

# VERIFICATION REPORT

(ISO 14064-2)

## CLIMATE PROTECTION BY REWETTING OF KÖNIGSMOOR



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|----------------------|---|
| <b>Project Title</b> | Climate Protection by Rewetting of Königsmoor<br><i>(Klimaschutz durch Wiedervernässung des Königsmoores)</i> |
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## Zusammenfassung

TÜV Rheinland ist beauftragt worden, die Verifizierung des Projektes „Klimaschutz durch Wiedervernässung des Königsmoores“ nach dem ISO 14064-2 Standard durchzuführen. Ziel ist die durch den Projektentwickler gemachten Angaben zur Inanspruchnahme von Emissionsminderungsrechten zu bestätigen. Zur Berechnung und Beurteilung der quantitativen Emissionsreduktionen des vorgeschlagenen Projektes wurde die VCS Methodology „Baseline and Monitoring Methodology for the Rewetting of Drained Peatlands used for Peat Extraction, Forestry or Agriculture“ herangezogen.

Die Projekt-Verifizierung ist dabei gemäß folgender Einzelschritte durchgeführt worden:

- Begutachtung der Anfangsdokumentation
- Vor-Ort Audit
- Übermittlung von Änderungsanforderungen sowie Fehlerbereinigung. Überwachung der Einhaltung der methodischen Anforderungen für den Projektentwickler
- Klärung ausstehender Nicht-Konformitäten
- Ausstellung des Verifizierungsberichtes (Verification Report)

Das freiwillige Vor-Ort-Audit fand am 17/04/2014 statt, wobei wichtige Informationen über Projektplan, Projektverdegang, Technologie und Erwartungen übermittelt wurden.

Anhand der vorliegenden Berichte, durchgeführter Diskussionen mit dem Projektentwickler und des überarbeiteten Projektplans nach ISO 14064-2, wird ein positives Gutachten für das Projekt „Klimaschutz durch Wiedervernässung des Königsmoores“ erteilt. Weiterhin, wurde verifiziert dass das Projekt jährlich 666 tCO<sub>2,eq</sub>, während der ersten 30 Jahre nach Projektbeginn, und 1037 tCO<sub>2,eq</sub> während der folgenden 20 Jahre mindert.

## TABLE OF CONTENTS

|       |  |    |
|-------|--|----|
| 1     | Introduction .....   | 4  |
| 1.1   | Objective .....  | 4  |
| 1.2   | Scope and Criteria .....   | 4  |
| 1.3   | Level of Assurance and Materiality .....   | 4  |
| 1.4   | Summary Description of the Project .....   | 5  |
| 2     | Verification Process .....   | 5  |
| 2.1   | Method and Criteria.....   | 5  |
| 2.2   | Document Review .....  | 6  |
| 2.3   | On-site Audit and Interviews .....   | 6  |
| 2.4   | Resolution of Findings.....  | 7  |
| 3     | Verification Findings.....   | 7  |
| 3.1   | Project Details .....  | 7  |
| 3.1.1 | Project type, technologies and measures implemented, and eligibility of the project..... | 7  |
| 3.1.2 | <i>Project proponent and other entities involved in the project</i> .....                | 7  |
| 3.1.3 | Project start date .....   | 7  |
| 3.1.4 | Project crediting period .....   | 8  |
| 3.1.5 | Estimated GHG emission reductions or removals .....                                      | 8  |
| 3.1.6 | Project location.....  | 9  |
| 3.1.7 | Ownership .....  | 9  |
| 3.2   | Application of Methodology .....   | 9  |
| 3.2.1 | Title and Reference .....  | 9  |
| 3.2.2 | Applicability .....  | 9  |
| 3.2.3 | Project Boundary.....  | 11 |
| 3.2.4 | Baseline Scenario .....  | 11 |
| 3.2.5 | Quantification of GHG Emission Reductions and Removals .....                             | 11 |
| 3.2.6 | Monitoring Plan .....  | 14 |
| 4     | Verification Statement.....  | 15 |

