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Validation Report

VALIDATION OF THE CDM-PROJECT:
COTRIBÁ SWINE WASTE MANAGEMENT SYSTEM PROJECT

REPORT NO. 1086752

2008, March 05

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

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Subject: Validation of a CDM Project	
Accredited TÜV SÜD Unit: TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 - 80686 Munich Federal Republic of Germany	TÜV SÜD Contract Partner: TÜV SÜD DO BRASIL – SERVIÇOS TÉCNICOS PARA A INDÚSTRIA E O MEIO AMBIENTE LTDA. Rua Henrique Monteiro n.90, 10.º andar ZIP 05423-020 - São Paulo Brazil
Client: Cooperativa Agrícola Mista General Osório (COTRIBÁ) 2359 Mauá Street Ibirubá ZIP 98200-000 Brazil	Project Site(s): 1. Granja Volta Gaúcha, Quinze de Novembro, GPS coordinates: 28° 48' 33.9'' S, 53° 04' 51.4'' W. 2. Granja Várzea Grande, Ibirubá, GPS coordinates: 28° 38' 06.2'' S; 53° 08' 12.1'' W. 3. Granja XV de Novembro, Quinze de Novembro, GPS coordinates: 28° 45' 38.7'' S; 53° 05' 38.0'' W. 4. Granja Bohrz, Ibirubá, GPS coordinates: 28° 38' 48.8'' S; 53° 08' 22.1'' W and 28º38' 30.8'' S; 53º08' 49.1'' W.
Project Title: COTRIBÁ Swine Waste Management System Project	
Applied Methodology / Version: **AMS – III.D -** Methane Recovery in agricultural and agro industrial activities / Version 13	**Scope(s): 15**
First PDD Version: Date of issuance: 2007-10-17 Version No.: 1 Starting Date of GSP 2007-11-09	**Final PDD version:** Date of issuance: 2008-02-07 Version No.: 4
Estimated Annual Emission Reduction:	**15 252 tCO2e**
Assessment Team Leader: Martin Schroeder (TÜV SÜD Industrie Service GmbH)	**Further Assessment Team Members:** Johann Thaler (TÜV SÜD do Brasil) Konrad Tausche (TÜV SÜD Industrie Service GmbH)

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Summary of the Validation Opinion:

☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board in case letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.

☐ The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.

Abbreviations

ACM	Approved Consolidated Methodology
AWMS	Animal Waste Management System
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
PDD	Project Design Document
PP	Project Participant
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VS	Volatile Solids excretion
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

The validation objective is an independent assessment by a Third Party (Designated Operational Entity = DOE) of a proposed project activity against all defined criteria set for the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the CDM-EB. The ultimate decision on the registration of a proposed project activity rests at the CDM Executive Board and the Parties involved.

The project activity discussed by this validation report has been submitted under the project title:

COTRIBÁ Swine Waste Management System Project.

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities the scope is set by:

- The Kyoto Protocol, in particular § 12
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions by the EB published under http://cdm.unfccc.int
- Specific guidance by the EB published under http://cdm.unfccc.int
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodlogy (CDM-NM)
- The applied approved methodology
- The technical environment of the project (technical scope)
- Internal and national standards on monitoring and QA/QC
- Technical guideline and information on best practice

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.

Once TÜV SÜD receives a first PDD version, it is made publicly available on the internet at TÜV SÜD's webpage as well as on the UNFCCC CDM-webpages for starting a 30 day global stakeholder consultation process (GSP). In case of any request a PDD might be revised (under certain conditions the GSP will be repeated) and the final PDD will form the basis for the final evaluation as presented by this report. Information on the first and on the final PDD version is presented at page 1.

The only purpose of a validation is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

2 METHODOLOGY

The project assessment aims at being a risk based approach and is based on the methodology developed in the Validation and Verification Manual (for further information see www.vvmanual.info), an initiative of Designated and Applicant Entities, which aims to harmonize the approach and quality of all such assessments.

In order to ensure transparency, a validation protocol was customised for the project. TÜV SÜD developed a "cook-book" for methodology-specific checklists and protocol based on the templates presented by the Validation and Verification Manual. 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 validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below.

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

Validation Protocol Table 1: Conformity of Project Activity and PDD				
Checklist Topic / Question	***Reference***	***Comments***	***PDD in GSP***	***Final PDD***
The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then further subdivided. The lowest level constitutes a checklist question / criterion.	*Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further 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 **Request** has to be substantiated within this column*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification Request (CR)** is used when the validation team has identified a need for further clarification.*	*Conclusions are presented in the same manner based on the assessment of the final PDD version.*

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests			
Clarifications and corrective action requests	***Ref. to table 1***	***Summary of project owner response***	***Validation team conclusion***

If the conclusions from table 1 are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 1 where the Corrective Action Request or Clarification Request is explained.*	*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 should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 1, under "Final PDD".*

In case of a denial of the project activity more detailed information on this decision will be presented in table 3.

