Validation Report

AGCERT INTERNATIONAL LIMITED, IRELAND

Validation of the AWMS GHG Mitigation Project BR05- B – 13, Minas Gerais, Goiás, Brazil

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TÜV SÜD Industrie Service GmbH

Carbon Management Service
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Industrie Service

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Summary:

The Certification Body ”Climate and Energy” has been ordered by AgCert International LLC, Ireland (AgCert International) to perform a validation of the above mentioned project.

In summary, it is TÜV SÜD´s opinion that the project “AWMS GHG Mitigation Project BR05-B–13 in the Minas Gerais and Goiás, Brazil”, as described in the revised project design document of february 2006, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology AM0016 / Ver. 02 entitled “*Greenhouse gas mitigation from improved Animal Waste Management Systems in confined animal feeding operations*.”

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

Prior to the submission of this validation report to the CDM Executive Board, TÜV SÜD will have to receive the written approval of the DNA of involved parties, including confirmation by the DNA of Brazil that the project assists in achieving sustainable development.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 1,242,181 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 124,218 tonnes CO_2 represents a reasonable estimation using the assumptions given by the project documents.

Work carried out by:	• Markus Knödlseder (GHG lead auditor, Auditor Environmental Management Systems (ISO 14001)) • Hannes Thaler (GHG auditor, ISO 14001Auditor Local expert) • Dr. Albert Geiger (GHG auditor, ISO 14001Auditor)	**Internal Quality Control by:** Michael Rumberg

Abbreviations

AgCert Brazil	AgCert Do Brasil Solucoes Ambientais Ltda
AgCert International	AgCert International PLC, Ireland
AWMS	Animal Waste Management Systems
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DOE	Designated Operational Entity
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
OE	Operational Entity
PDD	Project Design Document
TÜV SÜD	TÜV Industrie Service GmbH TÜV SÜD Group
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

AgCert International PLC, Ireland (AgCert International) has commissioned TÜV SÜD Industrie Service GmbH (TÜV SÜD) to validate the AWMS GHG Mitigation Project BR05-B–13 in the states of Minas Gerais and Goiás, Brazil. The validation serves as design verification and is a requirement of all CDM projects. The purpose of a validation is to have an independent third party assess of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakech Accords.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. TÜV SÜD has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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.

The audit team has been provided with the first PDD-version in October 2005. Based on this documentation a document review and a fact finding mission in form of an on site audit has taken place. The demanded additional information is addressed in annex 1. The information was given and the PDD was updated accordingly. That final PDD version (2) was submitted in February 2006 and serves as the basis for the final assessment presented herewith. The changes were not significant as only farms had to be removed from the PDD, because of missing documents; thus the global stakeholder process was not repeated.

Studying the existing documentation belonging to this project, it was obvious that the competence and capability of the validation team has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Environmental and Social Impact Assessment
- Skills in environmental auditing (ISO 14000, EMAS)
- Quality assurance
- Agricultural operations especially regarding manure management
- Technical aspects of gas flaring and biodigester operation
- Monitoring concepts
- Political, economical and technical random conditions in host country

According to these requirements TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV certification body “climate and energy”:

Markus Knodlseder is a lead auditor at the department “Carbon Management Service” in the head office of TÜV Industrie Service GmbH, TÜV Süd Group in Munich. He has been involved in the topic of environmental auditing, baselining, monitoring and verification due to the requirements of the Kyoto Protocol since oct. 2001. His main focus lies on renewable energies.

Dr. Albert Geiger is an auditor for environmental management systems at the department “Carbon Management Service” in the head office of TÜV Industrie Service GmbH, TÜV Süd Group in Munich. He is specialised in environmental issues.

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.

The audit team covers the above mentioned requirements as follows:

- Knowledge of Kyoto Protocol and the Marrakech Accords (Knödlseder)
- Environmental and Social Impact Assessment (All)
- Skills in environmental auditing (ISO 14000, EMAS) (All)
- Quality assurance (Knödlseder)
- Agricultural operations especially regarding manure management (Knödlseder/Dr. Geiger)
- Technical aspects of gas flaring and biodigester operation (Knödlseder/Dr. Geiger)
- Monitoring concepts (All)
- Political, economical and technical random conditions in host country (Tomao)

In order to have an internal quality control of the project, a team of the following persons has been composed by the certification body “climate and energy”:

- Rumberg Michael (project manager, GHG lead auditor)

1.3 GHG Project Description

This project proposes to apply to multiple swine Confined Animal Feeding Operations (located in Minas Gerais, Goiás, Mato Grosso and Mato Grosso do Sul, Brazil) a GHG mitigation methodology which is applicable to intensive livestock operations. The proposed project activities will mitigate AWMS GHG emissions in an economically sustainable manner, and will result in other environmental benefits, such as improved water quality and reduced odor. The project proposes to move the designated farms from a high-GHG AWMS practice; an open air lagoon, to a lower-GHG AWMS practice; an ambient temperature anaerobic digester with the capture and combustion of the resulting biogas. The concluding purpose of this project is to mitigate animal effluent related GHG by improving AWMS practices.