## 1 INTRODUCTION

### 1.1 Objective

Validation of project documentation is the 2<sup>nd</sup> major step in development of ISO project cycle. It is PP responsibility to develop ISO Project Plan and contract approved VVB for the validation process. The objective of a validation is to have an independent third party, who is assessing project design, i.e. ISO Project Plan, emission reduction calculations, monitoring plan, etc., and projects compliance with ISO 14064-2:2006 requirements and host country criteria. In particular, VVB ensures that the Project Plan, including monitoring plan, additionality analysis and emission reduction calculations, is comprehensive, accurate and credible and meets the identified criteria.

Validation is deemed necessary to provide assurance to stakeholders of project's quality and intended amount of voluntary emission reductions.

### 1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the project description (ISO project Plan), which includes among others the assessment of monitoring plan, emission reduction calculations and additionality assessment.

Validation is performed in compliance with ISO 14064-2:2006 and ISO 14064-3:2006 criteria. In addition criteria stipulated by the latest version of new methodology "Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs", version 0.7 and the VCS methodological tool VT0001 "Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities", version 3.0 are implemented in project description.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

### 1.3 Level of Assurance and Materiality

The level of assurance was used to determine the depth of detail that the validation team placed in the validation plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3:2006). A material discrepancy is, according to ISO 14064-3, characterized by the possibility that the intended user of the GHG assertions will be influenced by such a discrepancy.

The final validation is based on the latest project description, supporting documents disclosed to the validator, own background research and investigations and information collected through performing interviews during on-site assessment. The validation opinion is assured throughout the credibility of the above mentioned sources of information.

Eventually, the conclusion (See chapter 4 Verification Statement) is made to a reasonable assurance level, and a materiality threshold of 5% is applied for identification of material omissions as defined in ISO 14064-3.

## 1.4 Summary Description of the Project

Proposed project activity is rewetting of peat land which covers ca. 60 ha and is situated within the municipality of Christiansholm in the district of Rendsburg-Eckernförde, in Schleswig-Holstein, northern Germany. This peatland has been cultivated since 1915 by using drainages and soil fertilisation. This led to deteriorated soil physical characteristics, such as soil compaction, reduction of water storage capacity and rise in the pH values.

In order to avoid the agricultural use and recover the peatland properties of the Königsmoor land, the Nature Conservation Foundation Schleswig-Holstein acquired those terrains in stepwise in the period 1991-1996

It has been shown that the proposed project activity reduces GHG emissions to the atmosphere in two ways, namely

- Prevention of peat degradation – i.e. avoidance of GHG emissions, which would have occurred due to the oxidation of uppermost soil layer in case of peat land cultivation
- Accumulation of peat – i.e. on long term basis the due to the rewetting of the area, the peat would accumulate again, though in a very slow rate.

Apparently, the prevention of peat degradation is the most relevant aspect, when claiming ER credits on short term basis.

## 2 VERIFICATION PROCESS

### 2.1 Method and Criteria

Validation of the project Climate Protection by Rewetting of Königsmoor has been performed in accordance to the internal procedures of TÜV Rheinland Energie und Umwelt GmbH for carbon project's validation, which strictly follows ISO 14046-3. The validation body holds ANSI accreditation to ISO 14065<sup>1</sup>. During preparation stage following tasks are accomplished:

- Selection of an appropriate validation team
- Development of the audit plan
- Preparation of project and standard specific validation protocol, which shows in a transparent manner, criteria and requirements, means of validation and the results from validating the different identified issues

The core validation consisted of the following phases:

- desk review of the project design document and complementary documents
- on-site visit (site inspection) and follow-up interviews with project stakeholders
- resolution of outstanding issues including material discrepancies and the issuance of the draft validation report
- Internal technical review and issuance of final validation report.

The following sections outline each step in more detail.