Validation Protocol Table 3: Unresolved Corrective Action and Clarification Requests		
Clarifications and corrective action requests	***Id. of CAR/CR 1***	***Explanation of the Conclusion for Denial***
If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.	*Identifier of the Request.*	*This section should present a detail explanation, why the project is finally considered not to be in compliance with a criterion.*

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body “climate and energy”. The composition of an assessment team has to be approved by the Certification Body ensuring that the required skills are covered by the team. The Certification Body TÜV SÜD operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL)
- Greenhouse Gas Auditor (GHG-A)
- Greenhouse Gas Auditor Trainee (T)
- Experts (E)

It is required that the sectoral scope linked to the methodology has to be covered by the assessment team.

The validation team was consisting of the following experts (the responsible Assessment Team Leader in written in bold letters):

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Martin Schröder	**ATL**	☑	☑	
Konrad Tausche	E	☑	☑	☑
Johann Thaler	GHG-A	☑	☑	☑

Martin Schröder is an appointed GHG-Auditor by the certifcation body "climate and energy" of TÜV SÜD Industrie Service GmbH. Within TÜV SÜD he is responsible for the validation and verification of forestry and agriculture based GHG mitigation projects. He passed extensive internal training in the field of auditing.

Konrad Tausche, the former head of department of environmental measurement technique at the Frankfurt office of TÜV SÜD Industrie Service GmbH, supports the "TÜV Carbon Management Service" in Munich since Dec. 2006. He has an academic background in physical and chemical engineering. An additional economic study was completed with the academic degree of a Master of Business Administration and Engineering (MBA and Eng.). In his experience of 15 years he verified a lot of different energy, chemical and incineration plants, emission control and mitigation projects.

Johann Thaler graduated as Master of environmental Economy at the University of Augsburg. During his study he got first experiences in environmental management systems. His master thesis was about a fuel switch program in Brazil as a CDM project. Based in Brazil he has been

working for TÜV SÜD as a GHG auditor on freelance basis since March 2005. He attended and successfully finished a ISO 14001 Environmental Management Internal Auditing Training.

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2.2 Review of Documents

The first PDD version submitted by the client and additional background documents related to the project design and baseline were reviewed as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

2.3 Follow-up Interviews

On November 13-14, 2007 TÜV SÜD performed an interview on-site with project participants to confirm selected information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in the context of the on-site visit.

Name	Organisation
Paulo Cericatto	Cotriba, manager
Guilherme Trein Peukert	Cotriba, veterinary
Gerson Fortuna	Cotriba, veterinary
Thiago Othero	Amazon, Project Director
Alexandre Paim Nora	Amazon, Technological analyst
Auri Benvegnu	Granja Volta Gaúcha, manager
Sidinei Teodoro de Campos	Granja XV de Novembro, manager
Vanderlei Capitani Basso	Granja Várzea, manager
Marcio Andre	Granja Rene Bohrz, manager

2.4 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation 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 project design. The 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 validation process, the concerns raised and responses that have been given are summarised in chapter 3 below and documented in more detail in the validation protocol in annex 1.

2.5 Internal Quality Control

As final step of a validation the validation report and the protocol have to undergo and internal quality control procedure by the Certification Body “climate and energy”, i.e. each report has to be approved either by the head of the certification body or his deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one.

It rests at the decision of TÜV SÜD’s Certification Body whether a project will be submitted for requesting registration by the EB or not.

3 SUMMARY OF FINDINGS

As informed above all findings are summarized in table 2 of the attached validation protocol.

History of the validation process

The audit team has been provided with a draft PDD in November 2007. Based on this documentation a document review and a fact finding mission in form of an on-site audit has taken place. Afterwards the client decided to revise the PDD according to the CARs and CRs indicated in the audit process. The final PDD version submitted in February 2008 serves as the basis for the assessment presented herewith. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM to achieve a reduction of anthropogenic GHG emissions by sources and to contribute to sustainable development.

Project description

The project proposes to replace the existing Animal Waste Management Systems (AWMS) by a lower-GHG emitting AWMS. Currently, swine waste is flushed from the barns and treated in sequential anaerobic lagoon management systems that results in high GHG emissions.

The project will replace this system by anaerobic digesters that capture and combusts methane in a controlled and economically sustainable manner. Certified Emission Reductions are claimed exclusively for the emission reductions associated to methane capture and combustion.

Findings

In total the assessment team expressed 49 Corrective Action Requests. There were no Clarification Requests expressed.

The key findings during the validation process were related to the provision of information which was missing or not updated in the PDD, inconsistencies in the information within the PDD and between the PDD and other CDM related documents, to the barrier analysis and baseline emissions. Besides, parameters were missing or not complete and information regarding monitoring was revised and included.

