3.4;
- VCS Methodology Approval Process version 3.6;
- Technical expertise relevant to the scope and technical area of WRC projects.

### 1.3 Summary Description of the Methodology

The proposed project type covered by this methodology is aimed at reducing greenhouse gas emissions resulting from rewetting of drained peatlands in temperate climatic regions due to past land uses. The methodology accounts for GHG emission reductions from drained rewetted peatlands as well as for GHG emissions from changes in carbon stocks in selected non-peat carbon pools. The methodology applies the GEST (GEST: Greenhouse gas Emissions Site Type) approach for the estimation of emissions reductions. This approach uses ground vegetation composition and water table depth as proxies for peatland GHG emissions.

## 2 ASSESSMENT APPROACH

### 2.1 Method and Criteria

The methodology assessment applies standard auditing techniques to assess the correctness of the information provided by the project participants. The work starts with the appointment of the team covering the technical scope(s) and sectoral scope(s) for evaluating the VCS methodology activity. Once the methodology is received, members of the team carry out the desk review, office session with the developers, resolution of issues identified and finally preparation of the assessment report. The prepared assessment

report and other supporting documents then undergo an internal quality control by the Certification Body “Environment and Energy” of TÜV SÜD, before final submission of the assessment report.

In order to ensure transparency, assumptions are clear and explicitly stated; the background material is clearly referenced. TÜV SÜD developed methodology-specific checklists and protocols customised for the assessment. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team, and the results from validating the identified criteria.

The assessment protocol serves the following purposes:

- To organize the details and provision of clarifications on the requirements of which a VCS methodology is expected to meet
- To elucidate how a particular requirement has been validated as well as to document the results of the assessment and any adjustments made to the methodology document.

The assessment protocol consists of two tables. The different columns in these tables are described in the figure below.

**Assessment Protocol Table 1: Conformity of Methodology**

VCS Requirement	Reference	Comments	Draft Conclusion	Final Conclusion
The checklist is organised in sections following the arrangement of the respective VCS requirements for methodologies.	Gives reference to documents where the answer to the checklist question or item is found.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is used to explain the conclusions reached. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any <b>Request</b> has to be substantiated within this column	Conclusions are presented based on the assessment of the first methodology version. This is either acceptable based on evidence provided (☑), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question (See below). <b>Clarification Request (CR)</b> is used when the validation team identified a need for further clarification.	Conclusions are presented in the same manner based on the assessment of the final methodology version and further documents including assumptions presented in the documentation.

**Assessment Protocol Table 2: Summary of Requests and Responses of Methodology Developer**

Clarifications and Corrective Action Requests	Ref. to VSC requirements	Summary of response by methodology developer	Conclusion by Audit Team
Corrective Action or Clarification Requests from table 1 are listed in this section.	Reference to the respective VCS requirement.	The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.	This section summarises the discussion on and revision to methodology together with the audit team’s responses and final conclusions. The conclusions is also reflected in Table 1, under “Final Conclusion”.

The completed validation protocol is enclosed in Annex 1 to this report.

## 2.2 Document Review

A first version of the Methodology was submitted to TÜV SÜD in October 2014. This methodology version and additional background documents related to the methodology were reviewed to verify the correctness, credibility and interpretation of the presented information, furthermore a cross-check between information provided and information from other sources was carried out as initial step of the assessment process. A complete list of all documents and proofs reviewed is attached as Annex 2 to this report.

## 2.3 Interviews

During the period of the assessment several conference calls were set up to discuss with the methodology developer and relevant expert who contributed to the methodology to confirm relevant information and to resolve issues identified in the first document review.

Name	Organisation
Dr. Iginò Emmer	Silvestrum
John Couwenberg	Greifswald University

## 2.4 Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed an assessment team in accordance with the appointment rules of the TÜV SÜD certification body “Environment and Energy”.

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Validator (VAL);
- Validator Trainee (T);
- Technical Experts (TE).

It is required that the sectoral scope(s) and the technical area(s) linked to the methodology and project have to be covered by the assessment team. For this particular methodology the assessment team members are presented in the table below. The respective appointment certificates are attached to this report as annex 3.

**Assessment Team:**

Name	Qualification	Coverage of scope	Coverage of technical area	Coverage of financial aspect
Sebastian Hetsch	ATL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Martin Opitz	VAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Dr. Matthias Drösler	TE		<input checked="" type="checkbox"/>	

Technical Reviewers are Vijayanand and Martin Seitz (covering the respective Technical Area).

**2.5 Resolution of Findings**

The objective of this phase of the assessment is to resolve the requests for corrective actions and clarifications and any other outstanding issues which needed to be clarified for TÜV SÜD`s positive conclusion on the methodology. All Corrective Action Requests and Clarification Requests raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the assessment process, the concerns raised and responses that were given are summarised in chapter 3 below and documented in more detail in the validation protocol in Annex 1.

The methodology that was submitted in August 2016 served as the basis for the final assessment presented herewith.

**2.6 Internal Quality Control**

Internal quality control is the final step of the assessment process and is conducted by the Certification Body (CB) "Environment and Energy". The CB checks the final documentation, which includes the assessment report and annexes.

Technical Reviewers appointed by the CB carry out corresponding review work. The completion of the quality control indicates that each report submitted has been approved either by the head of the CB or the deputy. In projects where either the Head of the CB or his/her deputy is part of the assessment team, the approval is given by the one not serving on the project team.

### 3 ASSESSMENT FINDING

#### 3.1 Relationship to Approved or Pending Methodologies

The proposed methodology analysed the relationship of existing approved VCS methodologies that account for emission reductions resulting from rewetting of peatland respectively its restoration.

By applying the GEST-approach the proposed methodology includes procedures that are not covered by any approved or pending methodology under the Wetlands Restoration and Conservation project category of the VCS. Thus, approved methodologies could not reasonably be revised to serve the same purpose at the proposed methodology.

#### 3.2 Stakeholder Comments

<p><b>Period of the global stakeholder consultation process:</b> 13-12-2011 until 12-01-2012</p>	
<p><b>Comment submitted by:</b> Peter Schlesinger Carbon Decisions International Peru</p>	<p><b>Issues raised:</b> Methodology calls for "remotely sensed data of adequate resolution" p. 6, and elsewhere "high spatial resolution" p. 59, but never defines "adequate" or "high". Also, there is no accuracy assessment of the remote sensing classifications, which doesn't meet good practice guidelines. The imagery classification methods offered are insufficient. Calls for: use of good practice, but doesn't suggest any; and, following accuracy requirements, but doesn't recommend any.</p>
<p><b>Response by methodology developer:</b> <b>General Comments:</b> According to the information received from the methodology developer no formally respond with a dedicated written answer was provided, but rather the methodology amended in response to the comment. On that basis SCS (1st assessor) closed respectively responded to the comment.</p>	
<p><b>Response by TÜV SÜD:</b> This comment was significant at the time of issuance. Section 9.3.6 lists additional criteria for spatial resolution, accuracy assessment as well as well-defined procedures for imagery classification.</p>	

TÜV SÜD concludes that the proposed methodology has been satisfactorily been revised to address public comments.

#### 3.3 Structure and Clarity of Methodology

The methodology is written in line with VCS requirements:

- The methodology developer followed the instructions provided in the methodology template provided. Criteria and procedures for the application of the methodology are provided in the appropriate sections of the methodology template.
- The terminology used is consistent with that used in the VCS Program respectively in the GHG accounting in general.

- Firm requirements, (non-mandatory) recommendations and permissible or allowable options are clearly defined by using respective modal verbs.
- Criteria and procedures provided in the methodology are written in an understandable, readily and consistently manner so that the methodology can be applied by potential project developers.
- The manner criteria and procedures are provided in the methodology allows potential VVBs to unambiguously validate/verify projects against the methodology.

The methodology complies with essential requirements in terms of terminology used, unambiguosness of requirements demanded and clarity of criteria and procedures provided. Thus, the methodology offers the structure and clarity required to be thoroughly applicable.

### 3.4 Definitions

Key terms are clearly and appropriately defined, and consistently used throughout the methodology. The definitions provide sufficient clarity in order to prevent any kind of misapprehension. Key terms are listed in alphabetical order as required. Terms already defined under the VCS Program are not repeated as required. Terms and definitions used in the methodology are listed on page 5 of the methodology.

### 3.5 Applicability Conditions

The methodology provided a set of 12 applicability conditions determining:

- types of land use in the baseline and the project scenario
- requirements for side selection and boundaries
- abiotic risks

The applicability conditions provided are appropriate for the project activities targeted and the quantification procedures set out by the methodology. As a whole, the applicability conditions clearly determine which project activities are eligible and which are not under the methodology. The applicability conditions as a whole are consistent and correlating.

In the following table, the applicability conditions are listed and clarified if:

- a) the applicability condition is written in a sufficiently clear and precise manner and if it can be determined whether the project activity meets with the condition
- b) Conformance with the condition can be demonstrated at the time of the project validation.

No	Applicability Condition	a)	b)
a.	Project activities aim at the rewetting of peatlands that have been drained for forestry that is not or no longer profitable (as determined on the basis of annual reports, annual accounts, market studies, government studies, or land use planning reports and documents), or peat extraction that has been abandoned at least 2 years prior to the project start date, or agriculture that has been abandoned at least 2 years prior to the project start date or will be continued in the project scenario, or where drainage of additional peatland for new agricultural sites will not occur or is prohibited by law. Post-rewetting land use is limited to forestry (including biomass production but excluding IFM and	Yes	yes

	REDD activities), agriculture (excluding ALM activities), nature conservation/recreation, or a combination of these activities. Peat extraction does not occur.		
b.	Harvesting in the baseline scenario within the project boundary does not occur or is non-commercial in nature and is then not accounted for. Carbon storage in wood products in the project scenario is conservatively not accounted for.	Yes	yes
c.	The collection of firewood for non-commercial use in the baseline scenario may occur but is not accounted for.	Yes	yes
d.	The burning of biomass as a project activity does not occur. Biomass burning in the baseline scenario may occur but GHG emissions are conservatively not accounted for.	Yes	yes
e.	The project boundary must be designed such that the project GHG benefits are not negatively affected by drainage activities that occur outside the project area.	Yes	yes
f.	Leakage caused by activity shifting, market effects and hydrological connectivity are avoided by project design and site selection.	Yes	yes
g.	Live tree vegetation may be present and subject to carbon stock changes (e.g. due to harvesting) in both the baseline and project scenarios.	Yes	yes
h.	The burning of peat as a project activity in the project scenario does not occur.	Yes	yes
i.	For claiming GHG emission reductions from reducing peat fires, (A) it must be demonstrated that a threat of frequent on-site fires exists. Procedures for performing a full (e.g. tier-3) assessment of the GHG emissions due to peat fires in the baseline scenario are not provided. If the default procedure provided cannot be used, such baseline emissions are conservatively not accounted for; and (B) peatland rewetting must be combined with fire management.	Yes	yes
j.	It must be demonstrated by referring to peer-reviewed literature and by sufficient rewetting that N <sub>2</sub> O emissions will not increase in the project scenario compared to the baseline scenario. Therefore, N <sub>2</sub> O emissions need not be accounted for.	Yes	yes
k.	N-fertilizers are not used in the project scenario.	Yes	yes
l.	In the baseline scenario the peatland is drained.	Yes	yes

### 3.6 Project Boundary

The proposed methodology distinguished between temporal and geographic boundaries.

#### *Temporal boundaries*

Temporal boundaries are defined by project crediting period, project crediting period start date and project start date as well as the peat depletion time (PDT) which is derived from peat depth and rate of peat loss due to subsidence and fire.

*Geographic boundaries*

Geographical boundaries describe the physical boundaries of the project area based on a stratification due to peat depth, vegetation cover and accuracy requirements respectively.

The boundaries have to be determined following clear guidelines and requirements detailed in the proposed methodology in compliance with the VCS requirements. Further information is specified in Annex I & II of this report.

The methodology contains the following carbon pools in accordance with the VCS AFOLU requirements as described below:

Carbon pool	Included?	Comment assessment team
Aboveground tree biomass	Yes	Required for inclusion by VCS AFOLU Requirements Section 4.3.1.
Aboveground non-tree biomass	Yes	Optional carbon pool in accordance with VCS AFOLU Requirements, Section 4.3.1.
Belowground biomass	Yes	Optional carbon pool in accordance with VCS AFOLU Requirements, Section 4.3.1
Litter	Yes	Does not have to be included as carbon pool in accordance with VCS AFOLU Requirements, Section 4.3.1. Nevertheless the litter layer is included if it forms part of a GEST.
Deadwood	No	Optional carbon pool in accordance with VCS AFOLU Requirements, Section 4.3.1
Soil	Yes	Required for inclusion by VCS AFOLU Requirements Section 4.3.1.
Wood Products	No	Optional carbon pool in accordance with VCS AFOLU Requirements, Section 4.3.1

The methodology contains the following GHG sources in accordance with the VCS AFOLU requirements as described below:

Source	Gas	Included?	Justification/Explanation	
Baseline	Changes in stocks in carbon pools in biomass	CO <sub>2</sub>	Yes	Potential major source of removals; considered as carbon pool in compliance with VCS AFOLU Requirements.
	Oxidation of drained peat	CO <sub>2</sub>	Yes	Main source and gas to be addressed by project activities. May be conservatively excluded in the baseline scenario in accordance with VCS AFOLU Requirements, Section 4.3.4.

Source		Gas	Included?	Justification/Explanation	
		CH <sub>4</sub>	Yes	Required for inclusion within the project boundary by the VCS AFOLU Requirements, Section 4.3.23. May be conservatively excluded in the baseline scenario in accordance with VCS AFOLU Requirements, Section 4.3.4.	
		N <sub>2</sub> O	No	Required for inclusion within the project boundary by the VCS AFOLU Requirements, Section 4.3.24. Excluded in the baseline scenario in accordance with VCS AFOLU Requirements, Section 4.3.3. as per applicability condition.	
	Burning of biomass	CO <sub>2</sub>	No	Conservatively excluded in the baseline scenario in accordance with VCS AFOLU Requirements, Section 4.3.4.	
		CH <sub>4</sub>	No		
		N <sub>2</sub> O	No		
	Peat burning	CO <sub>2</sub>	Yes	Fire may occur in the baseline scenario and is accounted for with a default approach ( <i>Fire Reduction Premium</i> ) in accordance with VCS AFOLU Requirements, Section 4.5.34	
		CH <sub>4</sub>	No	Conservatively excluded in the baseline scenario in accordance with VCS AFOLU Requirements, Section 4.3.4.	
		N <sub>2</sub> O	No		
	Project	The production of methane by bacteria	CH <sub>4</sub>	Yes	Potential major source of emissions in the project in low salinity and freshwater areas. Included in accordance with VCS AFOLU Requirements, Section 4.3.23.
		Accumulation of peat in project scenario	CO <sub>2</sub>	No	Conservatively excluded in the project scenario in accordance with VCS AFOLU Requirements, Section 4.3.4.
Burning of biomass		CO <sub>2</sub>	No	Excluded in the project scenario in accordance with VCS AFOLU Requirements, Section 4.3.3. as per applicability condition.	
		CH <sub>4</sub>	No		
		N <sub>2</sub> O	No		
Fossil fuel combustion from transport and machinery use in project activities		CO <sub>2</sub>	No	Deemed de minimis in accordance with VCS AFOLU Requirements, Section 4.3.3(3)	
		CH <sub>4</sub>	No		
		N <sub>2</sub> O	No		

Source		Gas	Included?	Justification/Explanation
	Peat burning	CO <sub>2</sub>	Yes	Fire may occur in the project scenario and is accounted for with a default approach ( <i>Fire Reduction Premium</i> ) in accordance with VCS AFOLU Requirements, Section 4.5.34
		CH <sub>4</sub>	No	Not included in the <i>Fire Reduction Premium</i> approach
		N <sub>2</sub> O	No	Not included in the <i>Fire Reduction Premium</i> approach

### 3.7 Baseline Scenario

The methodology uses a project method to identify the baseline scenario. The methodology requires the application of the latest version of the CDM “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities” in order to identify potential alternative baseline land use scenarios. In case there is a conflict between the CDM tool requirements and the VCS rules, the VCS Program Methodology requires that VCS rules must be followed, as outlined in AFOLU Guidance: “Additional guidance for VCS Afforestation, Reforestation and Revegetation projects using CDM Afforestation/Reforestation Methodologies”

Relevant non-human induced rewetting such as natural damming of waterways and the long term climate variables influencing the water table are accounted for. Thus conformance with Section 4.4.11 of the VCS AFOLU Requirements is accomplished. For further details see also ANNEX 1.

In summary, the procedures for determining the baseline scenario are appropriate, adequate and in compliance with the VCS rules for WRC projects.

### 3.8 Additionality

The methodology uses a project method determine additionality. The methodology requires the application of the latest version of the CDM “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities” in order to demonstrate additionality. The tool is appropriate for project activities covered by the methodology as the proposed project activities are AFOLU activities. Thus conformance with Section 4.6.2 of the VCS Standard Requirements is accomplished. For further details see also ANNEX 1.

In summary, the tool for demonstrating additionality is appropriate, adequate and in compliance with the VCS rules for WRC projects.

### 3.9 Quantification of GHG Emission Reductions and Removals

#### 3.9.1 Baseline Emissions

Baseline emissions are quantified by determining carbon stock changes in non-peat carbon pools, GHG emissions as a result of peat oxidation due to drainage or a combination of both. In addition, emissions as a result of peat combustion due to peatland fires can be determined.

Section 8.1.2 provides procedures to estimate net carbon stock changes in non-peat carbon pools. The procedures provided are consistent with Volume 4, Chapter 2 of IPCC 2006 Guidelines.

Section 8.1.3 provides procedures to estimate provides procedures to estimate GHG Emission due to peat drainage following the GEST approach. The GEST approach utilizes documented relationships between CO<sub>2</sub> emissions and vegetation types which is consistent with Section 4.5.27 of the VCS AFOLU Requirements. For further details see also ANNEX 1.

The Peat depletion time as part of the baseline has to be reassessed latest every 10 years in accordance with section 4.5.25 of the VCS AFOLU Requirements.

In summary all criteria and procedures described section 8.1 of the methodology are appropriate for project activities covered by the methodology. The procedures for calculating baseline emissions and removals cover all GHG sources, sinks and reservoirs. All algorithms, equations and formulas presented are appropriate and without error. All models and default values are appropriate an in conformance with VCS requirements.

### 3.9.2 Project Emissions

The procedures provided for estimating the project emissions are similar to those for the estimation of the baseline emissions.

Besides the mentioned procedures the VCS Program Methodology provides in section 8.2.3.2 an alternative procedures to estimate GHG emission. The procedure is following the GEST approach but estimates the project emissions on bases of a conversion of a GEST.

In summary all criteria and procedures described section 8.2 of the methodology are appropriate for project activities covered by the methodology. The procedures for calculating baseline emissions and removals cover all GHG sources, sinks and reservoirs. All procedures, algorithms, equations and formulas presented are appropriate and without error. All models and default values are appropriate an in conformance with VCS requirements.

### 3.9.3 Leakage

Due to the applicability conditions the VCS Program Methodology does not account for leakage of any kind. In order to ensure that no leakage will occur, the VCS Program Methodology provides requirements in terms of project design and side selection.

In summary all requirements described section 8.4 in terms of project design are appropriate to avoid all potential leakage sources covered by WRC.

### 3.9.4 Net GHG Emission Reductions and Removals

The calculation of the net GHG Emission Reductions and Removals are appropriate for the project activities covered by the methodology comply with Section 4.7.1 and 4.7.2 of the VCS Standard. All algorithms, equations and formulas provided are appropriate and without error.

In accordance with section 4.1.4 of the VCS Standard the methodology allows an uncertainty of +/- 30% at a 95% or a +/-20% at a 90% confidence level. In the case confidence interval exceeds 30% or 20% respectively a deduction is required (section 8.5.2). The uncertainty is calculated based on the uncertainty assessment of in the baseline (Part 1) and uncertainty in the project scenario (Part 2).