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<sup>1</sup> TÜV Rheinland Energie und Umwelt GmbH was awarded a Certificate of Accreditation by ANSI on 22/06/2012

## 2.2 Document Review

The desk review phase is characterised with the assessment of project description and emission reduction workbooks substantiated by additional supportive documents, all of which have been provided by the carbon consultant.

The following table outlines the documents reviewed as part of the validation process:

| Ref No. | Reference Document  |
|---------|---|
| /1/     | <i>“Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”, version 0.7</i> |
| /2/     | VT0001 “Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities”, version 3.0       |
| /3/     | Vernässung von Teilflächen des Königsmoores; Stiftung Naturschutz Schleswig-Holstein & Planungsbüro Mordhorst-Bretschneider GmbH                                  |
| /4/     | Klimaschutz durch Wiedervernässung des Königsmoores<br>Projektplan nach dem ISO 14064-2 Standard (ISO Project Plan), Version 02                                   |

## 2.3 On-site Audit and Interviews

The on-site inspection took place on 17/04/2014 on project site (Königsmoor) within the municipality of Christiansholm, Rendsburg-Eckernförde district, Germany. The objective of the on-site audit was

- to confirm rightness of project description, as per ISO project plan, including project location and characteristics;
- to acquire details on project development and operation, and
- to prove validity and authenticity of delivered supporting documents.

In the course of the site inspection, TÜV Rheinland validation team carried out interviews with project representatives, carbon consultant, and relevant project stakeholders.

| Name   | Organisation  | Topic  |
|--|---|--|
| <ul style="list-style-type: none"> <li>• Marius Bossen<br/>(Carbon Consultant)</li> </ul>  | GES Biogas GmbH   | <ul style="list-style-type: none"> <li>▪ Project start;</li> <li>▪ Project implementation;</li> <li>▪ Local requirements</li> <li>▪ Applied project technology</li> <li>▪ Physical conditions</li> <li>▪ Project status</li> <li>▪ Discussion on baseline scenario and emission reduction calculation;</li> <li>▪ Supporting documents;</li> </ul> |
| <ul style="list-style-type: none"> <li>• Gerrit Werhahn</li> <li>• Holger Mordhorst-Bretschneider</li> </ul> <p>(representatives of PO/PP)</p> | <p>Nature Conservation Foundation Schleswig-Holstein</p> <p>(Stiftung Naturschutz Schleswig Holstein)</p> | <ul style="list-style-type: none"> <li>▪ General project perception;</li> <li>▪ History of the region and project implementation;</li> <li>▪ Technical issues;</li> <li>▪ Supporting documents;</li> </ul>   |

## 2.4 Resolution of Findings

In the process of project validation, 15 findings have been identified and recorded in a CAR/CL list, which has been communicated to PO. Subsequently, PO responded to the raised issues by providing clarification, disclosing additional supporting evidences to VVB and accordingly revising ISO Project Plan. Eventually all recognised outstanding issues have been resolved and the resolution process has been tracked in CAR/CL table.

## 3 VERIFICATION FINDINGS

### 3.1 Project Details

The outcomes of the thorough validation process and the VVB opinion on the proposed project activity Climate Protection by Rewetting of Königsmoor are summarised below.

#### 3.1.1 Project type, technologies and measures implemented, and eligibility of the project

The project type is identified as rewetting of a former peatland that has been cultivated and used for agriculture. In the case of the proposed project activity, former wet soil has been drained to enable intensive grassland usage.

By putting the drainage system out of operation the area will be rewetted by rainfall over time. Water management by walls and overflows shall make it possible to divide the whole area into stratums with a uniform height profile and to manage the water level within the stratums. In this way the typical and natural vegetation can be established while the negative effects of flooded land on greenhouse gas emissions can be minimized. While peatland rewetting has been done several times before the special construction of walls from large areas of surface soils and peat is an innovative approach. Also this project will prohibit flooding of areas by active management and is designed to maximise the positive impact of peatland rewetting on greenhouse gas emissions.