Considering these findings the PDD version 1 has been revised and the actual PDD version 4 is in compliance with the CDM requirements.

Baseline calculation

The baseline is been determined using reliable assumptions. The parameter “livestock population” as one of the decisive parameters for the quantitative prognosis is determined by using reliable data and is based on recent historical data obtained from a period of between 9 to 12 months. During the on-site visit the availability of such comprehensive data could be observed predominantly. Hence, plausible data have been provided from traceable sources ensuring the reliability of the parameter.

The methane emission factors are determined for each animal category (gilts, sows in gestation, sows, boars, piglets, nursery, finishers) separately, considering local weight data and local VS

values (except for breeding swine, where default values have been used) besides default values defined as per the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

Regarding “Granja Várzea Grande”, baseline emissions have been finally reduced by 50 %, as the site uses a small solid separator and a portion of the waste is regularly removed for irrigation purposes from the first lagoon. The validation team considers this approach as conservative course of action.

The proposed project activity considers as project emissions “methane emissions from anaerobic digesters” and “methane emissions from inefficiency in methane flaring”, even though this is not requested by the methodology AMS-III-D, version 13. This shows the conservative approach chosen by the project participants.

Project CO2 emissions from fossil fuel combusted to operate the AWMS and emissions from electricity consumption to operate the AWMS have not been considered, as there is no increase in fossil fuel consumption and no significant increase in energy consumption due to the project activity. The total electricity consumption of the electric pumps and the gas compressors for all farms is approximately 3 MWh per year. Besides, there is no leakage due to the project activity.

Default values have been correctly applied and in the case where a selection of different options was possible, the chosen values are appropriate.

The baseline scenario is the continuation of the current Animal Waste Management System, namely the treatment of swine waste in anaerobic lagoons. There is no legal requirement nor any current planning for a legislation to capture and combust greenhouse gases produced by swine manure in AWMS.

Additionality

The additionality of the project was checked carefully. In doing so the assessment team has put the main focus on the following issues.

As the starting date of the project activity is after the date of GSP uploading, the validation team has not regarded it as necessary to ask for an explicit evidence that the CDM was seriously considered in the decision to proceed with the project activity.

Project participants decided to apply Attachment A to Appendix B of the Simplified modalities and procedures for small-scale clean development mechanism project activities in order to demonstrate additionality

In step one alternatives to the proposed project activity are identified. Step two exlcudes those alternatives which are not plausible or not in line with laws or regulations. After step two, only two alternatives, namely the continuation of the status-quo (AWSM in anaerobic lagoons) and the proposed project activity are left over.

Step 3, the barrier analysis shows, why the proposed project activity without CDM would not be realized. Investment and technological barriers prevent the implementation of a digester based AWMS.

Step 4, the common practice analysis, describes that the usual technology applied to Brazilian swine confinement farms is based on anaerobic lagoons. Therefore the project activity, which consists on anaerobic digesters, is not similar to what can be commonly found in Brazil.

To conclude the additionality assessment it may be stated that the proposed project activity is without doubt additional.

The project boundary, the project´s starting date as well as the starting date of the crediting period are clearly defined in the last submitted PDD.

Monitoring

The final PDD includes all relevant parameters to be monitored in order to determine baseline and project emissions. Baseline emissions will be monitored as according to the requirements of the methodology AMS III-D, version 13. In the case of project emissions ("methane emissions from anaerobic digesters" and "methane emissions from inefficiency in methane flaring), the methodology does not indicate those project emissions and its monitoring. Project participants decided to calculate those project emissions according to the monitored amount of methane destined to the flares, which is retraceable to the validation team.

The final destination of sludge will also be monitored to ensure that anaerobic conditions are avoided.

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4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on UNFCCC website by installing a link to TÜV SÜD's own website and invited comments by Parties, stakeholders and non-governmental organisations during a period of 30 days.

The following table presents all key information on this process:

webpage: http://www.netinform.de/KE/Wegweiser/Ebene1_Projekte.aspx?Ebene1_ID=26&mode=0	
Starting date of the global stakeholder consultation process: 2007-11-09	
Comment submitted by: -	**Issues raised:** -
Response by TÜV SÜD: -	

5 VALIDATION OPINION

TÜV SÜD has performed a validation of the following proposed CDM project activity:

COTRIBÁ Swine Waste Management System Project

The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board.

An analysis as provided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the final PDD version.

The validation is based on the information made available to us and the engagement conditions detailed in this report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Munich, 2008-__-__

Werner Betzenbichler

Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH

Munich, 2008-

Martin Schröder

Assessment Team Leader

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Annex 1: Validation Protocol

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Annex 2: Information Reference List