In summary all algorithms, equations and formulas used are appropriate and without error. Any uncertainties associated with the quantification of net GHG emissions reductions and removals are addressed appropriately and in compliance with the VCS rules for WRC projects.

### 3.10 Monitoring

The specification for monitored and not monitored data and parameters are set out in sections 9.1 and 9.2 of the methodology element. For data and parameters that require measurement appropriate procedures for measurements are provided in section 9.3.

In the following table, the parameters available at validation provided in section 9.1 of the methodology are listed and clarified if they appropriate in terms of:

- a) Data unit
- b) Source of data
- c) Value applied
- d) Justification of choice of data or description of measurement methods and procedures to be applied
- e) Purpose of data

Parameter	Description	a)	b)	c)	d)	e)	Comments
$Depth_{peat-BSL,i}$	Peat depth above the drainage limit in the baseline scenario in stratum <i>i</i> at project start	yes	yes	yes	yes	yes	$Depth_{peat-BSL,i,t0} = Depth_{peat-WPS,i,t0}$ This parameter must be re-assessed together with the re-assessment of the baseline scenario.
$Depth_{peat-WPS,i}$	Peat depth above the drainage limit in the project scenario in stratum <i>i</i> at project start	yes	yes	yes	yes	yes	Only for <i>ex-ante</i> assessment $Depth_{peat-BSL,i,t0} = Depth_{peat-WPS,i,t0}$
$Rate_{peatloss-BSL,i}$	Rate of peat loss due to subsidence and fire in the baseline scenario in stratum <i>i</i>	yes	yes	yes	yes	yes	The use of a relatively low value for a constant rate of peat loss may not be confused with a relatively high value when determining the need for stratification of peat depth. This parameter must be re-assessed together with the re-assessment of the baseline scenario.
$Rate_{peatloss-WPS,i}$	Rate of peat loss due to subsidence in the project scenario in stratum <i>i</i>	yes	yes	yes	yes	yes	Only for <i>ex-ante</i> assessment

$VC_{peat}$	Volumetric carbon content of peat	yes	yes	yes	yes	yes	none
$A_{BSL,i,t}$	Area of baseline stratum $i$ in year $t$	yes	yes	yes	yes	yes	In Equations 2, 7, 8 and 11 the parameter is denoted as $A_{BSL,i,t100}$ , which is the area of baseline stratum $i$ at $t=100$ .
$R_j$	Root:shoot ratio for tree species $j$	yes	yes	yes	yes	yes	none
$CF_j$	Carbon fraction of dry matter for species $j$	yes	yes	yes	yes	yes	none
$I_{v,j,i,t}$	Average annual increment in merchantable volume for species $j$ in stratum $i$ in year $t$	yes	yes	yes	yes	yes	none
$D_j$	Basic wood density for species $j$	yes	yes	yes	yes	yes	none
$BEF_{1,j}$	Biomass expansion factor for conversion of annual net increment (including bark) in merchantable volume to total above-ground biomass increment for species $j$	yes	yes	yes	yes	yes	$BEFs$ are age dependent, and they are usually large for young stands and quite small for old stands; $BEFs$ in IPCC literature and national inventory data are usually applicable to closed canopy forest. If applied to individual trees growing in open field it is recommended that the selected $BEF$ be increased by a further 30%.
$K_{ph}$	Alexeyev coefficient, converts volumes of above ground growing stock ( $m^3ha^{-1}$ ) to above, below ground and bark dry biomass (t d.m. $ha^{-1}$ )	yes	yes	yes	yes	yes	May be used instead of $R_j$ and $BEF_j$
$V_{j,i,t}$	Stem volume of tree species $j$ in stratum $i$ in year $t$	yes	yes	yes	yes	yes	Note that volume tables from which $V_{j,i,t}$ are obtained may or may not include allowance for losses due to harvesting or mortality. Such losses may be conservatively neglected when estimating baseline removals in pre-project trees. Otherwise $C_{BSL-tree-AB,j,i,t}$ must be estimated on the basis of credible and transparent information on the rate at

							which pre-project activities (and mortality, if applicable) are reducing carbon stocks in existing live trees (e.g., due to harvesting for local timber consumption, or for fuelwood).
$BEF_{2j}$	Biomass expansion factor for conversion of stem biomass to above-ground tree biomass for species $j$	yes	yes	yes	yes	yes	none
$nTR_{j,i,t}$	Tree stand density of species $j$ in stratum $i$ in year $t$	yes	yes	yes	yes	yes	none
$f_j(X, Y, \dots)$	Allometric equation for species $j$ linking measured tree dimension variables (e.g. diameter at breast height ( $DBH$ ) and possibly height ( $H$ )) to above-ground biomass of living trees.	yes	yes	yes	yes	yes	Used for trees known at validation
$GHG_{GEST_{bsl-CO2,i,t}}$	Emission of $CO_2$ from baseline GEST in stratum $i$ in year $t$	yes	yes	yes	yes	yes	This parameter must be re-assessed together with the re-assessment of the baseline scenario.
$GHG_{WL_{bsl-CO2,i,t}}$	Emission of $CO_2$ related to water table depth in the baseline scenario in stratum $i$ in year $t$	yes	yes	yes	yes	yes	This parameter must be re-assessed together with the re-assessment of the baseline scenario.
$GHG_{GEST_{bsl-CH4,i,t}}$	Emission of $CH_4$ from baseline GEST in stratum $i$ in year $t$	yes	yes	yes	yes	yes	This parameter must be re-assessed together with the re-assessment of the baseline scenario.
$GHG_{WL_{bsl-CH4,i,t}}$	Emission of $CH_4$ related to water table depth in the baseline scenario in stratum $i$ in year $t$	yes	yes	yes	yes	yes	This parameter must be re-assessed together with the re-assessment of the baseline scenario.
$V_{l,j,sp,t}$	Stem volume of tree $l$ of species $j$ in plot $sp$	yes	yes	yes	yes	yes	none

	in stratum $i$ in year $t$						
$A_{peatburn}$	Statistics and/or maps in official reports and/or remotes sensing data	yes	yes	yes	yes	yes	none
$A_P$	Total project area	yes	yes	yes	yes	yes	none

In the following table, the parameters to be monitored provided in section 9.2 of the methodology are listed and clarified if they appropriate in terms of:

- a) Data unit
- b) Source of data
- c) Description of measurement methods and procedures to be applied
- d) Frequency of monitoring/recording
- e) QA/QC procedures to be applied
- f) Purpose of data
- g) Calculation method.

Parameter	Description	a)	b)	c)	d)	e)	f)	g)	Comments
$A_{WPS,i,t}$	Area of project stratum $i$ in year $t$	yes	In Equations 2, 7, 8 and 11 the parameter is denoted as $A_{WPS,i,t100}$ , which is the area of project stratum $i$ at $t=100$ .						
$A_{sp,i}$	Total area of all sample plots in stratum $i$	yes	none						
$f_j(X, Y, \dots)$	Allometric equation for species $j$ linking measured tree dimension variables (e.g. diameter at breast height (DBH) and possibly height ( $H$ )) to above-ground biomass of living trees.	yes	Used for trees monitored						
DBH	Diameter at breast height of tree	yes	none						
$H$	Height of tree	yes	none						

$GHG_{GEST-wps-CO2,i,t}$	Emission of CO <sub>2</sub> from project GEST in stratum <i>i</i> in year <i>t</i>	yes	none						
$GHG_{GEST-wps-CH4,i,t}$	Emission of CH <sub>4</sub> from project GEST in stratum <i>i</i> in year <i>t</i>	yes	none						
$GHG_{WL-wps-CO2,i,t}$	Emission of CO <sub>2</sub> related to water table depth in the project scenario in stratum <i>i</i> in year <i>t</i>	yes	none						
$GHG_{WL-wps-CH4,i,t}$	Emission of CH <sub>4</sub> related to water table depth in the project scenario in stratum <i>i</i> in year <i>t</i>	yes	none						
Water table depth	Sub-soil or above soil surface of water, relative to the soil surface	yes	none						
<i>t2</i> and <i>t1</i>	Years of the monitoring activity	yes	$T = t2 - t1$						

In summary, the specification for monitored and not monitored data and parameters is appropriate, adequate and in compliance with the VCS rules.

## 4 ASSESSMENT CONCLUSION

TÜV SÜD performed an assessment validation of the proposed VCS methodology: “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”. Standard auditing techniques have been used for the assessment of the methodology. A VCS scope-specific protocol for the methodology was prepared to conduct the assessment process in a transparent and comprehensive manner.

The review of the methodology documentation, subsequent follow-up interviews, and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In the opinion of TÜV SÜD, the methodology meets all relevant VCS requirements if the underlying assumptions do not change. TÜV SÜD recommends the methodology to be accepted by the VCSA.

The assessment was performed following the requirements of the latest version of the VCS Standard and on the basis of the contractual agreement. The single purpose of this report is its use during the registration process as part of the VCS methodology approval cycle.

## 5 REPORT RECONCILIATION

NA

## 6 EVIDENCE OF FULFILMENT OF VVB ELIGIBILITY REQUIREMENTS

In line with VCS requirements as stated in the VCS Methodology Approval Process v.3.5, section 4, TÜV SÜD is eligible to conduct this methodology assessment:

- TÜV SÜD is accredited to conduct audits in the sectoral scope 14;
- TÜV SÜD has completed over 10 project validations in the sectoral scope 14, including in particular numerous CDM validations;
- In addition Professor Drösler, an internally recognized WRC expert, and IPCC lead author for peat-land was included in the audit team. He is however not formally appointed under VCS.

## 7 SIGNATURE

Pune, 09/06/2017



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Eswar Murty

Certification Body "Environment and Energy"  
TÜV SÜD South Asia

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



## ANNEX 1: ASSESSMENT PROTOCOL

**Table 1: VCS Methodology Assessment Protocol**

VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<b>General Requirements (Meth template v3.3)</b>				
TITLE PAGE: All items in the box at the bottom of the first page must be completed using Arial 10pt, black, regular (non-italic) font. The box must appear on the first page of this document until the methodology or methodology revision is approved.	2	All items are in Arial 10pt, black and regular. The box appears on the first page as requested	✓	✓
METHODOLOGY: The proposed methodologies must demonstrate that no approved or pending methodology under the VCS Program or an approved GHG program could reasonably be revised to meet the objective of the proposed methodology.	2	On the VCS Webpage there is no comparable methodology listed to quantify GHG emission reduction from rewetting drained peatlands used for peat extraction, forestry or agriculture based on GEST	✓	✓
All sections must be completed using Arial 10pt, black, regular (non-italic) font. Sections which are not applicable may be left blank but should NOT be deleted from the final document.	2	All sections are in Arial 10pt, black and regular.	✓	✓
<b>General requirements (VCS v3.5 Section 4.1)</b>				
Does the VCS Program methodology use the VCS Methodology Template?	2	The VCS Program methodology uses the VCS Methodology Template as requested.	✓	✓
a) Does such a VCS Program methodology use the VCS Methodology Template for the framework document and the VCS Module Template for the modules and tools?  b) Does the framework document clearly state how the modules and/or tools are to be used within the context of the VCS Program methodology?  <i>In Case of Methodologies employing a modular approach in which a framework document provides the structure of the methodology and separate modules and/or tools are used to perform specific methodological tasks.</i>	2	a) The VCS Program methodology uses the VCS Methodology Template as requested. Modules are not explicitly developed by the PP. Nevertheless the VCS Program methodology requires the application of registered tools and modules  b) The methodology clearly states how tools and modules are to be used within the context of the VCS Program methodology	✓	✓
Does the VCS Program methodology clearly state the assumptions, parameters and procedures that have significant	1	The VCS Program Methodology allows a broad range of input parameters to be applied when estimating	✓	✓

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
uncertainty, and describe how such uncertainty shall be addressed?		emission following the GEST approach. This leads to an uncertainty directly related to the source of the input parameters chosen. As hardly any assumptions, parameters and procedures can lead to uncertainty none is especially highlighted as of significant uncertainty. In order to provide guidance the VCS Program Methodology dedicates sections 9.3.2 (Uncertainty and quality management) and 9.3.3 (Expert judgment) to the topic of uncertainty and how to deal with it in order to minimize it respectively. Especially section 9.3.3 is of importance as the expert judgment is mentioned as source of information on many places of the methodology.		
Where applicable, do elements of the VCS Program methodology provide a means to estimate a 90 or 95 percent confidence interval?	1	The VCS Program methodology allows the application of both means to estimate a 90 or a 95 percent confidence interval	✓	✓
Where a 90 percent confidence interval is applied and the width of the confidence interval exceeds 20% of the estimated value or where a 95 percent confidence interval is applied and the width of the confidence interval exceeds 30% of the estimated value, does the VCS Program Methodology apply an appropriate confidence deduction?	1	The methodology provides an equation for deduction in case the confidence interval exceeds 30% by a 95% confidence level or 20% by a 90% confidence level.  See also comment above.	✓	✓
Are the methods for estimating uncertainty used by the VCS Program Methodology based on recognized statistical approaches such as those described in IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories?	1	The methods for estimating uncertainty to be applied are based on recognized statistical approaches. <i>See also comments further below.</i>	✓	✓
Do confidence deductions applied by the VCS Program methodology use conservative factors such as those specified in the CDM Meth Panel guidance on addressing uncertainty in its Thirty Second Meeting Report, Annex 14?	1	A appropriate confidence deduction is applied by the VCS Program Methodology.	✓	✓
In the case the VCS Program methodology mandates the use of specific models to simulate processes that generate GHG emissions (ie, the project proponent is not permitted	1	No specific models are used by the VCS Program Methodology. Hydrological models can be used in order to predict e.g. water level of the project area. Requirements for	✓	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>to use other models), is the following applied, given the note below:</p> <ol style="list-style-type: none"> <li>1) Models shall be publicly available, though not necessarily free of charge, from a reputable and recognized source (eg, the model developer's website, IPCC or government agency).</li> <li>2) Model parameters shall be determined based upon studies by appropriately qualified experts that identify the parameters as important drivers of the model output variable(s).</li> <li>3) Models shall have been appropriately reviewed and tested (e.g., ground-truthed using empirical data or results compared against results of similar models) by a recognized, competent organization, or an appropriate peer review group.</li> <li>4) All plausible sources of model uncertainty, such as structural uncertainty or parameter uncertainty, shall be assessed using recognized statistical approaches such as those described in <i>2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 1, Chapter 3</i>.</li> <li>5) Models shall have comprehensive and appropriate requirements for estimating uncertainty in keeping with IPCC or other appropriate guidance, and the model shall be calibrated by parameters such as geographic location and local climate data.</li> <li>6) Models shall apply conservative factors to discount for model uncertainty (in accordance with the requirements set out in Section 4.1.4), and shall use conservative as-</li> </ol>		<p>models are not further specified (e.g. methodology page 22).</p>		

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>sumptions and parameters that are likely to underestimate, rather than overestimate, the GHG emission reductions or removals.</p> <p><i>Note – The criteria set out in (2)-(6) above are targeted at more complex models. For simple models, certain of these criteria may not be appropriate, or necessary to the integrity of the methodology. Such criteria may be disregarded, though the onus is upon the methodology developer to demonstrate that they are not appropriate or necessary.</i></p>				
<p>In the case the VCS Program methodology uses default factors and standards to ascertain GHG emission data and any supporting data for establishing baseline scenarios and demonstrating additionality, is the following applied:</p> <ol style="list-style-type: none"> <li>1) Where the methodology uses third party default factors and/or standards, such default factors and standards shall meet with the requirements for data set out in Section 4.5.6, <i>mutatis mutandis</i>.</li> <li>2) Where the methodology itself establishes a default factor, the following applies: <ol style="list-style-type: none"> <li>a) The data used to establish the default factor shall comply with the requirements for data set out in Section 4.5.6, <i>mutatis mutandis</i>.</li> <li>b) The methodology shall describe in detail the study or other method used to establish the default factor.</li> <li>c) The methodology developer shall identify default factors which may become out of date (i.e., those default factors that do not represent physical constants or otherwise would not be expected to change significantly over time). Such default factors are subject to periodic re-assessment, as set out in VCS document <i>Methodology Approval Process</i>.</li> </ol> </li> </ol>	1	The VCS Program Methodology does not require to use default factors. Nevertheless, the VCS Program Methodology provides requirements on the selection of default factors in order to minimize uncertainty in section 9.3.2 and 9.3.3 respectively.	✓	✓

## Summary of Request and Responses by Methodology Developer

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
3) Where methodologies allow project proponents to establish a project-specific factor, the methodology shall provide a procedure for establishing such factors.				
In the case proxies are used, is it demonstrated that they are strongly correlated with the value of interest and that they can serve as an equivalent or better method (eg, in terms of reliability, consistency or practicality) to determine the value of interest than direct measurement of the value itself?	1	<p>GEST (Greenhouse gas Emission Site Type), which includes also the water table in case of bare peat, can be used as proxy to estimate GHG emissions and reductions.</p> <p><b>Clarification Request 1.</b> Clarify how it is ensured that the correlation between GEST types and emissions in a particular project are actually given:</p> <ul style="list-style-type: none"> <li>Clarify if validation of the models are required</li> <li>Clarify how well GEST types reflect succession process (e.g. in terms of rewetting of previously drained area or vice versa (in the baseline))</li> </ul>	CR	✓
Does the VCS Program methodology use a standardized method (i.e., performance method or activity method) or a project method to determine additionality and/or the crediting baseline, and does the VCS Program methodology state which type of method is used for each?  <i>A project method is a methodological approach that uses a project-specific approach for the determination of additionality and/or crediting baseline.</i>	1	<p>For the determination of the additionality and the baseline the methodology requires the application of a tool approved by the VCS. Thus, the methodology uses a project method to determine additionality and the crediting baseline.</p>	✓	✓
<i>Methodologies may use any combination of project, performance or activity methods for determining additionality and the crediting baseline.</i>  Does the VCS Program methodology provide only one method (i.e., a project method or performance method) for determining the crediting baseline (i.e., methodologies shall not provide the option of using either a project method or a performance method for the crediting baseline)?	1	<p>The methodology uses only a project method for determining the crediting baseline as required by the standard.</p>	✓	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<b>General requirements (AFOLU v3.4 Section 4.1)</b>				
Are the standards and factors used by the VCS Program methodology to derive GHG emissions data as well as any supporting data for baseline scenarios and additionality publicly available and come from a reputable and recognized source, such as IPCC 2006 Guidelines for National GHG Inventories or the IPCC 2003 Good Practice Guidelines for Land Use, Land-Use Change and Forestry?	1	The VCS Program methodology does not provide factors to be used by the methodology. Potential PPs are free to use default factors. The VCS Program Methodology provides requirements on the selection of default factors in order to minimize uncertainty in section 9.3.2 and 9.3.3 respectively.	✓	✓
<b>Eligible AFOLU Wetlands Restoration and Conservation (WRC) Category (AFOLU v3.4 Section 4.2)</b>				
Do the applicability conditions of the VCS Program methodology allow WRC activities that increase net GHG removals by restoring wetland ecosystems or that reduce GHG emissions by rewetting or avoiding the degradation of wetlands?  Does the VCS Program methodology require that the project area meets an internationally accepted definition of wetland, such as from the IPCC, Ramsar Convention on Wetlands, those established by law or national policy, or those with broad agreement in the peer-reviewed scientific literature for specific countries or types of wetlands?  <i>Common wetland types include peatland, salt marsh, tidal freshwater marsh, mangroves, wet floodplain forests, prairie potholes and seagrass meadows. WRC activities may be combined with other AFOLU project categories, as further explained in Section 4.2.20 of the AFOLU requirements.</i>	1	The applicability conditions allow WRC activities that increase net GHG removals by restoring wetland ecosystems.  The VCS Program Methodology requires that the project area meets the definition of peatland provided by the VCS Program Definitions Version 3.5.	CR 3	✓
<i>Avoiding the degradation or conversion of a wetland can reduce GHG emissions by preventing the release of carbon stored in wetland soils and vegetation. Many wetlands rely on a natural supply of sediments to support soil formation. Sediment supply may be interrupted by a physical alteration to the landscape, such as a river diversion, canal construction or isolation of wetlands behind man-made structures (eg, road or rail embankments, levees or dams).</i>	1	The methodology requires that project activities affect the hydrology of the project area. It is assumed, that, by affecting the hydrology soil carbon stock will be accumulate or maintained.	✓	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p><i>Restoring wetland ecosystems reduces and/or removes GHG emissions by creating the necessary physical, biological or chemical conditions that enhance carbon sequestration.</i></p> <p>Do the applicability conditions of the VCS Program methodology allow activities that affect the hydrology of the project area and the changes in hydrology result in the accumulation or maintenance of soil carbon stock?</p>				
<p>Does the VCS Program methodology fall under the AFOLU project category Wetlands Restoration and Conservation (WRC) / Restoring Wetland Ecosystems (RWE) as it includes:</p> <p>1) Activities that reduce GHG emissions or increase carbon sequestration in a degraded wetland through restoration activities. Such activities include enhancing, creating and/or managing hydrological conditions, sediment supply, salinity characteristics, water quality and/or native plant communities. For the purpose of these requirements, restoration activities are those that result in the reestablishment of ecological processes, functions, and biotic and/or abiotic linkages that lead to persistent, resilient systems integrated within the landscape, noting the following:</p> <p>a) Restoration or management of water table depth (eg, the rewetting of peatlands, the reintroduction of river flows to floodplains, or the reintroduction of tidal flows to coastal wetlands) implies long-term and measurable changes in water table depth that sequester carbon and/or reduce emissions. Methodologies shall establish the appropriate change in water table depth (such as raising, lowering or restoring hydrological function) that is expected for eligible project activities, considering the following baseline scenario conditions:</p>	1	The methodology falls under the AFOLU project category Wetland Restoration and Conservation (WRC) / Restoring Wetland Ecosystems (RWE) as it aims to reduce net GHG emissions by reducing oxidation and decreasing the rate of peat subsidence through the establishment of a permanent higher water level on drained peatlands.	✓	✓