#### 3.1.2 Project proponent and other entities involved in the project

All parties involved in the project activity are clearly indicated in the project description document and confirmed by the VVB in the course of the site visit so that

| ENTITY  | RESPONSIBILITY                   |
|---|----------------------------------|
| Nature Conservation Foundation Schleswig-Holstein | PO                               |
| GES Biogas GmbH                                   | Carbon consultant                |
| Planungsbüro Mordhorst-Bretschneider GmbH         | planning of rewetting activities |

#### 3.1.3 Project start date

In the course of the site audit, VVB experienced that the construction works are expected to start on 01/07/2014. However, the project owner revealed that no construction company has been contracted so far, namely at the time of on-site audit.

The start date of the proposed project activity is identified within the ISO Project Plan as 01/01/2015, which is the expected date on which the proposed project activity begins generating GHG emission

reductions. In addition, as per the new VCS methodology on rewetting of peatlands, the project crediting period start date is referred as the date on which the first monitoring period commences, and would be determined accordingly ex-post. The crediting period is therefore identified as 01/01/2015 – 31/12/2064, or alternative for 50 years, in case that the project plan is to be adjusted.

The starting date of the proposed project is identified as 01/07/2014, which is defined as the date where the construction starts and the project proponent has made the essential financial commitment to the implementation of the project.

### 3.1.4 Project crediting period

The project crediting period is indicated as 100 years, which is in line with the applied “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”. The last suggests project crediting period between 20 and 100 years, with total – not exceeding 100 years.

In addition, the period during which the project can claim ER from rewetting shall correspond to the peat depletion time, i.e. the time for which the peat stratum would have disappeared in the absence of the project. The corresponding calculation, as per the baseline and monitoring methodology, states that

$$t_{PDT-BSL,i} = Depth_{peat-BSL,i} / Rate_{sub-BSL,i}$$

|                      |   |
|----------------------|---|
| $t_{PDT-BSL,i}$      | Peat Depletion Time in the baseline scenario in stratum i in years elapsed since the project start (yr) |
| $Depth_{peat-BSL,i}$ | Average peat depth in the baseline scenario in stratum i at project start (m)                           |
| $Rate_{sub-BSL,i}$   | Average peat subsidence rate in the baseline scenario in stratum I (m/yr)                               |
| $i$                  | 1, 2, 3 ... $M_{BSL}$ strata in the baseline scenario   |

In the course of the site visit, the scientist from the Nature Conservation Foundation Schleswig-Holstein explained in details that the project area consists of 2 different peat layers, namely white peat layer over black peat layer, which have different physical characteristics and average peat subsidence rate of 1 cm/year. Furthermore, map illustrating the peat depths within each sub-area was disclosed to the VVB, showing that at least the peat depth of 2.5 m in the baseline scenario at the project start is guaranteed. Thus the peat depletion time, which is estimated to significantly more than 100 years, exceed the suggested project crediting period, i.e. 50 years.

### 3.1.5 Estimated GHG emission reductions or removals

In compliance with the latest version of new methodology “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”, version 0.7 and substantiated by the emission reduction calculation, which are validated and proved as accurate by the VVB in the subsequent sections, the expected annual GHG emission reductions generated by the proposed project activity are estimated to 666 tCO<sub>2,eq</sub>/year during the first 30 years of project implementation and to 1037 tCO<sub>2,eq</sub>/year for the following 20 years.

### 3.1.6 Project location

Proposed project activity is located within the municipality of Christiansholm in the district of Rendsburg-Eckernförde, in Schleswig-Holstein, northern Germany. During the site inspection, geographic coordinates are confirmed to be as indicated in the ISO Project Plan.

### 3.1.7 Ownership

As it has been mentioned in the project description file and evidenced by the VVB on hand of *Purchase Agreements*, the project and the land on which the project is executed, belongs to the Nature Conservation Foundation Schleswig-Holstein.

## 3.2 Application of Methodology

### 3.2.1 Title and Reference

The latest version of *new methodology “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”, version 0.7 /1/* is used to develop the proposed project activity under VCS. The methodology outlines transparent and conservative procedures to estimate the reduction of net greenhouse gas emissions resulting from project activities implemented to rewet drained peatlands in temperate climatic regions.

In order to demonstrate additionality of the proposed project activity, PO applied the latest version of VCS methodological tool VT0001 “Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities”, version 3.0 /2/. As specified within the tool, it has been adapted from the CDM “Tool for the Demonstration and Assessment of Additionality in A/R CDM Project Activities”, Version 02

### 3.2.2 Applicability

As per the selected methodology, its scope “is limited to project activities that aim at the rewetting of peatlands that have been drained for forestry, peat extraction or agriculture, but where these activities are not or no longer profitable. Post-rewetting land use is limited to forestry, agriculture, nature conservation/recreation, or activities limited to those aiming at GHG emission reductions, or a combination of these activities.” The term ‘peatland rewetting activity’ is restricted to the definition as per VCS AFOLU Requirements v3.1. Furthermore, it is specified that the methodology is applicable only to project activities in temperate climatic region.

The applicability of the methodology to the proposed project activity is discussed in detail in section 1.11 of the ISO Project Plan /4/, following the applicability criteria listed within the methodology and the tool and determined by the VVB, as demonstrated in the following table (*Table 1*).

**Table 1:** Assessment of applicability of the selected methodology to the proposed project activity

| Applicability criteria of the methodology  | Criteria fulfilled   | Determination by the validation team   |
|--|--|--|
| a) Project activities aim at the rewetting of peatlands that have been drained <b>for forestry</b> that is not or no longer profitable (as determined on the basis of annual reports, annual accounts, market studies, government studies, or land use | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | In the course of the on-site audit and as explained by the PO, the land incorporated in the proposed project activity is a peatland, which has been drained in the past for the purpose of |

|  |  |  |
|--|--|--|
| <p>planning reports and documents), or <b>peat extraction</b> that has been abandoned at least 2 years prior to the project start date, or <b>agriculture</b> that has been abandoned at least 2 years prior to the project start date, 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, agriculture, nature conservation/recreation, or activities limited to those aiming at GHG emission reductions, or a combination of these activities. Peat extraction does not occur.</p> |  | <p>agriculture. It has been clarified that the land has been used as cultivated grassland.<br/>The proposed project activity aims the rewetting of those peatlands and thus the GHG emission reductions.</p> |
| <p>b) Harvesting in the baseline scenario within the project boundary does not occur or is non-commercial in nature and is then conservatively not accounted for. Carbon storage in wood products in the with-project scenario is conservatively not accounted for.</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>The Baseline scenario is the continuation of the former land use, namely the intensive use of grassland. No forests are present in the baseline scenario.</p>   |
| <p>c) The collection of firewood in the baseline scenario may occur but is conservatively not accounted for.</p>   | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>N.A.</p>  |
| <p>d) The burning of biomass within the project boundary in the with-project scenario does not occur. Biomass burning in the baseline scenario may occur but GHG emissions are conservatively not accounted for.</p>   | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>N.A.</p>  |
| <p>e) The estimation of GHG emissions from the peat soil is based on GHG Emission Site Types (GESTs - Section 8.1.3), and is not based on peat stock changes (e.g. subsidence rates).</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>As it has been witnessed by VVB, displayed in the ISO project plan and explained by carbon consultant and PO, the GHG emission reductions are calculated based on the GEST model.</p>                     |
| <p>f) The project boundary shall be designed such that the project GHG benefits are not negatively affected by drainage activities that occur outside the project area<sup>5</sup>.</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>The project site has been witnessed by VVB in the course of the on-site audit. In addition, the PO explained the designated constructions in details on hand of design maps.</p>                          |
| <p>g) Leakage caused by activity shifting, market effects and hydrological connectivity are avoided by project design and site selection<sup>6</sup>.</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>N.A.</p>  |
| <p>h) Live tree vegetation may be present and subject to carbon stock changes (e.g. due to harvesting) in both the baseline and with-project scenarios.</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>N.A.<br/>No trees were observed on the project site</p>   |
| <p>i) If the project intends to claim emission reduction from peat fires, the with-project scenario shall involve a combination of peatland rewetting and fire management.</p>   | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>N.A.<br/>ER from peat fires are not intended.</p>   |
| <p>j) For claiming GHG emission reductions from reducing peat fires, it shall be demonstrated that</p>   | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>N.A.</p>  |