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Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>i. Drained wetlands have a water table depth that is lower than the natural average annual water table depth due to accelerated water loss or decreased water supply resulting from human activities and/or construction, either on- and/or off-site. Baseline activities include purposeful draining through pumping, ditching, stream channelization, levee construction, and purposeful decreases in water supply through dams and water diversions. Examples of this include selectively logged peatland swamp forests in Southeast Asia impacted by logging canals or wetlands with water tables lowered for agriculture.</p> <p>Activities shall raise the average annual water table depth in a drained wetland by partially or entirely reversing the existing drained state. Rewetting does not require the restoration of the average annual water table depth to the level of the soil or peat surface. However, RWE projects shall raise the water table depth close to the surface in order to be eligible to generate GHG credits. A clear relationship between GHG emissions and water table depth in wetlands, including peatlands<sup>4</sup> has been established in scientific literature with most changes in emissions occurring with water table depths close to the surface. This relationship is most dramatic on highly-organic soils (eg, peatland). On such sites, activities that establish a higher water table depth compared to the baseline scenario can be eligible where they measurably decrease the rate of soil subsidence due to oxidation to decrease or cease within the project crediting period, and where the permanence requirements set out in Section 4.5.27 can be satisfied.</p>				

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>ii. Impounded wetlands have a water table that has been artificially raised, intentionally or unintentionally, as a result of impaired natural drainage behind a constructed feature and can result in CH<sub>4</sub> emissions. Examples of impounded wetlands include flooded areas behind artificial barriers to natural drainage (such as road or rail embankments or levees), flooded areas for the purpose of subsidence reversal, man-made reservoirs and fish and shrimp ponds. Activities that restore hydrological function to an impounded wetland or lower the water table depth shall restore hydrological flow, considering the dynamics of the system and the hydrological connectivity necessary to maintain carbon stock and GHG fluxes.</p> <p>iii. Open water is an area continuously flooded or subject to natural periods of flooding, without in-situ vegetation contributing to soil carbon accumulation. Wetlands convert to open water in response to impaired sediment supply, sea level rise and/or impaired water quality. Activities that restore hydrological function to an open water wetland shall restore the hydrological flow, considering the dynamics of the system and the hydrological connectivity necessary to maintain carbon stock and GHG fluxes.</p> <p>b) RWE projects may generate GHG credits from the reduction of GHG emissions associated with avoiding peat fires on drained or partially drained peatlands. Fire-related activities on peatlands that exclude rewetting as part of the project are not eligible, because fire reduction activities on drained</p>				

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
peatland are unlikely to be effective over the long term without rewetting.				
<b>1. Sources</b>				
Does the VCS Program methodology indicate key documents, methodologies and/or projects upon which the proposed methodology /revision is based? Are any modules or tools identified to which the methodology/revision refers? Is information on author of methodology/revision included, if desired?	1	<p>The methodology makes use of (part of) the following approved methodologies and methodological tools:</p> <ul style="list-style-type: none"> <li>A/R CDM consolidated baseline and monitoring methodology AR-ACM0001 "Afforestation or reforestation of degraded land"</li> <li>A/R CDM Methodological tool "Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities"</li> <li>A/R CDM methodological tool: "Calculation of the number of sample plots for measurements within A/R CDM project activities"</li> <li>A/R CDM methodological tool: "Tool for testing significance of GHG emissions in A/R CDM project activities"</li> </ul> <p>In case there is a conflict between the CDM tool requirements and the VCS rules, the VCS Program Methodology requires that VCS rules must be followed, as outlined in AFOLU Guidance: "Additional guidance for VCS Afforestation, Reforestation and Revegetation projects using CDM Afforestation/Reforestation Methodologies"</p> <p>This methodology uses the latest versions of the following module:</p> <ul style="list-style-type: none"> <li>VCS module VMD0019 "Methods to project future conditions"</li> </ul>	✓	✓
<b>2. Summary Description of the Methodology</b>				
Does the VCS Program methodology provide a brief summary description of the methodology/revision, including the main methodological steps?	1	<p>The methodology provides a brief summary description of:</p> <ol style="list-style-type: none"> <li>Scope</li> <li>Proxies to be applied</li> </ol>		

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl				
		<ul style="list-style-type: none"> <li>3. Procedures to be applied</li> <li>4. Inclusion of transient peaks of CH3 that might occur</li> <li>5. Addressing of anthropogenic peat fires</li> <li>6. Leakage</li> <li>7. Determination of project's net GHG benefits</li> </ul>						
<p>Does the VCS Program methodology indicate in the table below whether the methodology uses a project, performance or activity method for determining additionality, and a project or performance method for determining the crediting baseline (see the VCS Standard for further information on these methods)?</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="background-color: #e1eef6;">Additionality</td> <td>&lt;Project/Performance/Activity Method&gt;</td> </tr> <tr> <td style="background-color: #e1eef6;">Crediting Baseline</td> <td>&lt;Project/Performance Method&gt;</td> </tr> </table>	Additionality	<Project/Performance/Activity Method>	Crediting Baseline	<Project/Performance Method>	1	The methodology uses a project methodology to determine additionality and the crediting baseline. The table foreseen for the mentioned indication is used as required.	✓	✓
Additionality	<Project/Performance/Activity Method>							
Crediting Baseline	<Project/Performance Method>							
<b>3. Definitions</b>								
Does the VCS Program methodology provide definitions of key terms and acronyms that are used in the methodology/revision?	1	<b>Corrective Action Request 1.</b> Ensure that all key terms and acronyms used in the methodology are listed as required e.g. PDT, NEE, NEP, etc.	<b>CAR</b>	✓				
<b>4. Applicability Conditions</b>								
<b>Applicability conditions (VCS v3.5 Section 4.3)</b>								
Does the VCS Program methodology identify the project activities to which it applies?	1	The methodology clearly identifies that it applies to: Projects that rewet peatlands that have been drained for forestry that is not or no longer profitable (as determined on the basis of annual reports, annual accounts, market studies, government studies, or land use planning reports and documents), or peat extraction that has been abandoned at least 2 years prior to the project start date, or agriculture that has	<b>CR</b>	✓				

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
		<p>been abandoned at least 2 years prior to the project start date or will be continued in the project scenario, or where drainage of additional peatland for new agricultural sites will not occur or is prohibited by law. Post-rewetting land use is limited to forestry (including biomass production but excluding IFM and REDD activities), agriculture (excluding ALM activities), nature conservation/recreation, or a combination of these activities. Peat extraction does not occur.</p> <p><b><u>Clarification Request 2.</u></b>                      Applicability condition (page 5-6):</p> <ul style="list-style-type: none"> <li>a) Define the term “agriculture”; clarify what kind of impact agriculture will have on uncertainty when applying the GEST approach</li> <li>c) Clarify how it is ensured that collection of fire wood does not lead to leakage</li> <li>d) i) l) Specify the consequence if burning of biomass and peatland or the use of N-fertilizer does occur in the project scenario (e.g. how can a project lose its eligibility after starting?) Clarify if these are actually applicability conditions, or should rather be monitored</li> <li>e) f) g) j) Clarify if these requirements are applicability conditions (it might rather be a description of the project implementation than an applicability conditions)</li> <li>k) Clarify the meaning of “can” in the applicability condition k</li> </ul>		

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		<p>Clarify if N2O emissions will generally decline under all preconditions in terms of dryness at start of rewetting activity</p> <p>Clarify if further applicability conditions are required to encompass the limitations of GEST (e.g. water tables below 30 cm)</p>		
Does the VCS Program methodology establish criteria that describe the conditions under which the methodology can (and cannot, if appropriate) be applied?	1	The methodology lists 13 applicability conditions under which the methodology is applicable	✓	✓
Does the VCS Program methodology apply any applicability conditions set out in tools or modules?	1	n.a.	n.a.	n.a.
<b>5. Project Boundary</b>				
<b>Project boundary (VCS v3.5 Section 4.4)</b>				
Does the VCS Program methodology include determination criteria or procedures for describing the project boundary?	1	<p>The methodology distinguishes between geographic boundaries and temporal boundaries.</p> <p><u>Temporal boundaries:</u></p> <p>Project Crediting Period. PPs have to determine the project crediting period, the project crediting period start date and the project start date. Further are PPs obliged to provide evidence showing that the area was not drained or converted to create GHG credits unless a conversion took place before 1 January 2008.</p> <p>Peat Depletion Time Peat depletion may be accelerated by peat fires and is attained if the peat has disappeared or if a stable water table inhibits further oxidation of the peat.</p> <p><u>Geographic boundaries:</u> As geographic boundaries are determined by:</p> <p><b>1. Stratification</b></p>	<b>CR 6</b>	✓

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		<p>Strata are to be defined on the basis of peat depth , water table depth (e.g. at 0 cm defining a level of zero emission, a deep water table depth defining the high end of emissions, and arbitrary levels in between), tree cover and/or vegetation composition, or expected changes in these.</p> <p>The project area is require to be stratified by peat depth. The methodology provides requirements a) to c) for the stratification.</p> <p>Requirements are provided to create a peat depth map.</p> <p>Strata must be spatially discrete and identifiable respectively.</p> <p>Baseline stratification must remain fixed until a reassessment of the baseline scenario occurs.</p> <p>The area of channels and ditches must be quantified and treated as separate strata.</p> <p><b>2. Peatland areas eligible for carbon crediting</b> The maximum eligible quantity of GHG emission reductions by rewetting is limited to the difference between the remaining peat carbon stock in the project and baseline scenarios after 100 years (total stock approach), or the difference in cumulative carbon loss in both scenarios over a period of 100 years since project start (stock loss approach).</p> <p><b>3. Buffer zones</b> Under the applicability condition of this methodology, the project boundary must be designed such that the project GHG benefits are not affected by drainage activities that occur outside the project area (e.g. enhanced drainage, groundwater extraction, and changing water supply). This can be achieved either</p>		

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
		<p>by an appropriate design (e.g. by establishing an impermeable dam) or by a buffer zone within the project boundary for which conservatively no GHG benefits are accounted. This buffer zone, if employed, must be mapped and is not eligible for carbon crediting.</p> <p><b><u>Clarification Request 3.</u></b></p> <p>Ad 1: Stratification:</p> <ul style="list-style-type: none"> <li>Clarify why it is conservative to include areas that are shallower than required as long as they are connected to areas that meet the requirements?</li> </ul> <p>Ad 3 Buffer zones (p 11/12):</p> <ul style="list-style-type: none"> <li>Provide guidance for the establishment of a buffer zone</li> <li>Clarify which parameters need to be monitored in order to ensure/proof, that extensive drainage outside the project area does not affect the water level within the project area.</li> </ul>		
Does the VCS Program methodology include determination criteria or procedures for identifying and assessing GHG sources, sinks and reservoirs relevant to the project (controlled by the project proponent, related to the project or affected by the project) and the baseline scenarios?	1	The methodology provides procedures for identifying and assessing GHG sources, sinks and reservoirs relevant to the project activity and the baseline scenario.	✓	✓
Does the VCS Program methodology give a justification for GHG sources, sinks and reservoirs included or excluded?	1	The methodology gives plausible justifications for the GHGs selected.	✓	✓
In identifying GHG sources, sinks and reservoirs relevant to the project does the VCS Program methodology set out criteria and procedures for identifying and assessing GHG sources, sinks and reservoirs that are controlled by the project proponent, related to the project or affected by the project (i.e., leakage)?	1	The methodology provided and explains possible sources of leakage in Section 8.4.	✓	✓

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl														
<p>In identifying GHG sources, sinks and reservoirs relevant to the baseline scenario, does the VCS Program methodology:</p> <p>1) Set out criteria and procedures used for identifying the GHG sources, sinks and reservoirs relevant for the project?</p> <p>2) Where necessary, explain and apply additional criteria for identifying relevant baseline GHG sources, sinks and reservoirs?</p> <p>3) Compare the GHG sources, sinks and reservoirs identified for the project with those identified in the baseline scenario, to ensure equivalency and consistency?</p>	1	<p>Requirements 1) and 2) see comments above.</p> <p><b><u>Corrective Action Request 2.</u></b> Apply the table format provided by the VCS Methodology Template</p>	CAR	✓														
<b>B 3 Project Boundary (AFOLU v3.4 Section 4.3)</b>																		
<p>Does the VCS Program methodology include the relevant carbon pools as per VCS requirement?</p> <table border="1"> <tbody> <tr> <td>Aboveground tree biomass</td> <td>Y</td> </tr> <tr> <td>Above-ground non-tree biomass</td> <td>O</td> </tr> <tr> <td>Below-ground biomass</td> <td>O</td> </tr> <tr> <td>Litter</td> <td>N</td> </tr> <tr> <td>Dead wood</td> <td>O</td> </tr> <tr> <td>Soil</td> <td>Y</td> </tr> <tr> <td>Wood products</td> <td>O</td> </tr> </tbody> </table> <p><i>Y: Carbon pool shall be included.</i> <i>S: Carbon pool shall be included when significant</i> <i>N: Carbon pool does not have to be included,</i> <i>O: Carbon pool is optional</i></p>	Aboveground tree biomass	Y	Above-ground non-tree biomass	O	Below-ground biomass	O	Litter	N	Dead wood	O	Soil	Y	Wood products	O	1	<p>The methodology includes aboveground tree biomass, aboveground non-tree biomass as part of GEST, below ground tree biomass, Litter as part of GEST and soil in line with the VCS requirement for PRC methodologies.</p> <p><b><u>Corrective Action Request 3.</u></b> Provide description why pools” Wood products” and “Dead Wood” are optional for project developers applying the methodology); or provide justification why carbon pools can be excluded.</p>	CAR	✓
Aboveground tree biomass	Y																	
Above-ground non-tree biomass	O																	
Below-ground biomass	O																	
Litter	N																	
Dead wood	O																	
Soil	Y																	
Wood products	O																	
<p>Does the VCS Program methodology establish the criteria and procedures by which a pool or GHG source may be determined to be de minimis (less than 5% of total GHG benefit)?</p>	1	<p>The methodology provides criteria and procedures by which a pool of GHG source may be determined to be de minimis. This might be either peer reviewed literature or the CDM A/R methodological tool “Tool for testing</p>	✓	✓														

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<p><i>For example, peer reviewed literature or the CDM A/R methodological tool for testing significance of GHG emissions in A/R CDM project activities may be used to determine whether decreases in carbon pools and increases in GHG emissions are de minimis</i></p> <p><i>Further, the following GHG sources may be deemed de minimis and need not be accounted for:</i></p> <p><i>2) ARR, IFM, REDD, ACoGS and <b>WRC</b>: GHG emissions from the removal or burning of herbaceous vegetation and collection of non-renewable wood sources for fencing of the project area.</i></p> <p><i>3) ARR, IFM, REDD, ACoGS and <b>WRC</b>: Fossil fuel combustion from transport and machinery use in project activities. Where machinery use for selective harvesting activities may be significant in IFM project activities as compared to the baseline or where machinery use for earth moving activities may be significant in WRC project activities as compared to the baseline, emissions shall be accounted for if above de minimis, in accordance with this Section 4.3.4. Fossil fuel combustion from transport and machinery use in rewetting of drained peatland and conservation of peatland project activities need not be accounted for.</i></p>		significance of GHG emissions in A/R CDM project activities”.		
<p>Does the VCS Program methodology establish criteria and procedures by which a project proponent may determine a carbon pool or GHG source to be conservatively excluded?</p> <p><i>Specific carbon pools and GHG sources do not have to be accounted for if their exclusion leads to conservative estimates of the total GHG emission reductions or removals generated.</i></p>	1	The methodology conservatively neglected accumulation of peat in the project scenario. Burning of biomass is conservatively not accounted for in the baseline.	✓	✓
<p><i>Reductions of N<sub>2</sub>O and/or CH<sub>4</sub> emissions are eligible for crediting if in the baseline scenario the project area would</i></p>	1	n.a.	n.a.	n.a.