|  |  |  |
|--|--|--|
| <p>a threat of frequent on-site fires exists and the overwhelming cause of ignition of the peat is anthropogenic (e.g. drainage of the peat, arson). 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.</p> |  |  |
| <p>k) It can be demonstrated (e.g. by referring to peer-reviewed literature) that in the with-project scenario N<sub>2</sub>O emissions are insignificant or decrease in the with-project scenario compared to the baseline scenario, and therefore N<sub>2</sub>O emissions need not be accounted for.</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>N.A.</p>  |
| <p>l) N-fertilizers are not used in the with-project scenario</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>It has been stated that no fertilizers would be added to the project site during the project duration</p>                               |
| <p>m) In the baseline scenario the peatland is drained.</p>  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No | <p>As already indicated the baseline scenario is the continuation of the current land-use of the project, i.e. the peatland is drained</p> |

### 3.2.3 Project Boundary

VVB witnessed that as per applied VCS methodology, the project area is precisely defined within the ISO project plan, by means of map and definite geographic coordinates. In the course of the site-visit, project boundaries have been discussed and confirmed.

### 3.2.4 Baseline Scenario

VVB observed that within the ISO project plan the continuation of the current practice, namely the acquisition of intensive cultivated grassland use, is identified as the most plausible baseline scenario for the proposed project activity

The baseline scenario for the proposed project activity is determined based on the applied VCS methodology /1/ and the referenced methodological tool VT0001 “Tool for the determination and assessment of additionality in AFOLU project activities” v3.0 /2/, which are strictly followed and correctly applied. The validation team examined all assumptions and data used for the identification of the baseline scenario, and concluded that those are relevant correctly interpreted. Therefore, the VVB concludes that the suggested baseline scenario seems reasonable and represents what would have occurred if the proposed project activity would not be undertaken.

### 3.2.5 Quantification of GHG Emission Reductions and Removals

In accordance to the applied VCS methodology for the rewetting of drained peatland, the net GHG benefits generated by the proposed project activity are calculated as

$$NER_{RDP} = GHG_{BSL} - GH_{GWPS} + Fire\ Premium - GHG_{LK}$$

Where following stays for

|                     |  |
|---------------------|--|
| $NER_{RDP}$         | Total net CO <sub>2,eq</sub> emission reductions from the RDP project activity                                 |
| $GHG_{BSL}$         | Net CO <sub>2,eq</sub> emission reductions in the baseline scenario  |
| $GHG_{WPS}$         | Net CO <sub>2,eq</sub> emission reductions in the with-project scenario  |
| <i>Fire Premium</i> | Net CO <sub>2,eq</sub> emission reduction reductions from peat combustion due to rewetting and fire management |
| $GHG_{LK}$          | Net CO <sub>2,eq</sub> emission reductions due to leakage  |

For the beginning phase of the proposed project activity, and in line with the selected baseline and monitoring methodology, the GHG emissions are estimated based on the GEST (Greenhouse Gas Emission Site Type) approach, where vegetation type or water class is used as indicators of annual GHG fluxes. It is indicated in the ISO project plan and was discussed during the audit, that water level samples are taken during the initial implementation phase where no vegetation can be determined and the respective water classes have been assigned to the different project stratum. It is worth mentioning that the GHG ERs presented in the project plan are based on the report “*Vernässung von Teilflächen des Königsmoores*”, prepared by the Mordhorst-Bretschneider GmbH Planning office and issued by the Nature Conservation Foundation Schleswig-Holstein.