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<i>have been subject to livestock grazing, rice cultivation, burning and/or nitrogen fertilization.</i>				
<i>Reductions of CH<sub>4</sub> emissions are eligible for crediting if fire would have been used to clear the land in the baseline scenario.</i>	1	Burning of biomass is conservatively not accounted for in the baseline.	✓	✓
Does the VCS Program methodology include CH <sub>4</sub> emissions in the project boundary?  <i>As transient peaks of CH<sub>4</sub> may arise after rewetting peatland.</i>	1	CH <sub>4</sub> is accounted for as emission spike upon rewetting is likely to occur during the transient period.  <b><u>Corrective Action Request 4.</u></b> <ul style="list-style-type: none"> <li>Clarify if CH<sub>4</sub> emissions occur exclusively in a transient phase or if under certain circumstances a permanent CH<sub>4</sub> emission can be launched by rewetting activities.</li> <li>Provide procedures for the quantification of possible spikes of CH<sub>4</sub> emission.</li> <li>Clarify if the exclusion of CH<sub>4</sub> emissions of channels and ditches in the project scenario is in compliance with IPCC guidelines and conservative</li> </ul>	<b>CAR 5</b>	✓
Does the VCS Program methodology establish the criteria and procedures by which the CH <sub>4</sub> source may be deemed de minimis or conservatively excluded ( <i>see also requirements above</i> )?	1	See comment above.	See comment above	✓
Does the VCS Program methodology establish the criteria and procedures by which the N <sub>2</sub> O source may be deemed de minimis or conservatively excluded ( <i>see also requirements above</i> )?  <i>For RWE projects, N<sub>2</sub>O emissions shall be included in the project boundary.</i>	1	N <sub>2</sub> O is not accounted for, as those emissions will decline in the project scenario compared to the baseline scenario. Therefore, N <sub>2</sub> O emissions are assumed not to be accounted for. Potential PPs are obliged to demonstrate the decline of N <sub>2</sub> O emissions under the project circumstances  <b><u>Corrective Action Request 5.</u></b> Specify the process/requirements to demonstrate the decline N <sub>2</sub> O in the project scenario as assumed in the methodology	<b>CAR 6</b>	✓
<b>6. Procedures for Determining the baseline scenario</b>				

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<b>Baseline Scenario (VCS v3.5 Section 4.5)</b>				
Does the VCS Program methodology establish criteria and procedures for identifying alternative baseline scenarios and determining the most plausible scenario, taking into account: <ol style="list-style-type: none"> <li>1) The identified GHG sources, sinks and reservoirs.</li> <li>2) Existing and alternative project types, activities and technologies providing equivalent type and level of activity of products or services to the project.</li> <li>3) Data availability, reliability and limitations.</li> <li>4) Other relevant information concerning present or future conditions, such as legislative, technical, economic, socio-cultural, environmental, geographic, site-specific and temporal assumptions or projections?</li> </ol>	1	<p>The methodology requires the application of the most recent version of the VCS Tool: "Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities" for identifying the potential alternative baseline land use scenarios in the project boundary</p> <p>In case there is a conflict between the CDM tool requirements and the VCS rules, the VCS Program Methodology requires that VCS rules must be followed, as outlined in AFOLU Guidance: "Additional guidance for VCS Afforestation, Reforestation and Revegetation projects using CDM Afforestation/Reforestation Methodologies"</p>	✓	✓
<b>Baseline Scenario (AFOLU v3.4 Section 4.4)</b>				
Does the VCS Program methodology follow an internationally accepted GHG inventory protocol, such as the IPCC 2006 Guidelines for National GHG Inventories when determining and establishing a baseline scenario?	1	See comment above	✓	✓
Do the criteria and procedures identified by the VCS program methodology for identifying alternative RWE baseline scenarios take into account: <ol style="list-style-type: none"> <li>1) The current and historic hydrological characteristics of the watershed or coastal plain, and the drainage system in which the project occurs.</li> <li>2) The long-term average climate variables influencing water table depths and the timing and quantity of water flow. The long-term average climate variables shall be determined using data from climate stations that are representative of the project area and shall include at least 20 years of data.</li> </ol>	1	<ol style="list-style-type: none"> <li>1) The methodology requires the application of the most recent version of the VCS Tool: "Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities" for identifying the potential alternative baseline land use scenarios in the project boundary</li> <li>2) The VCS Project Methodology requires the inclusion of long-term average climate variables up to at least 20 years</li> </ol>	✓	✓

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
3) Planned water management activities (such as dam construction)?				
<p>Do the criteria and procedures identified by the VCS program methodology for identifying alternative RWE baseline scenarios also consider relevant non-human induced rewetting brought about by:</p> <ol style="list-style-type: none"> <li>1) Collapsing dikes or ditches that would have naturally failed over time without their continued maintenance.</li> <li>2) Progressive subsidence of deltas or peatlands leading to a rise in relative water table depths, thus reducing CO<sub>2</sub> emissions but possibly increasing CH<sub>4</sub> emissions in freshwater systems.</li> <li>3) Non-human induced elevation of non-vegetated wetlands to build vegetated wetlands. Deltaic systems with high sediment load from rivers often do this naturally, and this should be counted as part of the baseline?</li> </ol>	1	<p>In section 8.1.3.1 the VCS Program Methodology requires:</p> <ol style="list-style-type: none"> <li>1) In case of abandonment of pre-project land use in the baseline scenario, the baseline scenario must also consider - based on expert judgment taking account of verifiable local experience and/or studies and/or scientific literature and in a conservative way - non-human induced rewetting brought about by collapsing dikes or ditches that would have naturally closed over time, and progressive subsidence, leading to raising relative water levels, increasingly thinner aerobic layers and reduced CO<sub>2</sub> emission rates.</li> <li>2) Unless alternative evidence is provided, annual subsidence (as derived from subsidence - water table observations or models) must be assumed to result in a 1:1 proportional rise the water table relative to the surface in the area between ditches.</li> </ol> <p style="text-align: center;"><b><u>Clarification Request 4.</u></b></p> <p>Explain the 1 : 1 proportional rise assumed.</p> <ol style="list-style-type: none"> <li>3) N.a.</li> </ol>	CR	✓
<p>Do the criteria and procedures identified by the VCS program methodology for identifying fire in the baseline scenario require:</p> <ul style="list-style-type: none"> <li>• to demonstrate with fire maps and historical databases on fires that the project area is now and in future would be under risk of anthropogenic fires?</li> <li>• to consider any relevant current and planned land use conditions that may affect the occurrence of fire in order</li> </ul>	1	<p>THE VCS Program Methodology addresses anthropogenic peat fires occurring in drained peatland and establishes a conservative default value, based on fire occurrence and extension in the project area in the baseline scenario, so as to avoid the direct assessment of GHG emissions from fire in the baseline and the project scenarios.</p> <p>To do so PPs have to provide:</p>	✓	✓

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to establish the most plausible scenario for fire in the baseline.		<ul style="list-style-type: none"> <li>evidence using statistics and/or maps in official reports and/or remotes sensing data over the 10-year period ending 2 years before the project start date;</li> <li>current and historic fire statistics and/or fire maps for the project area, in combination with information on current and future land use in order to prove that the project area is now, and in future will be, under risk of anthropogenic peat fires, as demonstrated by</li> </ul>		
<p><i>Many land use activities on wetlands (eg, aquaculture and agriculture) involve the exposure of wetland soils to aerobic decomposition through piling, dredging (expansion of existing channels) or channelization (cutting through wetland plains). Where relevant, WRC baseline scenarios shall account for such processes as they expose disturbed carbon stocks to aerobic decomposition thus increasing the rate of organic matter decomposition and GHG emissions that may continue for years from the stockpiles.</i></p> <p>Does the VCS Program methodology include credible methods for quantifying and forecasting GHG emissions from such degradation?</p>	1	Activities involving the exposure of wetland soils to aerobic decomposition are not allowed by the applicability conditions defined by the methodology	✓	✓
<p>Where relevant, are PPs required to take account of hydrological processes that lead to increased carbon burial and GHG reductions within the project area when identifying the WRC baseline scenarios?</p> <p><i>Such processes include changes in the landscape form (ie, construction of levees to constrain flow and flooding patterns or dams to hold water) and changes in land surface (i.e., forest clearing, and ditching or paving leading to intensified run-off).</i></p>	1	PPs are required to collect data historic data of land use and drainage systems, etc.	✓	✓
Where relevant, are PPs required to take account of processes within the project area that reduce sediment supply	1	See above	✓	✓

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Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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<p>associated with changes in the landscape (e.g., construction of upstream dams or stabilization of eroding <i>feeder</i> cliffs along the coast) when identifying the WRC baseline scenario?</p> <p><i>The supply of sediment varies over time and the time-averaged delivery of sediment shall be considered.</i></p>				
<p>Where relevant, does the VCS Program methodology establish criteria and procedures for identifying wetland erosion and/or migration resulting from sea level rise in the baseline scenario on the basis of wetland maps, historical trend data, future projection of sea level rise and how changes in management would impact carbon stocks.</p>	1	n.a.	✓	✓
<p>Where relevant, do the criteria and procedures identified by the VCS program methodology for identifying alternative baseline scenarios require the project proponent to take into account current and historic management activities outside the project area that have significantly impacted or may significantly impact the project area, including the following:</p> <ol style="list-style-type: none"> <li>1) Disruption to or improvement of natural sediment delivery, as this will alter the rate and magnitude of coastal wetlands response to sea level rise.</li> <li>2) Upstream dam construction, as this will alter water and sediment delivery, as well as salinity in coastal lowlands.</li> <li>3) Construction of infrastructure inland of coastal wetlands, as this will impair wetland capacity to migrate landwards with sea level rise.</li> <li>4) Construction of coastal infrastructure, as this can impair sediment movement along shorelines causing wetland loss and increasing risk of carbon emissions with sea level rise.</li> </ol>	1	Under the applicability condition of this methodology, the project boundary must be designed such that the project GHG benefits are not affected by drainage activities that occur outside the project area (e.g. enhanced drainage, groundwater extraction, and changing water supply).	✓	✓

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<b>7. Procedure for demonstrating additionality</b>				
<b>A 5 Additionality (VCS v3.5 Section 4.6)</b>				
Does the VCS Program methodology assess additionality by doing one of the following: 1) Referencing and requiring the use of an appropriate additionality tool that has been approved under the VCS or an approved GHG program; 2) Developing a full and detailed procedure for demonstrating and assessing additionality directly within the methodology; or 3) Developing a full and detailed procedure for demonstrating and assessing additionality in a separate tool, which shall be approved via the methodology approval process, and referencing and requiring the use of such new tool in the methodology?	1	The methodology requires the application of the most recent version of the VCS Tool: "Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities" for identifying the potential alternative baseline land use scenarios in the project boundary  In case there is a conflict between the CDM tool requirements and the VCS rules, the VCS Program Methodology requires that VCS rules must be followed, as outlined in AFOLU Guidance: "Additional guidance for VCS Afforestation, Reforestation and Revegetation projects using CDM Afforestation/Reforestation Methodologies"	✓	✓
<b>8. Quantification of GHG emissions and removals</b>				
<b>Quantification of GHG emission reduction and removals (VCS v3.5 Section 4.7)</b>				
Does the VCS Program methodology establish criteria and procedures for quantifying GHG emissions and/or removals and/or carbon stocks, for the selected GHG sources, sinks and/or reservoirs, separately for the project (including leakage) and baseline scenarios?	1	The VCS Program methodology establish criteria and procedures for quantifying GHG emissions and/or removals and/or carbon stocks, for the selected GHG sources, sinks and/or reservoirs, separately for the project (including leakage) and baseline scenarios. For further details see comments below	✓	✓
<b>8.1 Baseline emissions</b>				
<b>B 5 Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5)</b>				
Does the VCS Program methodology establish procedures to quantify the GHG emissions or removals for the baseline scenario? Does the VCS Program methodology use The IPCC 2006 Guidelines for National GHG Inventories or the IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change	1	Baseline emissions are quantified by determining carbon stock changes in non-peat carbon pools, GHG emissions as a result of peat oxidation due to drainage or a combination of both. In addition, emissions as a	<b>CAR 6</b> <b>CAR 7</b>	✓

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<p>and Forestry as guidance for quantifying increases or decreases in carbon stocks and GHG emissions? Does the VCS Program methodology require to follow the IPCC Guidelines in terms of quality assurance/quality control (QA/QC) and uncertainty analysis?</p> <p><i>The IPCC 2006 Guidelines for National GHG Inventories may be referenced to establish procedures for quantifying GHG emissions/removals associated with the following carbon pools including:</i></p> <p>1) Litter;</p> <p>2) Dead wood;</p> <p>3) Soil (methodologies may follow the IPCC guidelines for the inclusion of soil carbon, including the guidelines that are in sections not related to forest lands); and</p> <p>4) Belowground biomass (estimated using species-dependent root-to-shoot ratios, the Mokany et al. ratios and equations, or the Cairns equations).</p>		<p>result of peat combustion due to peatland fires can be determined.</p> <p>In section 8.1.2.2 of the VCS Program Methodology provides procedures to calculate net carbon stock changes in tree biomass (aboveground/belowground biomass) consistent with Volume 4, Chapter 2 of IPCC 2006 Guidelines</p> <p>In section 8.1.3.1 and 8.1.3.2 the VCS Program Methodology provides procedures to estimate GHG Emission due to peat drainage following the GEST approach. The GEST approach utilizes documented relationships between CO2 emissions and vegetation types which is consistent with Section 4.5.27 of the VCS AFOLU Requirements.</p> <p>In section 9.3.2 of the VCS Program Methodology guidance regarding quality assurance/quality control methods are provided that are consistent with Volume 1, Chapter 6 of IPCC 2006 Guidelines</p> <p>In sections 8.5.2 and 9.3.2 of VCS Program Methodology guidance regarding uncertainty analysis and reduction of uncertainties are provided that follows Volume 1, Chapter 3 of IPCC 2006 Guidelines</p> <p>Section 9.3.3 of the VCS Program Methodology specifically references Volume 1, Chapter 2 of IPCC 2006 Guidelines with respect to uncertainties arising from expert judgment</p> <p><b>Corrective Action Request 6.</b> Modeling / predicting future baseline condition (pages 21-22):</p> <ul style="list-style-type: none"> <li>Provide a minimum set of requirements for the</li> </ul>		

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
		<p>modeling/predicting of the water level in order to apply the GEST approach or the estimation of GHG emissions based on water level respectively.</p> <ul style="list-style-type: none"> <li>Define which parameters are required to calibrate the water table. Ensure that these parameters are included in section 9.1 of the methodology.</li> <li>Provide description how future GEST types are estimated in particular over time</li> </ul> <p><b>Corrective Action Request 7.</b> Procedure to determine GHG emissions in the baseline with GEST (pages 21-22 and 65-69)</p> <ul style="list-style-type: none"> <li>Provide clear procedures how to define a Site Type for GEST in the field (e.g. if vegetation is used to define a site type, which criteria must be fulfilled to determine the boundary of a site type? It shall be clearly describe to enable project developer and auditors to apply such a procedure</li> <li>Provide clear procedures how to determine GHG emissions in a site type (of GEST) – parameters <math>GHG_{GESTbsl-CO2}</math> and <math>GHG_{GESTbsl-CH4}</math>. It shall be clearly describe to enable project developer and auditors to apply such a procedure. Clarify if additional procedure and description is required for natural succession, cultivated land and bare peat.</li> <li>Include clear procures how to validate <math>GHG_{GESTbsl-CO2}</math> and <math>GHG_{GESTbsl-CH4}</math></li> <li>Provide clear procedures how to establish project-specific values for <math>GHG_{WLbsl-CO2}</math> and <math>GHG_{WLbsl-CH4}</math> (stepwise procedures)</li> </ul>		

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Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
		<ul style="list-style-type: none"> <li>Clarify if it is required to validate emissions based on GEST or project specific values for <math>GHG_{WLbsl-CO_2}</math> and <math>GHG_{WLbsl-CH_4}</math></li> <li>Provide a description on how to determine the uncertainty for GHG emission estimation related to the GEST approach / Specify the conditions under which the GEST approach leads to estimations of GHG emissions with an acceptable certainty</li> <li>Provide procedures to define and justify the accuracy defined or conservativeness in the case values from appropriate literature sources are applied for <math>GHG_{WLbsl-CO_2}</math> and <math>GHG_{WLbsl-CH_4}</math></li> </ul> <p>Emissions from fire in the baseline See comments on page 34 below,</p>		
<p><i>Where carbon would have been lost in the baseline scenario due to land use conversion or disturbance, GHG emissions from soil carbon, belowground biomass, wood products and dead wood carbon pools generally occur over a period of time following the event. It shall not be assumed that all GHG emissions from these carbon pools in the project categories specified below occur instantaneously or within a short period of time.</i></p> <p>Does the VCS Program methodology set out criteria and procedures to reliably establish the pattern of carbon loss over time using empirical evidence, such as studies that use primary data or locally calibrated models, or does the VCS Program methodology apply an appropriate decay model (such as a linear or exponential decay function) that is scientifically sound, based on empirical evidence and not likely to overestimate early carbon losses?</p>	1	<p>Section 5.1 of the VCS Program Methodology provides procedures to estimate the PDT.</p>	✓	✓
<p><i>Where appropriate, belowground biomass, soil carbon and dead wood decay models shall be calibrated.</i></p>	1	n.a.	n.a.	n.a.

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
Where models are calibrated using measurement plots or data from research plots does the VCS Program methodology require sound and reliable measurement methods to be applied (as set out in Section 4.8.3.)?				
As the Soil carbon pool is included in the project boundary, does the VCS Program methodology opt to comply with the requirement to establish a pattern of carbon loss over time by incorporating the following procedure:  3) Is the pattern of carbon loss modeled based upon a 20-year linear decay function, taking into account the depth of affected soil layers and the total portion of the pool that would have been lost?	1	n.a.	n.a.	n.a.
Does the VCS Program methodology establish criteria and procedures for quantifying GHG emissions/removals in the baseline scenario that:  1) For WRC activities on peatland the peat depletion time (PDT) shall be included in the quantification of GHG emissions and removals in the baseline scenario, and for non-peat wetlands, the soil organic carbon depletion time (SDT) shall be included in the quantification of GHG emissions and removals in the baseline scenario, noting the following:  a) PDT is the time it would have taken for the peat to be completely lost due to oxidation or other losses, or for the peat depth to reach a level where no further oxidation or other losses occur. No GHG emission reductions may be claimed for a given area of peatland for longer than the PDT. The procedure for determining the PDT shall conservatively consider peat depth and oxidation rate within the project boundary and may be estimated based on the relationship between water table depth, subsidence	1	1) Section 5.1 of the VCS Program Methodology provides procedures to estimate the PDT. The PDT has to be reassessed every 10 years as outlined in Section 6.2.  2) The VCS Program Methodology uses the GEST approach and the water level to estimate GHG emissions.  3) Net baseline GHG emissions are based on the parameters/values estimated as described in 1) and 2)	✓	✓

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>(eg, using peat loss and water table depth relationships established in scientific literature), and peat depth in the project area. The PDT is considered part of the baseline and thus shall be reassessed with the baseline in accordance with Section 3.1.10.</p> <p>b) SDT is the time it would have taken for the soil organic carbon to be lost due to oxidation or to reach a steady stock where no further losses occur. No GHG emissions reductions may be claimed for a given area of wetland for longer than the SDT. The procedure for determining the SDT shall conservatively consider soil organic carbon content and oxidation rate within the project boundary and may be estimated based on the relationship between water table depth and soil organic carbon content in the project area. Where wetland soils are subject to sedimentation or erosion, the procedure for determining the SDT shall conservatively account for the associated gain or loss of soil organic carbon. This assessment is not mandatory in cases where soil organic carbon content on average may be deemed <i>de minimis</i> as set out in Section 4.3.4.</p> <p>2) Any applicable and justifiable proxies, as established in scientific literature, for GHG emissions projected throughout the project crediting period shall be estimated.</p> <p>3) Net baseline GHG emissions during the project crediting period, including emissions associated with the estimated water table depths, salinity or another justifiable proxy for GHG emissions, plus emissions from other activities such as biomass loss or fires, as well as carbon sequestration, where applicable, shall be estimated.</p>				

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
Does the VCS Program methodology require to estimate the Baseline emissions conservatively and to consider that the water table depth in the project area may rise during the project crediting period due to any or all of the causes identified in alternative baseline scenarios as set out in Section 4.4.11. of the AFOLU Requirements?	1	<p>In section 8.1.3.1 the VCS Program Methodology requires:</p> <p>In case of abandonment of pre-project land use in the baseline scenario, the baseline scenario must also consider - based on expert judgment taking account of verifiable local experience and/or studies and/or scientific literature and in a conservative way - non-human induced rewetting brought about by collapsing dikes or ditches that would have naturally closed over time, and progressive subsidence, leading to raising relative water levels, increasingly thinner aerobic layers and reduced CO<sub>2</sub> emission rates.</p> <p>Unless alternative evidence is provided, annual subsidence (as derived from subsidence - water table observations or models) must be assumed to result in a 1:1 proportional rise the water table relative to the surface in the area between ditches.</p>	✓	✓
<p><i>The procedure for quantifying CO<sub>2</sub> emissions for the baseline emissions may be estimated through hydrological modeling or the modeling of proxies for GHG emissions in place of direct on-site gas flux measurements. The procedure may include estimation through well-documented relationships between CO<sub>2</sub> emissions and other variables such as vegetation types, water level or subsidence, or remote sensing techniques that adequately assess and monitor soil moisture. Because of the dominant relationship between water level and CO<sub>2</sub> emissions, drainage depth can be used as a proxy for CO<sub>2</sub> emissions in the absence of emissions data.</i></p> <p>Where relevant, does the VCS Program methodology require that the micro-topography of the project area (i.e., the proportion of hummocks and hollows and vegetation patterns) is considered?</p>	1	<p>The VCS Program Methodology does not require the consideration of the micro-topography.</p> <p><b><u>Clarification Request 5.</u></b> Clarify why the micro-topography does not need to be considered e.g. in form of a digital terrain model when modeling/estimating the water table.</p>	<b>CR 5</b>	✓

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Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
Does the VCS Program methodology calculate net GHG emissions reductions using the same methods that are used for the baseline estimates, but using monitored data.	1	Emission reductions from the project activity are estimated the same way as for the baseline scenario on following the GEST approach and water levels in the project area.	✓	✓
Where relevant, does the VCS Program methodology assess the fate of transported organic matter as a result of sedimentation, erosion and oxidation conservatively based on peer-reviewed literature and considering the following:  1) It is conservative to not account for the loss of sediment from the project area in the baseline scenario.  2) It is conservative to not account for further sedimentation in the project area in the project scenario. Where soil carbon is included in the project boundary, sedimentation shall be accounted for so that carbon sequestration resulting from the growth of vegetation can be estimated separately from carbon accumulated in sedimentation. In the absence of the project activity, such high carbon silt would be washed out to sea and would not have been emitted in the baseline and as such carbon accumulated in sedimentation is not eligible for crediting	1	No loss of sediment can expected. Amounts of POCs is limited.	✓	✓
<i>With respect to the soil carbon pool, the maximum quantity of GHG emission reductions that may be claimed by the project shall not exceed the net GHG benefit generated by the project 100 years after its start date. This limit is established because in wetlands remaining partially drained or not fully rewetted, or where drainage continues, the soil carbon will continue to erode and/or oxidize leading to GHG emissions and eventually depletion of the soil carbon. To determine this long-term net GHG benefit, projects shall estimate the remaining soil carbon stock adjusted for any project emissions and leakage emissions in both the baseline and project scenarios at the 100-year mark, taking into ac-</i>	1	In section 5.2 of the VCS Program Methodology a significant difference in the net GHG benefit between the baseline and project scenarios for at least 100 years is required.  <b><u>Clarification Request 6.</u></b> Specify how “significant differences” can be identified	<b>CR 6</b>	✓

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<p><i>count uncertainties in modeling and using verifiable assumptions. Projects with a PDT or SDT in the project scenario of less than 100 years or unable to establish and demonstrate a significant difference in the net GHG benefit between the baseline and project for at least 100 years are not eligible for crediting of the soil carbon pool.</i></p> <p>Does the VCS Program methodology require to establish and demonstrate a significant difference in the net GHG benefit between the baseline and project for at least 100 years?</p>				
<p><i>Emissions of CH<sub>4</sub> from drained or saline wetlands may be excluded in the baseline scenario where it may be deemed de minimis (as set out in Section 4.3.4 of the AFOLU requirement) or conservatively excluded (as set out in Section 4.3.4 of the AFOLU requirement)</i></p>	1	Emissions of CH <sub>4</sub> in the baseline scenario are excluded	✓	✓
<p>As WRC activities are likely to influence CH<sub>4</sub> emissions, does the VCS Program methodology establish procedures to estimate such emissions, and establish the criteria and procedures by which the source may be deemed de minimis (as set out in Section 4.3.4) or conservatively excluded (as set out in Section 4.3.4)?</p> <p>Where relevant, does the VCS Program methodology consider the micro-topography of the project area (ie, the proportion of hummocks and hollows and vegetation patterns)?</p>	1	n.a.	n.a.	n.a.
<p>Does the VCS Program methodology in case of RWE projects on peatland that include an activity designed specifically to reduce incidence and severity of fires deduct the amount of peat assumed to burn when estimating peat depletion times?</p> <p><i>Where peat depletion times are estimated based only on oxidation rates due to drainage, the outcome would be a longer period than when first subtracting the amount of peat that is considered to burn in the baseline.</i></p>	1	<p>Section 5.1 of the VCS Program Methodology defines a parameter to quantify peat loss due to subsidence and fire in the baseline scenario. Project specific peat depletion is calculated based on the value of the parameter.</p> <p><b>Clarification Request 7.</b> Clarify if <math>Rate_{peatloss-BSL,i}</math> is constant or will vary over time due to sagging and oxidation.</p>	<b>CR 7</b>	✓

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<p>Does the VCS Program methodology in case of RWE projects on peatland explicitly addressing anthropogenic peatland fires occurring in drained peatlands establish procedures for determining or conservatively estimating the baseline emissions from peatland fire occurring in the project area using defensible data (such as fire maps, historical databases on fires, and where appropriate, combined with temperature and precipitation data)?</p> <p><i>Methods for estimating GHG emissions from fire may be based on the IPCC 2006 Guidelines for National GHG Inventories, or other methods based on scientific, peer-reviewed literature.</i></p>	1	<p>Section 8.3 of VCS Program Methodology contains a procedure for estimating baseline emissions from peatland fires based on current and historic fire statistics and or fire maps.</p> <p>A “Fire Reduction Premium” can be added to the total net GHG emission reduction if:</p> <ol style="list-style-type: none"> <li>1. Over the 10-year period ending 2 years before the project start date, the cumulative area of peat burnt exceeded 10% of the project area (where repeated burning of the same area adds to the percentage). Evidence must be provided using statistics and/or maps in official reports and/or remotes sensing data; and,</li> <li>2. In the baseline scenario the area is now, and in future will be, under risk of anthropogenic peat fires, as demonstrated by current and historic fire statistics and/or fire maps for the project area, in combination with information on current and future land use; and,</li> <li>3. The fire management plan proposed by the project proponent at validation reflects the best practices available with respect to fire prevention and control and takes into account specific project circumstances; and,</li> <li>4. At each verification, documentation is provided demonstrating that fire management activities have been implemented according to the proposed plan.</li> </ol> <p>In the case of fire the Fire Reduction Premium needs to be cancelled unless the fire event is “catastrophic” and a) the rewetting of the peatland and b) a best practice fire management is implemented.</p> <p style="text-align: center;"><b><u>Clarification Request 8.</u></b></p>	CR 8	✓

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		<ul style="list-style-type: none"> <li>• Specify how “peat fire” is defined in terms of intensity of the fire and amount of peat burned in order to be accountable for Fire Reduction Premium</li> <li>• Clarify what parameters need to be available at validation in order to quantify the fire reduction</li> <li>• Clarify based on what VCS requirements carbon credits can be generated for improved fire management in the project activity, without actually quantifying the emission:                             <ul style="list-style-type: none"> <li>- As per VCS Standard 3.4 section 4.1.8 proxies used must be strongly correlated with the value of interest: clarify how this is the case with the fire reduction premium</li> <li>- VCS Standard 3.4 section 4.7.2 states that a methodology shall establish criteria and procedures for quantifying emissions generated by the project, and which shall be calculated as the difference between baseline and project emissions. Clarify how this approach is in line with the respective VCS requirement</li> </ul> </li> <li>• Area burnt and emissions from fire shall be included as monitoring parameter in line with VCS Standard 3.4 section 4.7.2. Include formulas required and define which parameters need to be included, including procedures for determining the parameters.</li> <li>• If emissions from fire in the baseline shall be included in the methodology, include clear procedure, formulas and parameters how to calculate these baseline emissions.</li> </ul> <p><i>Note:</i></p>		

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		<ul style="list-style-type: none"> <li>pg. 35; "Ex-ante estimate of Fire Reduction Premium: The estimate of <math>GHG_{wps-CO2,i,t}</math> in Equation 52 must be taken from ex-ante calculations (Section 8.2.3.2)" Section 8.2.3.2 does not exist!</li> <li>pg. 30; Equation (41) the parameters should be <math>GHG_{GEST_{wps,i,t}}</math> and <math>GHG_{WL_{wps-CO2,i,t}}</math> respectively</li> </ul>		
Where relevant, does the VCS Program methodology establish procedures to account for any changes in carbon sequestration or GHG emission reductions resulting from lateral movement of wetlands due to sea level rise, or coastal squeeze associated with any structures that prevent wetland landward migration and cause soil erosion?	1	n.a.	n.a.	n.a.
<b>8.2 Project emissions / removals</b>				
<b>Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5)</b>				
<p>Does the VCS Program methodology establish procedures to quantify the GHG emissions or removals for the baseline scenario?</p> <p>Does the VCS Program methodology use The IPCC 2006 Guidelines for National GHG Inventories or the IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry as guidance for quantifying increases or decreases in carbon stocks and GHG emissions?</p> <p>Does the VCS Program methodology require to follow the IPCC Guidelines in terms of quality assurance/quality control (QA/QC) and uncertainty analysis?</p> <p><i>The IPCC 2006 Guidelines for National GHG Inventories may be referenced to establish procedures for quantifying GHG emissions/removals associated with the following carbon pools including:</i></p> <p>1) Litter;</p> <p>2) Dead wood;</p>	1	<p><b>See respective comments in section 8.1</b></p> <p>Project emissions are quantified by determining carbon stock changes in non-peat carbon pools, GHG emissions as a result of peat oxidation due to drainage or a combination of both. For details respective comments in section 8.1.</p> <p>Besides the mentioned procedures the VCS Program Methodology provides in section 8.2.3.2 an alternative procedures to estimate GHG emission. The procedure is following the GEST approach but estimates the project emissions on bases of a conversion of a GEST.</p> <p><b><u>Corrective Action Request 8.</u></b> <b>Estimation of project emissions:</b></p> <ul style="list-style-type: none"> <li>Provide clear procedures to monitor Site Type for GEST in the field</li> <li>Provide clear procedures how to monitor GHG</li> </ul>	<b>CAR 8 / CR 9</b>	✓

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<p>3) Soil (methodologies may follow the IPCC guidelines for the inclusion of soil carbon, including the guidelines that are in sections not related to forest lands); and</p> <p>4) Belowground biomass (estimated using species-dependent root-to-shoot ratios, the Mokany et al. ratios and equations, or the Cairns equations).</p>		<p>emissions for a GEST type (<math>GHG_{GEST_{wps-CO_2}}</math>) and how QA/QC procedures are applied in detail</p> <ul style="list-style-type: none"> <li>Provide a description of the uncertainty related to GHG emission estimation using the GEST approach. Clarify if validation is required.</li> </ul> <p>In this regards clarify how well GEST reflect changing conditions over time (considering that the vegetation need time to adopt to different site conditions)</p> <ul style="list-style-type: none"> <li>Provide clear procedures to establish project-specific values for <math>GHG_{WL_{wps-CO_2}}</math> and <math>GHG_{WL_{wps-CH_4}}</math> (stepwise procedures)</li> <li>Provide procedures to define and justify the accuracy defined or conservativeness in the case values from appropriate literature sources are applied for <math>GHG_{WL_{wps-CO_2}}</math> and <math>GHG_{WL_{wps-CH_4}}</math></li> </ul> <p><b><u>Clarification Request 9.</u></b></p> <ul style="list-style-type: none"> <li>Clarify how emissions from fire in the project scenario is accounted for</li> </ul>		
<p>Where carbon would have been lost in the baseline scenario due to land use conversion or disturbance, GHG emissions from soil carbon, belowground biomass, wood products and dead wood carbon pools generally occur over a period of time following the event. It shall not be assumed that all GHG emissions from these carbon pools in the project categories specified below occur instantaneously or within a short period of time.</p> <p>Does the VCS Program methodology set out criteria and procedures to reliably establish the pattern of carbon loss</p>	1	See respective comments in section 8.1	✓	✓

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over time using empirical evidence, such as studies that use primary data or locally calibrated models, or does the VCS Program methodology apply an appropriate decay model (such as a linear or exponential decay function) that is scientifically sound, based on empirical evidence and not likely to overestimate early carbon losses?				
<i>Where appropriate, belowground biomass, soil carbon and dead wood decay models shall be calibrated.</i>	1	n.a.	n.a.	n.a.
Where models are calibrated using measurement plots or data from research plots does the VCS Program methodology require sound and reliable measurement methods to be applied (as set out in Section 4.8.3.)?				
As the Soil carbon pool is included in the project boundary, does the VCS Program methodology opt to comply with the requirement to establish a pattern of carbon loss over time by incorporating the following procedure:  3) Is the pattern of carbon loss modeled based upon a 20-year linear decay function, taking into account the depth of affected soil layers and the total portion of the pool that would have been lost?	1	See respective comments in section 8.1	n.a.	n.a.
<i>The procedure for quantifying CO2 emissions for the baseline emissions may be estimated through hydrological modeling or the modeling of proxies for GHG emissions in place of direct on-site gas flux measurements. The procedure may include estimation through well-documented relationships between CO2 emissions and other variables such as vegetation types, water level or subsidence, or remote sensing techniques that adequately assess and monitor soil moisture. Because of the dominant relationship between water level and CO2 emissions, drainage depth can be used as a proxy for CO2 emissions in the absence of emissions data.</i>	1	See respective comments in section 8.1	<b>CR 9</b>	✓

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Where relevant, does the VCS Program methodology require that the micro-topography of the project area (i.e., the proportion of hummocks and hollows and vegetation patterns) is considered?				
Does the VCS Program methodology calculate net GHG emissions reductions using the same methods that are used for the baseline estimates, but using monitored data.	1	See respective comments in section 8.1	✓	n.a.
Where relevant, does the VCS Program methodology assess the fate of transported organic matter as a result of sedimentation, erosion and oxidation conservatively based on peer-reviewed literature and considering the following:  1) It is conservative to not account for the loss of sediment from the project area in the baseline scenario.  2) It is conservative to not account for further sedimentation in the project area in the project scenario. Where soil carbon is included in the project boundary, sedimentation shall be accounted for so that carbon sequestration resulting from the growth of vegetation can be estimated separately from carbon accumulated in sedimentation. In the absence of the project activity, such high carbon silt would be washed out to sea and would not have been emitted in the baseline and as such carbon accumulated in sedimentation is not eligible for crediting	1	No loss of sediment can expected. Amounts of POCs is limited.	✓	n.a.
<i>With respect to the soil carbon pool, the maximum quantity of GHG emission reductions that may be claimed by the project shall not exceed the net GHG benefit generated by the project 100 years after its start date. This limit is established because in wetlands remaining partially drained or not fully rewetted, or where drainage continues, the soil carbon will continue to erode and/or oxidize leading to GHG emissions and eventually depletion of the soil carbon. To</i>	1	See respective comments in section 8.1	<b>CR 10</b>	✓

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<p><i>determine this long-term net GHG benefit, projects shall estimate the remaining soil carbon stock adjusted for any project emissions and leakage emissions in both the baseline and project scenarios at the 100-year mark, taking into account uncertainties in modeling and using verifiable assumptions. Projects with a PDT or SDT in the project scenario of less than 100 years or unable to establish and demonstrate a significant difference in the net GHG benefit between the baseline and project for at least 100 years are not eligible for crediting of the soil carbon pool.</i></p> <p>Does the VCS Program methodology require to establish and demonstrate a significant difference in the net GHG benefit between the baseline and project for at least 100 years?</p>				
<p>As WRC activities are likely to influence CH4 emissions, does the VCS Program methodology establish procedures to estimate such emissions, and establish the criteria and procedures by which the source may be deemed de minimis (as set out in Section 4.3.4) or conservatively excluded (as set out in Section 4.3.4)?</p> <p>Where relevant, does the VCS Program methodology consider the micro-topography of the project area (ie, the proportion of hummocks and hollows and vegetation patterns)?</p>	1	<p>In sections 8.2.3.1 and 9.3.6 of the VCS Program Methodology procedures to estimate CH4 emissions are provided.</p> <p>Section 5.4 of the VCS Program Methodology GHG contains procedures by which sources/emissions can be deemed de minimis in compliance with Section 4.3.3 VCS AFOLU v. 3.4</p>	✓	✓
<p>Does the VCS Program methodology in case of RWE projects on peatland that include an activity designed specifically to reduce incidence and severity of fires deduct the amount of peat assumed to burn when estimating peat depletion times?</p> <p><i>Where peat depletion times are estimated based only on oxidation rates due to drainage, the outcome would be a longer period than when first subtracting the amount of peat that is considered to burn in the baseline.</i></p>	1	See respective comments in section 8.1	CR 12	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Industrie Service

VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
Where relevant, does the VCS Program methodology establish procedures to account for any changes in carbon sequestration or GHG emission reductions resulting from lateral movement of wetlands due to sea level rise, or coastal squeeze associated with any structures that prevent wetland landward migration and cause soil erosion?	1	n.a.	n.a.	n.a.
<b>8.3 Leakage</b>				
<b>Leakage (AFOLU v3.4 Section 4.6)</b>				
Does the VCS Program methodology establish procedures to quantify all significant sources of leakage?	1	<p>The VCS Program Methodology does not account for leakage as under the applicability conditions as defined by the methodology (Section 4) leakage does not occur.</p> <p>Section 8.4 requires potential PPs to provide verifiable information (such as laws and bylaws, management plans, market reports) that in case the pre-project land use is:</p> <ul style="list-style-type: none"> <li>forestry, this forestry is non-commercial in nature</li> <li>peat extraction, this activity has been abandoned at least 2 years prior to the project start date</li> <li>agriculture, crop production has been abandoned at least 2 years prior to the project start date, or will continue in the project scenario, or drainage of additional peatland for new agricultural sites will not occur or is prohibited by law</li> <li>fuel wood extraction, the activity is non-commercial in nature.</li> </ul> <p>The non-existence of ecological leakage is required to be proven based on appropriate design (impermeable dam/buffer zone)</p>	✓	✓
Does the VCS Program methodology determine GHG emissions from leakage directly from monitoring, or indirectly when leakage is difficult to monitor directly but where scientific knowledge provides credible estimates of likely impact?	1	n.a.	n.a.	n.a.

## Summary of Request and Responses by Methodology Developer

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>Does the VCS Program methodology require that Projects account for market leakage in cases where the production of a commodity (e.g., timber, aquacultural products or agricultural products) is significantly affected by the project?</p> <p><i>The significance of timber production is determined as set out in Section 4.3.4 above or as set out in Section 4.6.15.</i></p>	1	n.a.	n.a.	n.a.
<p>Does the VCS Program methodology quantify leakage occurring outside the host country (international leakage)?</p> <p><i>International leakage does not need to be quantified.</i></p>	1	n.a.	n.a.	n.a.
<p>In case of leakage mitigation measures including tree planting, aquacultural intensification, agricultural intensification, fertilization, fodder production, and/or other measures to enhance cropland and/or grazing land areas,, leakage management zones or a combination of these does the VCS Program methodology account for any significant increase in GHG emissions associated with these activities, unless deemed <i>de minimis</i> (as set out in Section 4.3.4 AFOLU v3.2) or can be conservatively excluded (as set out in Section 4.3.4 AFOLU v3.2)?</p>	1	n.a.	n.a.	n.a.
<p>Does the VCS Program methodology account for positive leakage?</p> <p><i>Projects shall not account for positive leakage (i.e., where GHG emissions decrease or removals increase outside the project area due to project activities).</i></p>	1	n.a.	n.a.	n.a.
<p><i>RWE projects involving rewetting of forested wetlands are likely to reduce the productivity of the forest or make harvesting more difficult, which could lead to fewer forest products and thus result in leakage (ie, GHG emissions from logging and drainage elsewhere).</i></p> <p>In case the VCS Program methodology allows projects to result in activity shifting of forest products are the applicable requirements for leakage in IFM or REDD project activities</p>	1	n.a.	n.a.	n.a.