Within the report 20 open land sub-areas and 22 ditches sections are differentiated based on the water class and the specific emission potential, as per the GEST is assigned to each sub-area.

### 3.2.5.1 Quantification of baseline emissions

The basic formula for the calculation of the baseline emissions, indicated in the methodology as

$$GHG_{GESTbsl,i,t} = A_i \times GHG_{WL\ bsl-CO_2,i,t}$$

Has been applied, where the GHG emissions per ha, estimated based on the water class, are multiplied by the actual area of the specific sub-area or ditch section.

Eventually it is determined that the annual baseline emissions of the proposed project correspond to

$$GHG_{GESTbsl,total} = GHG_{GESTbsl,ditches} + GHG_{GESTbsl,open-land}$$

|   |
|---|
| $GHG_{GESTbsl,total} = 1,174.12\ tCO_{2,eq}/year + 42.32\ tCO_{2,eq}/year = \mathbf{1,216.44\ tCO_{2,eq}/year}$ |
|---|

### 3.2.5.2 Quantification of project emissions

Within the ISO project plan and the primary report “*Vernässung von Teilflächen des Königsmoores*”, it has been indicated that GHG emissions due to the project activity occur and are estimated ex-ante, therefore, shall be monitored in a specified time intervals. The water level, i.e. the water class, of the project area during the project crediting period is expected to change, where 2 main approaches are considered by the estimation of the project emissions, namely on short- and long term. The VVB witnessed that the undertaken steps and assumptions for the estimation of the project emissions are credible and in line with the selected VCS methodology

Therefore, average annual project emissions have been determined as

- for the first 30 years

$$GHG_{GEST,wp<30,total} = 550 \text{ tCO}_{2,eq}/\text{year}$$

- and for the period of 30 to 50 years after project begin

$$GHG_{GEST,wp30-50,total} = 179 \text{ tCO}_{2,eq}/\text{year}$$

### 3.2.5.3 Quantification of leakage

As per the selected VCS methodology, leakage emissions are not considered. Indeed, as part of the applicability assessment, the project proponent and/or carbon consultant demonstrates that the project is not subject to market or ecological leakage.

Therefore, for the Climate Protection by Rewetting of Königsmoor, the VVB confirms that

$$GHG_{LK} = 0 \text{ tCO}_{2,eq}/\text{year}$$

### 3.2.5.4 Summary of net GHG emission reductions or removals

Climate Protection by Rewetting of Königsmoor was considered to induce GHG emission reductions, which as per the new VCS methodology “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”, version 0.7 /1/**Error! Reference source not found.** are estimated as  $NER_{RDP} = GHG_{BSL} - GH_{GWPS} + \text{Fire Premium} - GHG_{LK}$ , (see section 3.2.5), so that

- For the period of 30 years from project begin

$$NER_{RDP} = GHG_{BSL} - GH_{GWPS} + \text{Fire Premium} - GHG_{LK} \cong 666 \text{ tCO}_{2,eq}/\text{year}$$

- For the period from 30 to 50 years after the project begin

$$NER_{RDP} = GHG_{BSL} - GH_{GWPS} + \text{Fire Premium} - GHG_{LK} \cong 1037 \text{ tCO}_{2,eq}/\text{year}$$

Therefore, for the entire crediting period of 50 year, the Climate Protection by Rewetting of Königsmoor deems to cause 40,720 tCO<sub>2,eq</sub>. It should be mentioned that the value of total emission reductions during the entire crediting period is conservatively rounded down.

The validation team confirms that the emission reduction calculations are performed properly, by applying the latest version of the new VCS methodology “Baseline and monitoring methodology for the rewetting of drained peatlands used for peat extraction, forestry or agriculture based on GESTs”, version 0.7. As already demonstrated in the ISO Project Plan /4/ and discussed in *section 3.2.2 ‘Applicability’* of the current document, Climate Protection by Rewetting of Königsmoor is proved to fulfil all eligibility criteria listed under the methodology. Furthermore, considering the experience of the validation team, the estimated annual GHG emission reductions are assessed as reasonable.