## Summary of Request and Responses by Methodology Developer

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>followed, accounting for both activity-shifting and/or market leakage?</p> <p>In case the VCS Program methodology allows projects to result in the shifting of drainage activities or other activities that would lower the water table, are the expected GHG emissions from a lower water table also accounted for?</p> <p>Does the VCS Program methodology require that in case of RWE projects on peatland to assume that the PDT of leakage activities occurs over the length of the project crediting period if the PDT is longer than the project crediting period?</p>				
<p>Rewetting in the project area may lead to higher water table depths in some areas beyond the project boundary, and consequently leading to lower water table depths in downstream areas further beyond the project boundary (eg, in the case of project activities that reverse subsidence), or cause transportation of organic matter to areas beyond the project boundary.</p> <p>In such cases, does the VCS Program methodology require the project proponent to demonstrate that such changes in water table depths or export caused by the project do not lead to increases in GHG emissions outside the project area, or to identify the affected areas and to quantify and to account for the resulting leakage?</p>	1	n.a.	n.a.	n.a.
<p>In case of the wetland restoration project includes fire reduction activities, does the VCS Program methodology require to follow the requirements for accounting for fire under REDD, where land use changes are identified as the cause (or one of the causes) of anthropogenic fires in the project region?</p>	1	n.a.	n.a.	n.a.
<b>8.4 Summary of GHG Emission Reduction and/or Removals</b>				

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
<p>Does the VCS-Program methodology describe the procedure for quantifying net GHG emission reductions and/or removals, as a function of baseline emissions, project emissions and leakage, as follows:</p> $ER_y = BE_y - PE_y - LE_y$ <p>Where:  <math>ER_y</math> = Net GHG emissions reductions and/or removals in year y  <math>BE_y</math> = Baseline emissions in year y  <math>PE_y</math> = Project emissions in year y  <math>LE_y</math> = Leakage in year y</p>	1	<p>Total net GHG emissions are calculated in line with the requirements of the standard as:</p> $NER_{RDP} = GHG_{BSL} - GHG_{WPS} + \text{Fire Reduction Premium} - GHG_{LK}$ <p>or according to the alternative procedure:</p> $NER_{RDP} = \Delta C_{BSL} - \Delta C_{WPS} + \Delta GHG_{rewetting} + \text{Fire Reduction Premium} - GHG_{LK}$ <p><b><u>Corrective Action Request 9.</u></b></p> <ul style="list-style-type: none"> <li>• Explain the difference between the “normal” and the “alternative” procedure as both refer to the same parameters.</li> <li>• Clarify if <math>\Delta C_{BSL}</math> and <math>\Delta C_{WPS}</math> (alternative procedure) need to be multiplied by 44/12</li> </ul>	CAR	✓
<b>Quantification of GHG emission reduction and removals (VCS v3.5 Section 4.7)</b>				
<p>Does the VCS Program methodology establish criteria and procedures for quantifying net GHG emission reductions and removals generated by the project, which are quantified as the difference between the GHG emissions and/or removals, and/or as the difference between carbon stocks, from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario?</p> <p>Where appropriate, are net GHG emission reductions and removals, and net change in carbon stocks, quantified separately for the project and the baseline scenarios for each relevant GHG and its corresponding GHG sources, sinks and/or reservoirs?</p>	1	<p>The VCS Project Methodology describes potential criteria and procedures for quantifying net GHG emission reductions and removals generated by the project which are quantified as the difference between the GHG emissions and removals, and as the difference between carbon stocks from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario.</p> <p>Net GHG emission reductions and removals, and net change in carbon stocks, are quantified separately for the project and the baseline scenarios for each relevant GHG and its corresponding GHG sources.</p> <p><b><u>Corrective Action Request 10.</u></b></p>	CAR	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
		<ul style="list-style-type: none"> <li>Provide clear procedures (detailed stepwise approach) how to establish GESTs in order to estimate GHG emissions (see also CAR 8)</li> <li>Based on the procedures provide information on formulas and parameters available at validation and to be monitored in order to establish GESTs</li> <li>Provide clear procedures (detailed stepwise approach) to establish project-specific values for <math>GHG_{WLbsl-CO2}</math> and <math>GHG_{WLbsl-CH4}</math> (see also CAR 8)</li> <li>Based on the procedures provide information on formulas and parameters available at validation and to be monitored to establish project specific values for <math>GHG_{WLbsl-CO2}</math> and <math>GHG_{WLbsl-CH4}</math></li> </ul>		
<b>Quantification of GHG emission reductions and removals (AFOLU v3.4 Section 4.7)</b>				
Does the VCS Program methodology establish procedures for quantifying net GHG emission reductions and removals (the net GHG benefit), which shall be quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and carbon pools in the baseline scenario and the project scenario?	1	See comment above	See comment above	✓
Does the VCS Program methodology require that the GHG emissions and/or removals in the project scenario are adjusted for emissions resulting from project activities and leakage?	1	The GHG emissions and/or removals identified for the project scenario result from project activities as required.	✓	✓
Does the VCS Program methodology establish procedures for quantifying the net change in carbon stocks, so that the number of buffer credits withheld in the AFOLU pooled buffer account and market leakage emissions may be quantified for the project?	1	The methodology provides procedures to quantify the net change in carbon stocks as required.	✓	✓
<b>9. Monitoring</b>				
<b>9.1 Data and Parameters Available at Validation</b>				
Does the VCS Program methodology provide specification for data and parameters not monitored (i.e., that will be	1	The methodology provides specification for data and parameters not monitored.	<b>CAR</b>	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl																
<p>available at validation). Is the table copied for each data unit/parameter?</p> <table border="1"> <tr> <td>Data Unit / Parameter:</td> <td></td> </tr> <tr> <td>Data unit:</td> <td></td> </tr> <tr> <td>Description:</td> <td></td> </tr> <tr> <td>Source of data:</td> <td></td> </tr> <tr> <td>Justification of choice of data or description of measurement methods and procedures applied:</td> <td></td> </tr> <tr> <td>Any comment:</td> <td></td> </tr> </table>	Data Unit / Parameter:		Data unit:		Description:		Source of data:		Justification of choice of data or description of measurement methods and procedures applied:		Any comment:			<p>The table provided by the methodology template v3.2 is applied as required.</p> <p><b><u>Corrective Action Request 11.</u></b></p> <ul style="list-style-type: none"> <li>List all parameters available at validation are included e.g. waterways, fire, drainage structures, climate variables, etc.</li> <li>Clarify if Root Shoot Ratios to be found in IPCC GPG 2003, Annex 3.A1, Table 3A1.8 are applicable for wetland conditions.</li> <li>Ensure that detailed descriptions of procedures to be applied are provided (in particular for <i>GHG<sub>GESTbsl-CO2,i,t</sub></i>, <i>GHG<sub>WLbsl-CO2,i,t</sub></i>)</li> </ul>						
Data Unit / Parameter:																				
Data unit:																				
Description:																				
Source of data:																				
Justification of choice of data or description of measurement methods and procedures applied:																				
Any comment:																				
<p><b>9.2 Data and Parameters Monitored</b></p> <p>Does the VCS Program methodology provide specification for data and parameters monitored (i.e., that will be available at validation. Is the table copied for each data unit/parameter?</p> <table border="1"> <tr> <td>Data Unit / Parameter:</td> <td></td> </tr> <tr> <td>Data unit:</td> <td></td> </tr> <tr> <td>Description:</td> <td></td> </tr> <tr> <td>Source of data:</td> <td></td> </tr> <tr> <td>Description of measurement methods and procedures to be applied:</td> <td></td> </tr> <tr> <td>Frequency of monitoring/recording:</td> <td></td> </tr> <tr> <td>QA/QC procedures to be applied:</td> <td></td> </tr> <tr> <td>Any comment:</td> <td></td> </tr> </table>	Data Unit / Parameter:		Data unit:		Description:		Source of data:		Description of measurement methods and procedures to be applied:		Frequency of monitoring/recording:		QA/QC procedures to be applied:		Any comment:		1	<p>The methodology provides specification for data and parameters not monitored.</p> <p>The table provided by the methodology template v3.2 is applied as required.</p> <p><b><u>Corrective Action Request 12.</u></b></p> <ul style="list-style-type: none"> <li>List if all parameters to be monitored are listed. E.g. water, leakage, fire, etc.</li> <li>Ensure that detailed descriptions of procedures to be applied at monitoring are provided (in particular for <i>GHG<sub>GESTwps-CO2,i,t</sub></i>, <i>GHG<sub>WLwps-CO2,i,t</sub></i>, <i>insufficient information is provided regarding obtaining this data, assessing uncertainty, etc</i>)</li> </ul>	CAR	✓
Data Unit / Parameter:																				
Data unit:																				
Description:																				
Source of data:																				
Description of measurement methods and procedures to be applied:																				
Frequency of monitoring/recording:																				
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Any comment:																				

## Summary of Request and Responses by Methodology Developer

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
Does the VCS Program methodology identify how the data/parameter is measured? Is equipment specifications provided, if applicable?	1	The VCS Program methodology identify how the data/parameter is measured. Equipment specifications provided, where applicable.	✓	✓
Does the VCS Program methodology identify measurement and recording frequency	1	The VCS Program methodology identifies measurement and recording frequency.	✓	✓
Does the VCS Program methodology identify calibration information such as frequency, date of last calibration and validity	1	n.a.	n.a.	n.a.
<b>Data and Parameters (VCS v3.5 Section 4.8.1)</b>				
Does the VCS Program methodology describe the data and parameters to be reported, including sources of data and units of measurement?	1	The VCS Program methodology describes the data and parameters to be reported, including sources of data and units of measurement.	✓	✓
Do standards and factors used by the VCS Program methodology to derive GHG emission data meet the following requirements? 1) Be publicly available from a reputable and recognized source (e.g., IPCC, published government data, etc). 2) Be reviewed as part of its publication by a recognized competent organization. 3) Be appropriate for the GHG source or sink concerned. 4) Be current at the time of quantification.	1	In section 9.3.2 of the VCS Program Methodology requirements regarding the sources of data/parameters/values applied that are consistent with Volume 1, Chapter 2 of IPCC 2006 Guidelines. Guidance regarding quality assurance/quality control methods are provided that are consistent with Volume 1, Chapter 6 of IPCC 2006 Guidelines	✓	✓
When highly uncertain data and information are relied upon, does the VCS Program methodology select conservative values that ensure that the quantification does not lead to an overestimation of net GHG emission reductions or removals?	1	In section 9.3.2 of the VCS Program Methodology guidance regarding quality assurance/quality control methods are provided that are consistent with Volume 1, Chapter 6 of IPCC 2006 Guidelines.  Section 9.3.3 of the VCS Program Methodology specifically references Volume 1, Chapter 2 of IPCC 2006 Guidelines with respect to uncertainties arising from expert judgment.	✓	✓
Does the VCS Program methodology use metric tonnes as the unit of measure?	1	The methodology uses metric tonnes as unit of measurement as required.	✓	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
Does the VCS Program methodology convert the quantity of each type of GHG to tonnes of CO <sub>2</sub> e? <i>Consistent with UNFCCC accounting, the six Kyoto Protocol greenhouse gases shall be converted using 100 year global warming potentials derived from the IPCC's Second Assessment Report (which are also available and reprinted in the Fourth Assessment Report). Ozone-depleting substances shall be converted using 100 year global warming potentials from the Fourth Assessment Report, which provides a full set of factors relevant to ODS methodologies and projects.</i>	1	The methodology convert the quantity of each type of GHG to tonnes of CO <sub>2</sub> e  <b>Corrective Action Request 13.</b> Clarify if $\Delta C_{BSL}$ and $\Delta C_{WPS}$ need to be multiplied by 44/12	CAR	✓
Does the VCS Program methodology establish criteria and procedures for monitoring, which shall cover the following:  1) Purpose of monitoring. 2) Monitoring procedures, including estimation, modelling, measurement or calculation approaches. 3) Procedures for managing data quality 4) Monitoring frequency and measurement procedures.	1	See comments above in section 9.1 Data and Parameters Available at Validation and 9.2 Data and Parameters Monitored.	CAR 12, CAR 13	✓
<b>Monitoring (AFOLU v3.4 Section 4.8)</b>				
Does the VCS Program methodology establish criteria and procedures for monitoring, and specify the data and parameters to be monitored, as set out in the VCS Standard?	1	See comments above in section 9.1 Data and Parameters Available at Validation and 9.2 Data and Parameters Monitored.	CAR 12, CAR 13	✓
Does the VCS Program methodology require to monitor Leakage as set out in Section 4.6.?	1	Leakage does not occur due to applicability conditions.	✓	✓
Where measurement plots or data from research plots are used to calibrate belowground biomass, soil carbon and dead wood decay models (as described above in Section 4.5.3), does the VCS Program methodology require to apply sound and reliable methods for monitoring changes in carbon stocks, including representative location of samplings sites and sufficient frequency and duration of sampling shall be applied?	1	n.a.	n.a.	n.a.

## Summary of Request and Responses by Methodology Developer

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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
In addition, does the VCS Program methodology require that plots used to calibrate soil carbon models are measured considering appropriate sampling depths, bulk density and the estimated impact of any significant erosion (or plots with significant erosion shall be avoided)?	1	n.a.	n.a.	n.a.
Does the VCS Program methodology require that data used to calibrate belowground biomass and dead wood models have to consider an estimation of oven-dry wood density and the state of decomposition?	1	n.a.	n.a.	n.a.
<b>9.3 Description of the Monitoring Plan</b>				
Does the VCS Program methodology describe the criteria and procedures for obtaining, recording, compiling and analyzing data and information important for quantifying and reporting GHG emissions and/or removals relevant for the project and baseline scenario?	1	<p>The VCS Program Methodology provides:</p> <ul style="list-style-type: none"> <li>• general requirements for the monitoring (section 9.3.1)</li> <li>• requirements to deal with uncertainty and quality management (section 9.3.2)</li> <li>• requirements for the application of expert judgements (section 9.3.3)</li> <li>• requirements for the monitoring of project implementation (section 9.3.4)</li> <li>• requirements for the stratification and sampling framework (section 9.3.5)</li> <li>• requirements for estimating GHG emissions on the basis of GEST and water table depth (section 9.3.6)</li> <li>• requirements for monitoring of fire events in the project scenario (section 9.3.7)</li> </ul> <p><b>Clarification Request 10.</b></p> <ul style="list-style-type: none"> <li>• Section 9.3.3: Clarify and justify for which parameters/input values an expert judgement is sufficient to obtain reliable estimates of GHG emissions.</li> <li>• Section 9.3.4: Clarify if all parameters listed in are listed in the respective section regarding “parameters to be monitored”</li> </ul>	CR	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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VCS Requirement	Ref	COMMENTS	Draft Concl	Final Concl
		<ul style="list-style-type: none"> <li>Section 9.3.4: Specify “small and isolated events” of fire</li> <li>Section 9.3.4: Clarify if the cancelling of the Fire Reduction Premium reflects the potential emission of GHG due to such an event.</li> <li>Section 9.3.6: Clarify if the procedures provided in this section are obligatory for potential PPs in order to estimate GHG emission on basis of GEST and water table depth in compliance with the methodology?</li> </ul>		
<b>10. References and other information</b>				
Does the VCS Program methodology include any relevant references and any other information relevant to the methodology/revision?	1	The methodology provides reference and information relevant for the methodology as required.	✓	✓

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



**Table 2: Summary of Requests and Responses by Methodology Developer**

Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
<p><b>Clarification Request 1.</b> Clarify how it is ensured that the correlation between GEST types and emissions in a particular project are actually given:</p> <p>a) Clarify if validation of the models are required b) Clarify how well GEST types reflect succession process (e.g. in terms of rewetting of previously drained area or vice versa (in the baseline))</p>	<p><b>General requirements (VCS v3.4 Section 4.1) VCS Standard Section 4.1.6</b></p>	<p>A) Please clarify if individual projects are required to validate the model, and if so how? Or can the model be validated (now during the assessment) to cover specific geographic area and landscape types (eg, FVS model is appropriate for use with all forests types in the US)</p> <p>B) As this is related to how well vegetation types are actually able to reflect changing conditions. (e.g. after a re-wetting process, or in a drainage process) please clarify how the methodology account for the lag time for vegetation to respond, which is depended on the ecosystem. It might be necessary to reflect it in the applicability conditions. The studies quoted in the methodology are mainly from Central</p>	<p>A) The procedure in 9.3.6 ensures that there is a correlation between GESTs and GHG emissions. The correlation as such is not quantified, see 9.3.6 Determining GESTs step 6. In the GEST approach GHG fluxes and their proxies are treated and delineated in an integrative manner. Added to 9.3.6: "The results of this procedure must be described in the PD". Note that by following the procedure (7 steps) the results are implicitly justified.</p> <p>B) A vegetation succession is usually a gradual process, which is reflected by GESTs if changes are sufficient for moving from one type to the next. We cannot indicate a priori how well GEST types may reflect vegetation succession. This is dependent on how GESTs are established and how well GESTs represent specific successional stages. Subsequent successional stages may be captured by a single GEST, which implies that there is no implicit change in GHG</p>	<p>A) Potential PPs are not obligated to follow the procedures described in 9.3.6 as it is left open to use the described approach. Clarify if results of other procedures than those described have to be described in the PD as well.</p> <p>B) No information on how far GEST types can reflect succession processes. This depends highly on the quality of the GESTs identified. Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the quality of the GESTs is up to the assessing auditor. Request closed.</p>

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
		Europe. The methodology has no limitation in terms of geography or climatic conditions	<p>characteristics between these stages.</p> <p>A) As stated in section 8.1.3.2 page 26, the alternative to using the procedure in 9.3.6 is applying values from appropriate literature sources pertaining to land use classes, water table depths or water table depth classes and similar project circumstances. The methodology then states that for such values the accuracy must be defined and conservativeness justified. We added that this must be presented in the PD.</p>	<p>A) Besides the development of project specific procedures following the procedures described in 9.3.6 project developers are allowed to apply values from appropriate literature which have to be described/justified in the PD obligatorily. Request closed.</p>
<p><b><u>Corrective Action Request 1.</u></b> Ensure that all key terms and acronyms used in the methodology are listed as required e.g. PDT, NEE, NEP, etc.</p>	<p><b>General Requirements (Meth template v3.3)</b></p>		<p>We understand from earlier experience with VCS methodology development that we do not need to provide definitions for terms already defined in the Program Definitions. E.g. PDT. We have added NEE and NEP and we have not identified other terms that need to be added to Ch3.</p>	<p>Key terms are added as required, Request closed.</p>
<p><b><u>Clarification Request 2.</u></b> Applicability condition (page 5-6):</p> <p>a) Define the term “agriculture”; clarify what kind of impact agriculture will have on uncertainty when</p>	<p><b>Applicability conditions (VCS v3.4 Section 4.3) VCS Standard Section 4.3.1 (for all, a – k)</b></p>	<p>For example, can this be crop production as well as animal husbandry?</p>	<p>Agriculture: food, fodder or fiber production on land. Type and intensity of land use are integrated into the GEST approach, see 9.3.6 Determining GESTs step 6.</p>	<p>According to the methodology developer, agriculture in connection with the methodology comprises food, fodder or fibre production. The final verdict over the quality of the GESTs is up</p>

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
applying the GEST approach				to the assessing auditor. Request closed.
Clarify how it is ensured that collection of fire wood does not lead to leakage			'Conservative' removed from this (and the previous) applicability condition. If there is no displacement of this activity, not accounting for this activity is conservative, but if there would be displacement, this displacement has no net negative effect on the project's GHG benefits.	Fire wood was conservatively removed from the methodology. Request closed.
i) l) Specify the consequence if burning of biomass and peatland or the use of N-fertilizer does occur in the project scenario (e.g. how can a project lose its eligibility after starting?) Clarify if these are actually applicability conditions, or should rather be monitored		As written as a applicability condition without a quantification mechanism, if a project were to be validated and user of fertilizler or biomass burning ended up occuring the project would become ineligible. Therefore, would it worth including quantification parameters for this pool in case fertilization or biomass burning does occur?	The project proponent is expected to be in control of project activities and if these happen to include biomass burning, N-fertiliser use or peat burning, and this is revealed during validation/verification, the project is set to fail. The VCS has procedures for this. There is therefore no need to include accounting procedures. These are applicability conditions, because the methodology has no accounting procedure and these activities must be avoided.	According to the information provided, the incidence of one of the mentioned conditions will lead to a failure of the project activity in compliance with respective VCS procedures. Request closed.
f) g) j) Clarify if these requirements are applicability conditions (it might rather be a description of the project implementation than an applicability conditions)		Though these are requirements for the methodology, a project does not necessary have to meet this requirements and thus are they appropraite as applicability conditions?	e can indeed be dropped f, g, j must be met because otherwise the methodology cannot be used.	According to the information provided the mentioned conditions need to be ensured otherwise the applicability of the methodology is not possible. Request closed.

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
<p>l) Clarify the meaning of “can” in the applicability condition k</p> <p>Clarify if N<sub>2</sub>O emissions will generally decline under all preconditions in terms of dryness at start of rewetting activity</p> <p>Clarify whether further applicability conditions are required to encompass the limitations of GEST (e.g. water tables below 30 cm)</p>		<p>VCS requires the use of ‘must’ or and ‘may’, please change usage of ‘can’ to may.</p>	<p>Replaced with ‘must’ and sentence otherwise slightly amended.</p> <p>From deeply drained to fully rewetted there we be no increase in N<sub>2</sub>O, but from deeply drained to rewetting to eg. some 40 cm below the soil surface N<sub>2</sub>O may increase. This is due to a transition of conditions too dry for N<sub>2</sub>O production to moist conditions conducive to N<sub>2</sub>O production. However, the project proponent must justify that this is not relevant, eg. by aiming at full rewetting. Hence, ‘and by sufficient rewetting’ was added.</p> <p>This applicability condition is about N<sub>2</sub>O. GESTs have no limitations in this respect because GESTs do not involve N<sub>2</sub>O. The GEST approach can be applied to situations with water tables below 30 cm because data on emissions exist of situations where drainage is beyond 30 cm. Therefore, no applicability conditions are needed to exclude such conditions.</p>	<p>“Can” has been replaced by “must”</p> <p>Further specification is provided to ensure that N<sub>2</sub>O emissions can be neglected as a sufficient rewetting is clearly required. The final verdict over the quality of the sufficiency of the rewetting is up to the assessing auditor. Request closed.</p>
<p><b>Clarification Request 3.</b> Ad 1: Stratification: a) Clarify why it is conservative to include areas that</p>	<p><b>Project boundary (VCS v3.4 Section 4.4)</b></p>	<p>Reworded by TUV SUD</p> <p>Buffer Zones:</p>	<p>a) In the procedure we say: “In case shallow peat areas are conservatively neglected” and “It is conservative to omit shallow peat strata in accounting”.</p>	<p>a) In the methodology it says: “Areas with a peat layer at project</p>

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<p>are shallower than required (ie, do not meet the peatland definition) as long as they are connected to areas that meet the requirements?</p> <p>Ad 3 Buffer zones (p 11/12):</p> <p>b) Provide guidance for the establishment of a buffer zone</p> <p>c) Clarify which parameters need to be monitored in order to ensure/prove, that extensive drainage outside the project area does not affect the water level within the project area.</p>	<p><b>VCS Standard Section 4.4.1/4.4.2</b></p>	<p>b) Please clarify if there are other features that are required of the buffer zone to ensure it is appropriate? Eg, does the area have to be peatland and comparable to the project area? Where the project is outside the boundary is it required to be adjacent to the project area (AFOLU req 3.4.3(3)(a)). Perhaps update to say 'width and size' to match the language of the AFOLU requirement</p> <p>c) Section 9.3.4 of the method does discuss what needs to be monitored, but are there specific parameters related to these items that are required to be monitored (eg, water table level in the buffer zones?)</p>	<p>We do not mention the conservative inclusion of shallow peat areas. Note that shallow peat areas can be included because the PDT ensures that if the peat is depleted there is no emission in the baseline, avoiding overestimation of emission reductions.</p> <p>b) Guidance exists in 5.2: "The width of the buffer zone must be determined on the basis of quantitative hydrological modeling, or expert judgment." 'Width' is now replaced with 'size and shape' as in requirement 3.4.3(3a). Note that the methodology requires the buffer zone to be <u>inside</u> the project boundary.</p> <p>c) New procedures are provided in section 9.3.4, combined with procedures for buffer zone against leakage.</p>	<p>start shallower than required by the adopted definition of peatland may be included if such areas are connected with areas that meet the definition". No answer was provided to CR3 Ad 1. Further clarification is required.</p> <p>b) Guidance is provided in compliance with requirements of the standard. Request closed.</p> <p>c) No information is provided regarding specific monitoring parameters. This is due to the fact, that the methodology does not provide describe distinct procedures but an approach. Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET)</p>

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			<p>a) There are two ways of interpreting this CR. One is that the CR assumes that the methodology claims that including shallower peat is conservative. The other is that it is not demonstrated/ensured that if shallower peat is included the result is conservative. We responded earlier to the first case that there is no claim that inclusion of shallow peat areas is conservative, and the question as to why it is conservative to include them seemed therefore moot. On the second possibility we note the following: Drained peatlands may show considerable areas of shallow peat at their edges or, depending on the relief of the underlying mineral soil, elsewhere. With the PDT procedure in place it is possible to include this potentially significant pool in accounting and</p>	<p>the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p> <p>Clarification was provided. Due to the PDT procedures, the shallower peat areas will not be accounted for as emission source once totally depleted. Request closed.</p>

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			<p>avoid the need for exclusion of areas intricately related to the thicker peat. As a general principle, pools (here: shallow peat) can be included as long as they can be sensibly (and conservatively) accounted. Whereas it is not strictly conservative to include shallow peat areas (or any other pool), they can be accounted following available procedures and must be treated conservatively once included. As stated, the PDT limits the baseline emissions that can be claimed from this shallow peat. This is consistent with procedures for thicker peat.</p>	
<p><b><u>Corrective Action Request 2.</u></b> Apply the table format provided by the VCS Methodology Template</p>	<p><b>Project boundary (VCS v3.4 Section 4.4) VCS Methodology template instructions</b></p>		<p>Table 5.2 adjusted to VCS template</p>	<p>VCS table format applied as requested. Request closed.</p>
<p><b><u>Corrective Action Request 3.</u></b> Provide description why pools” Wood products” and “Dead Wood” are optional for project developers applying the meth-</p>	<p><b>B 3 Project Boundary (AFOLU v3.4 Section 4.3) VCS Standard Section</b></p>		<p>These pools are excluded and the motivation is that they are optional as per the VCS requirements. Therefore, there is no need for their inclusion.</p>	<p>Pools are excluded in compliance with the standard. Request closed.</p>

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odology); or provide justification why carbon pools can be excluded.	4.4.1, AFOLU req Section 4.3.1 (Table 2)			
<p><b>Corrective Action Request 4.</b></p> <p>a) Under certain circumstances CH<sub>4</sub> emissions can occur as permanent emission after rewetting activities, and not exclusively in a transient phase</p> <p>b) Provide procedures for the quantification of possible spikes of CH<sub>4</sub> emission.</p> <p>c) CH<sub>4</sub> emissions of channels and ditches in the project scenario shall be in compliance with IPCC guidelines and conservative</p>	<p><b>B 3 Project Boundary (AFOLU v3.4 Section 4.3) VCS Standard Section 4.4.2, AFOLU req Section 4.3.23</b></p>	<p>Reworded by TUV SUD.</p>	<p>a) In such cases (without a spike) the GEST procedure must be applied. This includes situations where soil conditions are such that CH<sub>4</sub> are permanently high. See the definition of GEST; any such situation can be defined as a GEST with a specific emissions factor.</p> <p>b) The methodology states the following: "For the quantification of possible spikes of CH<sub>4</sub> emission during a transient period after rewetting where dying off vegetation may lead to substantial methane emissions, for which the GEST approach cannot be used, conservative estimates from appropriate literature sources must be used. The project proponent must demonstrate applicability of that literature on the basis of similarity with respect to pre-project land use (e.g. forestry, peat mining, agriculture) and land use intensity (esp. fertilization), superficial peat types (esp. nutrient conditions), and climatic zone."</p>	<p>a) Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the quality of the GEST and respective emission factors elaborated is up to the assessing auditor. Request closed.</p> <p>b) See comment under a). It is the responsibility of the auditor to judge whether the conservative estimates from literature are applicable for the project activity to be assessed. Request closed.</p> <p>c) See comment under a). It is the responsibility of the auditor to judge whether the CH<sub>4</sub> emissions of channels</p>

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			c) Unclear what is meant here. Which part of the procedure is not compliant with which IPCC guideline?	and ditches in the project scenario are scaled and calculated correctly. Request closed.
<p><b><u>Corrective Action Request 5.</u></b> Specify the process/requirements to demonstrate the decline N<sub>2</sub>O in the project scenario as assumed in the methodology</p>	<p><b>B 3 Project Boundary (AFOLU v3.4 Section 4.3) AFOLU req Section 4.2.3.24</b></p>		<p>This is provided in the methodology as follows. 8.1.1: "It must be demonstrated (e.g. by referring to peer-reviewed literature) that under the project circumstances N<sub>2</sub>O emissions are insignificant or decrease in the project scenario compared to the baseline, and therefore N<sub>2</sub>O emissions need not be accounted for." 8.2.1: "To demonstrated that N<sub>2</sub>O emissions are a) insignificant or b) decrease compared to the baseline scenario, and therefore N<sub>2</sub>O emissions need not be accounted for, a) use the CDM A/R methodological tool: "Tool for testing significance of GHG emissions in A/R CDM project activities", or b) refer to peer-reviewed literature, respectively".</p>	<p>The process/requirements to demonstrate the decline N<sub>2</sub>O in the project scenario as assumed in the methodology are provided as required. Request closed.</p>
<p><b><u>Clarification Request 4.</u></b> Explain the 1 : 1 proportional rise assumed. (Methodology page 22)</p>	<p><b>Baseline Scenario (AFOLU v3.4 Section 4.4)</b></p>	<p>Please provide justification for this 1:1 proportional rise</p>	<p>This means that if subsidence is 10 cm the relative rise of the water table is 10 cm. This is based on the assumption that the local drainage base is not altered by subsidence ie. the absolute water</p>	<p>Clarification is provided. Request closed.</p>

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	AFOLU req section 4.4.11		table does not change and the relative water table increases the same rate as the subsidence rate. To avoid confusion we removed the phrase "Unless alternative evidence is provided,".	
<p><b><u>Corrective Action Request 6.</u></b> Modeling / predicting future baseline condition (pages 21-22):</p> <p>a) Provide a minimum set of requirements for the modeling/predicting of the water level in order to apply the GEST approach or the estimation of GHG emissions based on water level respectively.</p> <p>b) Define which parameters are required to calibrate the water model for the table. (Modeling of water table is required to predict the baseline GHG emissions in this methodology as stated e.g. on page 22, second paragraph.) Ensure that these parameters are included in section 9.1</p>	<p><b>B 5 Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5) AFOLU req Section 4.5.3</b></p>	<p>a) Please provide procedure to calibrate the hydrological model discussed in the methodology as required by Section 4.5.3. Procedure must include specific parameters to calibrate the project area with the model</p> <p>b)reworded by TUV SUD</p>	<p>a) Guidance from the VCS (quote): "In regards to CAR 6, after discussion we agreed that Section 4.5.3 is meant for determining carbon decay and these requirements would not be appropriate for the water table modeling. That said, the secondary aspects of the finding are still relevant related to ensuring that parameters are included to calibrate the model." (end quote) Also it seems that the term quantitative hydrological modelling is misunderstood. The term refers to a type of numerical simulation model that allows for depicting the outcome of complex interactions, including non-stationary situations. Whether such a model is needed and how complex it must be, is up to the expert involved in the assessment. In simple situations, an expert will be able to provide good guidance directly, in complex situations he will resort to modelling. The involvement of an expert is indispensable. We therefore rephrased to: '...must be assessed</p>	<p>a) Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p> <p>b) See comment above. Request closed.</p> <p>c) The description provided is sufficient. Request closed.</p>

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<p>of the methodology.</p> <p>c) Provide description how future GEST types are estimated in particular over time</p>			<p>on the basis of expert judgment and in a conservative manner. Justification may be based on hydrological models.'</p> <p>b) We have downscaled the necessity of a model and moreover do not want to prescribe a specific software package. The principle is that a certain way of quantification is adopted as outlined under a) above.</p> <p>c) The methodology does describe this as follows: "Based on the assessment of changes in water table depth, time series of vegetation composition must be derived (<i>ex ante</i>), based on vegetation succession schemes in drained peatlands from scientific literature and/or expert judgment, by defining time series of GESTs, with time steps of e.g. 5 years to allow for the inherent discrete character of the GESTs."</p>	
<p><b>Corrective Action Request 7.</b> Procedure to determine GHG emissions in the base-line with GEST (pages 21-22 and 65-69)</p> <p>a) Provide clear procedures how to define a Site Type for GEST in the field (e.g. if</p>	<p><b>B 5 Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5)</b></p>	<p>VCS methodologies are required to be understandable without an additional paper (considering also that this is not an approved VCS tool). The reference to the paper is also not quite clear. Please clarify if it is supposed to be</p>	<p>We refer to discussions with the VCS. We understand from the VCS that the concern that the audit team had issues with the science behind the paper is not needed and that the validator is comfortable with that aspect of referencing the paper. They stated that it appears that the finding was raised more as an interpretation of VCS rules</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project de-</p>

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<p>vegetation is used to define a site type, which criteria must be fulfilled to determine the boundary of a site type? It shall be clearly describe to enable project developer and auditors to apply such a procedure</p>		<p>background information, or actual requirements of the methodology? If the latter is the case it must be further defined, as the paper is a scientific article and cannot be directly used by a methodology for a VCS project.</p> <p>The comments on the steps described in 9.3.6 in details:</p> <ol style="list-style-type: none"> <li>1. How shall the GHG fluxes be determined for developing regression models (I assume this would be a parameter that is required, and it shall be presented in line with VCS requirements)</li> <li>2. <i>(no comment, but it might be easier to understand if it was referred to the text on page 66 last para. and page 67</i></li> <li>3. Please clarify what is "sufficiently similar" vegetation type? What are limits for a vegeta-</li> </ol>	<p>and the aesthetics of methodology meaning that a methodology quantifying a GEST should include the procedure for developing a GEST and not reference another paper. They further noted that the validator agreed that the users of the methodology would need to have a certain level of expertise to develop a project, and therefore could determine the procedure/method from the paper and would not require further refining of the methodology presented in the paper. VCS confirmed to provide a clarification in writing to reference that an academic paper is appropriate for the procedural requirements.</p> <p>Re. The comments on the steps described in 9.3.6 in details:</p> <ol style="list-style-type: none"> <li>1. The methodology states in 9.3.6: "For the analysis of emissions, only data on yearly net emissions, based on year-round measurements or on sound model extrapolations are used. With respect to CO2 fluxes, care has to be taken to include only net CO2 balances (NEE or NEP) from reliable models using light and dark</li> </ol>	<p>velopers is up to the assessing auditor. Request closed.</p>

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		<p>tion type to be ascribed to a GHG emission value from literature? How is it ensured that the value fits at all? So far the research quoted by Couwenberg for vegetation is mainly in Central Europe. The methodology has however no geographic limitation or in ecosystem / site condition. This can have huge impacts on the final amount of credits generated per unit of area</p> <ol style="list-style-type: none"> <li>4. Please clarify if a better description of how water table can be used to verify the GHG emissions (fluxes)</li> <li>5. Please see comment on "sufficient similarity" in step 3.</li> <li>6. The "expert option" leaves potential room for fraud</li> <li>7. <i>(no comment)</i></li> </ol>	<p>fluxes as input." We have written 'flux' instead of 'emission' where we thought confusion may have arisen.</p> <ol style="list-style-type: none"> <li>2. -</li> <li>3. We added "Similarity is defined on the basis of floristic composition or plant functional types and expert judgement and must be justified".</li> <li>4. This is only a verification and refinement step. We added "The results of step 3 may be verified and refined by ...".</li> <li>5. We added "(see above)".</li> <li>6. If an expert is selected using the procedures provided in the methodology (based on IPCC guidance) the project proponent may assume that the person will provide scientific and reliable advice.</li> <li>7. -</li> </ol> <p>We added (see Section 9.3.6 for additional guidance on each of these steps)" to the 4 steps in Section 8.1.3.1.</p>	

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		<p>Further, the steps on page 21 could be linked to the steps on page 65, in order to help the reader following the methodology. e.g.</p> <ol style="list-style-type: none"> <li>1. step 1 on page 21 could refer to page 65</li> <li>2. step 2 refer to page 66/67</li> </ol> <p>Another topic that requires further detailed description / procedures is the determination / quantification of the baseline scenario.</p> <p>It is mentioned on page 21 in step 3 and 4 that "time series of GEST development for each stratum" shall be derived, and it is referred to section 6.2. and 6.1. Further description is provided on page 22.</p> <p>A detailed stepwise procedure would increase the ease of understanding the methodology. In any case the audit team is of the opinion that too little guidance is provided how baseline and project scenario</p>	<p>The methodology refers to module VMD0019 because it provides the requested step-wise guidance for establishing the baseline. The methodology then provides additional guidance in compliance with VCS WRC requirements (points 1 and 2).</p>	

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		<p>is determined in regards to actual GEST types (e.g. is modelling of the water table always required? - in particular for the project scenario probably yes? If so a more structured approach might be helpful, e.g. what are required parameters to be used, perhaps refer to existing models for water table.</p> <p>Please clarify if the water table is used to predict vegetation types, and vegetation types used to predict GHG emissions, is it not easier to just use the water table at least for the baseline, considering that a monitoring of the baseline is not possible? (if that was the case, step 3 on page 21 would not be required)</p> <p>The papers from Couwenberg (2011) gives a description of the methodology applied for deriving at proxies for GHG emissions based on published literature (mainly from studies in central Europe).</p>		

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		<p>The papers provide sound scientific background to the proposed methodology. The paper does however not present further details in regards to the topics raised above, i.e. the practical application of the methodology for a project developer - in particular if a project would be outside of Central Europe.</p> <p>The papers have certain limitations due to the study sites and references that were used. These limitation are not necessarily reflected in the proposed VCS methodology (i.e. applicability conditions)</p> <p>The main conclusion regarding the Couwenberg papers is, that it is not clear if it shall be actual part of the methodology. The way the methodology is currently worded, the audit team assumed that it is background material, but not actual part of the methodology (i.e. no actual requirements defined there). Therefore, please clarify if the paper is supposed to</p>		

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<p>b) Provide clear procedures how to determine GHG emissions in a site type (of GEST) – parameters GHG-GESTbsl-CO2 and GHG-GESTbsl-CH4. It shall be clearly describe to enable project developers to apply such a procedure.</p>		<p>be used a background or if further applicability conditions are required?</p> <p>b) : The request raised by the audit team is regarding the question how a project developer can come up with the parameter <math>GHG_{GESTbsl-CO2}</math> and <math>GHG_{GESTbsl-CH4}</math>. No detailed information is provided in the methodology on this topic. I assume that some kind of procedure should be defined that can be applied by the project developer. So, no procedure is required how the parameter shall be validated (I deleted the part regarding auditors from the sentence to avoid confusion). Currently, it is only stated on page 52 and 53 "Data can be obtained from peer reviewed literature or from own measurements". In my understanding that a VCS methodology should give guidance to a developer on how to derive at these crucial parameters. (In</p>	<p>The procedure for determining GESTs is provided in Couwenberg et al 2011. This comment has in part been dealt with under a) above. In addition, we have made clearer how GHG fluxes are established. See also e) below.</p> <p>Equations 26 and 27 determine that parameters are quantified for each stratum i and time step t. GESTs for each stratum and time step are determined using procedures in 8.1.3.1.</p> <p>In 8.1.3.2 we added: Procedures for the determinations of GHG fluxes and water table depth measurements are provided in Section 9.3.6.</p> <p>In 9.3.6 we added: <u>Determining CO<sub>2</sub> and CH<sub>4</sub> emissions</u></p> <p>For project-specific flux values the project proponent may carry out direct measurements of GHG fluxes, such as closed chamber and eddy covariance</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>