### 3.2.5.5 Documentation used as the basis for assumptions and sources of data

The single components of the equation have been assessed by the VVB in the previous sections, providing details on the applied formulas. All steps required for the calculation of baseline-, project- and leakage emissions for Climate Protection by Rewetting of Königsmoor project are sufficiently documented

and the choice of data vintage and calculation methods are justified in a readily comprehensible manner within the ISO project plan. Furthermore, data sources are examined by the VVB. Consequently, the following is observed:

- All implemented data are referenced and based on reliable sources; All sources are correctly quoted and interpreted
- The most recent data available at the time of submission of the Project Plan to the validation body are applied; otherwise default values, which are acknowledged by CDM, are used.
- The data, for which ex-ante data vintage has been selected, are clearly listed in *section 5.2* of ISO Project Plan, indicating that the values for those parameters are determined at the time of validation and would not be altered during the entire crediting period.

Therefore, VVB confirms that the Climate Protection by Rewetting of Königsmoor will result in an average annual emission reduction  $NER_{rdp < 30 \text{ years}} = 666 \text{ tCO}_{2,eq}/\text{year}$  and  $NER_{rdp > 30 \text{ years}} = 1037 \text{ tCO}_{2,eq}/\text{year}$  during the crediting period, which is calculated on ex-ante bases, being aware of the conservative principle.

### 3.2.6 Monitoring Plan

Assessment of the monitoring plan for the proposed project activity is an essential part of the validation process and basis for the verification of the GHG emission reductions. Since at the time of on-site visit, Climate Protection by Rewetting of Königsmoor has been operational, all relevant metering devices have not been installed yet and the validation team was not able to observe them, their position and calibration, etc. Furthermore, PM and PP explained in depth the concept of the designated monitoring plan and provided the validation team with substantial details from project design phase.

#### 4 VERIFICATION STATEMENT

Stiftung Naturschutz Schleswig Holstein  
Eschenbrook 4  
24113 Molfsee

05/05/2014

RE: Verification Statement – CLIMATE PROTECTION BY REWETTING OF KÖNIGSMOOR, 1st crediting period from 01/01/2015 to 31/12/2064.

Nature Conservation Foundation Schleswig-Holstein with registered office at Eschenbrook 4, 24113 Molfsee/ Germany, has engaged TÜV Rheinland Energie und Umwelt GmbH to review and verify the ISO Project Plan for the 1st crediting period from 01/01/2015 to 21/12/2064 for the project activity Climate Protection by Rewetting of Königsmoor and all assertions related to the GHG project against the ISO 14064-2 requirements.

The verification of the Emission Reductions generated from the project activity for the indicated period is conducted in accordance to the standard ISO 14064-2 and ISO 14064-3, and the VCS methodology „Baseline and Monitoring Methodology for the Rewetting of Drained Peatlands used for Peat Extraction, Forestry or Agriculture” to a reasonable level of assurance by applying a materiality threshold of 5%. The project information has been verified and the Verification Report ID 21223197 “Verification report for the Project Climate Protection by Rewetting of Königsmoor” issued on 05/05/2014. The Verification Report includes all relevant information and evidence acquired during the Verification process.

Based on the on-site inspection and review of all available documentation, the verification team comes to the conclusion that the assertions are made in accordance with the requirements of the ISO standard and are material correct and fairly represent the required parameters without material discrepancies. The Emission Reductions claimed for the first crediting period, are verified to be 40,720 tCO<sub>2,eq</sub>, which is allocated as following:

- 666 tCO<sub>2,eq</sub>/year, for the period 01/01/2015 – 31/12/2044 (first 30 years);
- 1037 tCO<sub>2,eq</sub>/year, for the period 01/01/2045 to 31/12/2064 (following 20 years)

Cologne, 05/05/2014



Denitsa Gaydarova-Itrib