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		<p>addition if no guidance is given other than best practice, it makes it difficult for auditors to validating such approaches.)</p> <p>For further clarification, please see comments above on section 9.3.6 / Couwenberg papers</p>	<p>measurements. Applied techniques must follow international standards of application as laid out in pertinent scientific literature (e.g., Matson &amp; Harris, 1995, Pattey <i>et al.</i> 2006, Alm <i>et al.</i> 2007, Evans <i>et al.</i> 2011).</p> <p>This is an expansion of the text we used in the tables in 9.1, where it is deleted. The tables for the parameters refer to 9.3.6 at the top of “Justification of choice of data or description of measurement methods and procedures applied:”.</p>	
<p>c) Clarify if additional procedure and description is required for natural succession, cultivated land and bare peat.</p>			<p>The procedures in the methodology can be used for all initial conditions, whether they are a nature area, arable land or a peat excavation site.</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>
<p>d) Include clear procures how to validate GHGGESTbsl-CO2 and GHGGESTbsl-CH4</p>			<p>GEST determination itself has a validation procedure (9.3.6). Baseline establishment is based on application of module VMD0019 and this is performed under the scrutiny of VCS rules</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET)</p>

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			<p>and project validator, who assesses whether the step-wise procedure in the module is carefully followed. We may misunderstand the term 'validate' in the comment.</p>	<p>the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>
<p>e) Provide clear procedures how to establish project-</p>			<p>See also b) above.</p> <p>Equations 26 and 27 determine that parameters are quantified for each stratum <math>i</math> and time step <math>t</math>. GESTs for each stratum and time step are determined using procedures in 8.1.3.1.</p> <p>In 8.1.3.2 we added: Procedures for the determinations of GHG fluxes and water table depth measurements are provided in Section 9.3.6.</p> <p>In 9.3.6 we added: <u>Determining CO<sub>2</sub> and CH<sub>4</sub> emissions</u></p> <p>For project-specific flux values the project proponent may carry out direct measurements of GHG fluxes, such as closed chamber and eddy covariance measurements. Applied techniques must follow international standards of</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>

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Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
			<p>application as laid out in pertinent scientific literature (e.g., Matson &amp; Harris, 1995, Pattey <i>et al.</i> 2006, Alm <i>et al.</i> 2007, Evans <i>et al.</i> 2011).</p> <p>This is an expansion of the text we used in the tables in 9.1, where it is deleted. The tables for the parameters refer to 9.3.6 at the top of "Justification of choice of data or description of measurement methods and procedures applied:".</p>	
f) specific values for GHGWLbsl-CO2 and GHGWLbsl-CH4 (stepwise procedures)				Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
g) Clarify if it is required to validate emissions based on GEST or project specific values for GHGWLbsl-CO2 and GHGWLbsl-CH4			See d) above	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the

## Summary of Request and Responses by Methodology Developer

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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
				<p>approach chosen by the project developers is up to the assessing auditor. Request closed.</p>
<p>h) Provide a description how to determine the uncertainty for GHG emission estimation related to the GEST approach /</p>		<p>It is necessary for the methodology to provide procedures to determine uncertainty (as per VCS Standard). The methodology does not appear to have specific requirements for estimating uncertainty from the GEST model. If the GEST model has a method for calculating uncertainty, that would be useful. However, as its currently explained in the methodology, it is not clear that if the uncertainty cannot be calculated, the GEST model would need to be re-run with conservative numbers. In fact, the current language seems to imply that if uncertainty cannot be calculated from the GEST model, the PP only needs to <u>justify</u> why it is conservative. This is entirely different from actually <u>being</u> conservative.</p>	<p>The methodology allows for a quantification of uncertainty as well as for the application of conservative values.  <u>Quantifying uncertainty:</u>                      Section 8.5.2: "This procedure allows for estimating uncertainty in the estimation of emissions and carbon stock changes, i.e. for calculating a precision level and any deduction in credits for lack of precision following project implementation and monitoring, by assessing uncertainty in baseline and project estimations".                      There is no procedure in the methodology that excludes emissions associated with GESTs from the need to quantify uncertainty as outlined in 8.5.2.  <u>Conservative values:</u>                      In 9.3.2 the methodology states: "If uncertainty is significant, project proponents must choose data such that it indisputably tends to under-estimate, rather than over-estimate, net GHG project benefits".</p>	<p>Clarify if conservativeness in GHG emissions reductions based on GESTs "can" or "must" be established by applying too low flux values to GESTs in the baseline.</p>

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
			<p>Added: "Conservativeness in GHG emission reductions based on GESTs can be established by applying too low flux values to GESTs in the baseline. The conservativeness of the value (e.g. applying the value of the next wetter GEST) must be demonstrated."</p> <p>The methodology states that if uncertainty is significant, PPs must choose data such that it indisputably underestimates GHG reductions. One possibility provided by the methodology is to choose too low flux values in the baseline. Other options remain open as long as conservativeness is demonstrated. For clarity we reworded the procedure and added to the procedure: "or any alternative way of ensuring conservativeness".</p>	<p>Conservativeness in GHG emissions reductions based on GESTs must be demonstrated. Request closed.</p>
<p>i) Specify the conditions under which the GEST approach leads to estimations of GHG emissions with an acceptable certainty</p>		<p>i)Reworded by TUV SUD</p>	<p>These conditions would include a proper literature or vegetation survey and sufficient GHG flux data for individual GESTs. This is covered by the methodology.</p>	<p>For project-specific flux values the methodology allows, that direct measurements of GHG fluxes are carried out, such as closed chamber and eddy covariance measurements. Applied techniques must follow international standards of application as laid out in pertinent scientific</p>

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
				<p>literature.</p> <p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>
<p><b>Clarification Request 5.</b> Clarify why the micro-topography does not need to be considered e.g. in form of a digital terrain model when modeling/estimating the water table.</p>	<p><b>B 5 Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5) AFOLU req 4.5.31</b></p>	<p>Please clarify why the methodology does not consider the micro-topography of the project area as required by Section 4.5.31 of the AFOLU requirements</p>	<p>If different micro-topographical elements have different GHG flux characteristics, these can be captured in different GESTs.</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the GESTs elaborated by the project developers is up to the assessing auditor. Request closed.</p>
<p><b>Clarification Request 6.</b> Specify how “significant differences” can be identified</p>	<p><b>B 5 Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5)</b></p>	<p>Please specify procedure for how a ‘significant difference’ between baseline and project emission of 100 years can be determined as required by Section 4.5.29 fo the AFOLU req.</p>	<p>Equation 7 includes a factor 1.05 which determines that the difference must be 5% or greater. We added ‘(≥ 5%)’ to the text in 5.2.</p>	<p>Significant difference is specified as difference equal or greater 5%. Respective information is provided in the Methodology. Request closed.</p>

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
	<b>AFOLU req Section 4.5.29</b>			
<b>Clarification Request 7.</b> Clarify if $Rate_{peatloss-BSL,i}$ is constant or will vary over time due to sagging and oxidation.	<b>B 5 Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5) AFOLU req 4.5.25</b>		Indeed in this case a conservative (high) value MUST be applied. Text amended.	In order to consider the variation of peat loss due to sagging and oxidation a “conservative” high value is required. Request closed.
<b>Clarification Request 8.</b> a) Specify how “peat fire” is defined in terms of intensity of the fire and amount of peat burned in order to be accountable for Fire Reduction Premium	<b>B 5 Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5)</b>	These findings can be closed due to VCS’ clarification to Tuv Sued. Note, methodology must be updated to include language developed for VM0007 to satisfy any previous concerns raised.	Difficult to assess where the critical difference between the methodology and module VMD0046 is. The procedures are essentially the same. Some edits are made (see in track changes).	Closed after discussion with VCS.
b) Clarify what parameters need to be available at validation in order to quantify the fire reduction				Closed after discussion with VCS
c) Clarify based on what VCS requirements carbon credits can be generated for improved fire management in the project activity, without actually quantifying the				Closed after discussion with VCS

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Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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<p>emission:</p> <ul style="list-style-type: none"> <li>- As per VCS Standard 3.4 section 4.1.8 proxies used must be strongly correlated with the value of interest: clarify how this is the case with the fire reduction premium</li> <li>- VCS Standard 3.4 section 4.7.2 states that a methodology shall establish criteria and procedures for quantifying emissions generated by the project, and which shall be calculated as the difference between baseline and project emissions. Clarify how this approach is in line with the respective VCS requirement</li> </ul>				
<p>d) Area burnt and emissions from fire shall be included as monitoring parameter in line with VCS Standard 3.4</p>				<p>Closed after discussion with VCS</p>

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
section 4.7.2. Include formulas required and define which parameters need to be included, including procedures for determining the parameters.				
e) If emissions from fire in the baseline shall be included in the methodology, include clear procedure, formulas and parameters how to calculate these baseline emissions.				Closed after discussion with VCS
<p>Note:</p> <ul style="list-style-type: none"> <li>pg. 35; "Ex-ante estimate of Fire Reduction Premium: The estimate of <math>GHG_{wps-CO_2,i,t}</math> in Equation 52 must be taken from ex-ante calculations (Section 8.2.3.2)" Section 8.2.3.2 does not exist!</li> <li>pg. 30; Equation (41) the parameters should be <math>GHG_{GEST_{wps,i,t}}</math> and <math>GHG_{WL_{wps-CO_2,i,t}}</math> respectively</li> </ul>				Done
<b>Corrective Action Request 8. Estimation of project emissions:</b>	<b>Baseline and Project</b>	Further clarification provided in CAR 7 is also applicable here.	The field monitoring procedures for GESTs are provided in 9.3.6 ( <u>Assessing the spatial distribution of</u>	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
a) Provide clear procedures to monitor Site Type for GEST in the field	<b>Emis-sions/Re-movals (AFOLU v3.4 Section 4.5)</b>		<u>GESTs</u> ). This section also provides procedures for water table depth measurements.	29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
b) Provide clear procedures how to monitor GHG emissions for a GEST type (GHGGEST <sub>wps</sub> -CO <sub>2</sub> ) and how QA/QC procedures are applied in detail			GHG emissions are not monitored directly, GESTs are monitored, see a) above. QA/QC procedures are provided in 9.3.2. See also response to CAR 7(h) above.	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
c) Provide a description of the uncertainty related to GHG emission estimation using the GEST approach. Clarify if validation is required.			See response to CAR 7(h) above.	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
d) In this regards clarify how well GEST reflect changing conditions over time (considering that the vegetation			We do not see how this is relevant for a methodology. This needs to be assessed by the project proponent by using the methodology.	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
need time to adopt to different site conditions)				final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
<p>e) Provide clear procedures to establish project-specific values for <math>GHG_{WLWps-CO2}</math> and <math>GHG_{WLWps-CH4}</math> (step-wise procedures)</p> <p>f) Provide procedures to define and justify the accuracy defined or conservativeness in the case values from</p>			We refer to the response to CAR 7(e) above. A similar response applies here. See tables in 9.2 for these parameters for edits, as well as 9.3.6.	Clear procedures are not provided but the methodology requires that potential project developers have to document the process of identifying GESTs and corresponding GHG values need to be documented in the PD. Thus, it is left to the auditor to critically judge whether the procedures followed are feasible or not and thus, the values taken to calculated project emission reductions are conservative and realistic. Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project de-

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
				velopers is up to the assessing auditor. Request closed.
g) appropriate literature sources are applied for GHGWLwps-CO2 and GHGWLwps-CH4		Inclusion of language from VM0007 which included monitoring of fire and underground fire subsidence for 3 years should be sufficient to close this finding	See responses to CAR 7 (h) and (j) above	Our finding was somehow reworded. Request closed.
<b>Clarification Request 9.</b> Clarify how emissions from fire in the project scenario is accounted for	<b>Baseline and Project Emissions/Removals (AFOLU v3.4 Section 4.5)</b>		This is outlined in Section 8.3 and applicability condition (j). The assumption is that there will be no fires due to the rewetting activity and project failure occurs as described in 8.3 in which case no premium is awarded.	According to the applicability conditions, fire is not allowed to occur. Thus a project were fire occurred after project start loses its eligibility
<b>Corrective Action Request 9.</b> a) Explain the difference between the “normal” and the “alternative” procedure as both refer to the same parameters. b) Clarify if $\Delta C_{BSL}$ and $\Delta C_{WPS}$ (alternative procedure) need to be multiplied by 44/12	<b>8.4 Summary of GHG Emission Reduction and/or Removals (Meth template v3.3)</b>		a) This is explained in 8.2.3.2 as indicated in 8.5: “GEST conversion assessments may provide direct conservative estimates of emission reductions due to rewetting, e.g. a conversion of GEST type a to type b is associated with a given emission reduction with a given uncertainty, or the emission reduction is estimated conservatively.” This means that a GEST conversion assessment can directly provide the value for the rewetting component $\Delta GHG_{rewetting}$ of $GHG_{BSL} - GHG_{WPS}$	a) Clarification is provided. Equations were revised accordingly. Request closed b) 44/12 was added as required. Request closed.

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
			<p>The equation 55 is thus rewritten to include  <math>\Delta C_{BSL} - \Delta C_{WPS} + \Delta GHG_{rewetting}</math>                      in equation 56.</p> <p>b) Correct. We added 44/12 to equations 42 and 56.</p>	
<p><b>Corrective Action Request 10.</b>                      a) Provide clear procedures (detailed stepwise approach) how to establish GESTs in order to estimate GHG emissions (see also CAR 8)</p>	<p><b>Quantification of GHG emission reduction and removals (VCS v3.4 Section 4.7)</b></p>	<p>Reworded by TUV SUD</p>	<p>-</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>
<p>b) Based on the procedures provide information on formulas and parameters available at validation and to be monitored in order to establish GESTs</p>			<p>These are listed in Sections 9.1 and 9.2 respectively. What is the question?</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>

## Summary of Request and Responses by Methodology Developer

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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
c) Provide clear procedures (detailed stepwise approach) to establish project-specific values for GHGWLbsl-CO2 and GHGWLbsl-CH4 (see also CAR 8)			Is this the same question as in CAR 7(e)?	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
d) Based on the procedures provide information on formulas and parameters available at validation an to be monitored to establish project specific values for GHGWLbsl-CO2 and GHGWLbsl-CH4			See response to CAR 7(e)	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
<p><b>Corrective Action Request 11.</b></p> <p>a) List all parameters available at validation are included e.g. waterways, fire, drainage structures, climate variables, etc.</p>	<p><b>9.1 Data and Parameters Available at Validation (Meth template v3.3)</b></p>	<p>There are examples of parameters that are mentioned in the methodology but not listed in the parameter section such as the following:</p> <ul style="list-style-type: none"> <li>• waterways, / drainage structures- mentioned on page 22 for water table modelling</li> </ul>	<p>Some are examples of parameters that may be used in hydrological modelling. Hydrological modelling is optional. If models are applied the parameters will be assessed as specified by the model's input requirements. Hence difficult to provide tabular information here. Some may be relevant for stratification and are not strictly parameters.</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>

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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
		<ul style="list-style-type: none"> <li>• Further parameters for water table modeling listed at the bottom of page 22</li> <li>• climate variables (page 22)</li> <li>• (parameters related to fire – which is now excluded)</li> </ul>		
<p>b) Clarify if Root Shoot Ratios to be found in IPCC GPG 2003, Annex 3.A1, Table 3A1.8 are applicable for wetland conditions.</p>			<p>The procedures follows the ones provided in CDM tool 14 for trees and shrubs (referenced in both AR-ACM0003 and AR-AM0014 Wetlands) which do not distinguish between trees on terrestrial or peatland sites.</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>
<p>c) Ensure that detailed descriptions of procedures to be applied are provided (in particular for <math>GHG_{GESTbsl-CO2,i,t}</math>, <math>GHG_{WLbsl-CO2,i,t}</math></p>			<p>See responses to CARs 7 and 8 above.</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>

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Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
<p><b>Corrective Action Request 12.</b></p> <p>a) List if all parameters to be monitored are listed. E.g. water, leakage, fire, etc.</p> <p>b) Ensure that detailed descriptions of procedures to be applied at monitoring are provided (in particular for <math>GHG_{GESTwps-CO2,i,t}</math>, <math>GHG_{WLwps-CO2,i,t}</math>, <i>insufficient information is provided regarding obtaining this data, assessing uncertainty, etc</i>)</p>	<p><b>9.2 Data and Parameters Monitored (Meth template v3.3)</b></p>	<p>There was a typo here in the section for which the requirements were referring. This is supposed to be for parameters to be monitored (and has been updated to reflect so), same as above if applicable (in particular fire was an parameter that should have been monitored, but as per VCS decision is no longer relevant). However waterways for modelling water table might be required, monitoring of leakage(see comments in theapplicability section)</p>	<p>a) See response to CAR 10(a) above.</p> <p>b) See responses to CAR 8. BUT: parameters relevant for buffer zones (leakage and outside effects) will be added</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>
<p><b>Corrective Action Request 13.</b></p> <p>Clarify if <math>\Delta C_{BSL}</math> and <math>\Delta C_{WPS}</math> need to be multiplied by 44/12</p>	<p><b>Data and Parameters (VCS v3.4 Section 4.8.1)</b></p>		<p>Done</p>	<p>Multiplication by 44/12 was added as required. Request closed.</p>
<p><b>Clarification Request 10.</b></p> <p>a) Section 9.3.3: Clarify and justify for which parameters/input values an expert judgement is sufficient to obtain reliable estimates of GHG emissions.</p>	<p><b>9.3 Description of the Monitoring Plan (Meth template v3.3)</b></p>		<p>Need clarification of the comment. Wherever expert judgement is needed it is clearly indicated.</p>	<p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project de-</p>

## Summary of Request and Responses by Methodology Developer

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



Request	Reference to VCS requirement	Question/ Suggestion to the Methodology Developer from VCS & Additional Comment or Clarification	Summary of Response by Methodology Developer	Conclusion by Audit Team
				velopers is up to the assessing auditor. Request closed.
b) Section 9.3.4: Clarify if all parameters listed in are listed in the respective section regarding “parameters to be monitored”			Separate table for each of the parameters or can it be summarised? Items in tables are quite detailed.	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
c) Section 9.3.4: Specify “small and isolated events” of fire			Added: ‘with de minimis effects on GHG emissions’	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.
d) Section 9.3.4: Clarify if the cancelling of the Fire Reduction Premium reflects the potential emission of GHG due to such an event.			Not entirely sure what is meant here. As in the case of catastrophic fires, anthropogenic fires are assumed to have occurred in the baseline as well and so no accounting is needed.	Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project de-

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<p>e) Section 9.3.6: Clarify if the procedures provided in this section are obligatory for potential PPs in order to estimate GHG emission on basis of GEST and water table depth in compliance with the methodology?</p>			<p>Not entirely sure what is meant here. The methodology refers to 9.3.6 in various instances. The PP is thus supposed to apply procedures in 9.3.6 as instructed.</p>	<p>velopers is up to the assessing auditor. Request closed.</p> <p>Based on the clarification provided by VCS (Mail: Andrew Beauchamp / Mi 29.06.2016 21:27 CET) the final verdict over the applicability of the approach chosen by the project developers is up to the assessing auditor. Request closed.</p>

## Information Reference List

Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs



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## ANNEX 2: INFORMATION REFERENCE LIST

Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date						
1.		<p>Interviewed Persons:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Position, Organisation</th> </tr> </thead> <tbody> <tr> <td>Dr. Igino Emmer</td> <td>Silvestrum</td> </tr> <tr> <td>John Couwenberg</td> <td>Greifswald University</td> </tr> </tbody> </table>	Name	Position, Organisation	Dr. Igino Emmer	Silvestrum	John Couwenberg	Greifswald University	
Name	Position, Organisation								
Dr. Igino Emmer	Silvestrum								
John Couwenberg	Greifswald University								
2.	PP	Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs	Version 8/15/2016						
3.	VCS	AFOLU Requirements v.3.4	Oct 2013						
4.	VCS	VCS Standard v.3.5	Mar 2015						
5.	VCS	VMD0046 Methods for monitoring of soil carbon stock changes and greenhouse gas emissions and removals in peatland rewetting and conservation project activities (M-PEAT)	Mar 2015						
6.	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories	2006						
7.	Couwenberg et al	Assessing greenhouse gas emissions from peatlands using vegetation as a proxy. Hydrobiologia, 674, 67-89.	2011						