Project participant is AgCert Do Brasil Solucuoes Ambientas Ltda. The host party for this project activity is Brazil. In total 32 farms with 37 sites are contracted in the states of Minas Gerais and Goiás, Brazil.

The category of the project activity is in Scope 13 - Waste Handling and Disposal, and Scope 15 – Agriculture.

According to the PDD the starting date of the project activity is 06.01.2004. The 10 year non renewable crediting period starts 01/04/2006.

2 METHODOLOGY

The validation of the project consists of the following three phases:

- Desk review
- Follow-up interviews
- Resolution of clarification and corrective action requests

In order to ensure transparency, a validation protocol was customized for the project, according to the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, 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 Figure 1.

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

Validation Protocol Table 1: Mandatory Requirements			
Requirement	***Reference***	***Conclusion***	***Cross reference***
The requirements the project must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Validation report.*	*Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.*

Validation Protocol Table 2: Requirement checklist				
Checklist Question	***Reference***	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further sub-divided.	*Gives reference to documents where the answer to the checklist question or item is*	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification** is used when the validation*

The lowest level constitutes a checklist question.	*found.*	*interview (I). N/A means not applicable.*	*explain the conclusions reached.*	*team has identified a need for further clarification.*

Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Validation conclusion***
If the conclusions from the draft Validation 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 2 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 summarized in this section.*	*This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".*

Figure 1 Validation Protocol Tables

2.1 Review of Documents

The project design document submitted by the client and additional background documents related to the project design and baseline were reviewed. The project design document underwent several revisions addressing changes to the baseline and monitoring methodology requested by the CDM Executive Board and clarification requests issued by TÜV SÜD. The audit team has been provided with the first PDD-version in October 2005. The final updated PDD version 2 submitted in February 2006 serves as the basis for the assessment presented herewith.

2.2 Follow-up Interviews

In November 2005 TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the farms and AgCert Do Brasil Solucuoes Ambientas Ltda were interviewed. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Representatives of the farms	➢ Project design ➢ Technical equipment ➢ Sustainable development issues ➢ Additionality ➢ Crediting period ➢ Monitoring plan

	➢ Management system ➢ Environmental impacts ➢ Stakeholder process
AgCert Brasil	➢ Project design ➢ Technical equipment ➢ Sustainable development issues ➢ Baseline determination ➢ Additionality ➢ Crediting period ➢ Monitoring plan ➢ Environmental impacts ➢ Stakeholder process ➢ Approval by the host country

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification 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 communications between the Client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that will be given are summarized in chapter 3 below and documented in more detail in the validation protocol in Annex 1.

3 VALIDATION FINDINGS

In the following sections the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

1) The findings from the desk review of the project design documents and the findings from interviews during the follow up visit are summarised. A more detailed record of these findings can be found in the Validation Protocol in Annex 1.
2) Where TÜV SÜD had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Annex 1. The validation of the project resulted in six Corrective Action Requests and three Clarification Requests.
3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the Client and TÜV SÜD to resolve these Clarification or Corrective Action Requests is summarized.
4) The final conclusions for validation subject are presented.

The validation findings relate to the project design as documented and described in the final project design documentation.

3.1 Project Design

3.1.1 Discussion

The project participant is AgCert Do Brasil Solucuoes Ambientas Ltda,. The project is developed by AgCert International PLC, Ireland. Brazil as the host Party meets all relevant participation requirements. But the project has not been approved by the national DNAs yet and no Letter of Authorization has been issued.

The objective of the project ” AWMS GHG Mitigation Project BR05-B–13 in the States Minas Gerais and Goiás, Brazil” is to apply to the farm GHG mitigation measures which will mitigate GHG emissions in an economically sustainable manner. The project foresees to replace the open air lagoons by positive pressure covered lagoon cells, creating ambient temperature anaerobic digesters.

The project design does reflect current good practice. The design has been professionally developed. A validation of the compatibility of the single components carried out by the project developer resulted in a positive conclusion. The project does moreover apply state of the art equipment.

The project boundaries are clearly defined. The project bundles 32 farms with installations of digesters at 37 sites being contracted in the states Minas Gerais and Goiás, Brazil. During this assessment TÜV SÜD contacted and visited 14 sites indicated on the Information Reference List. As the project participant is operating/developing several similar CDM projects in the same or neighboring region, the validation process has shown that no farm of this project is included in any other existing (draft) PDD.

The project equipment can be expected to run for the whole project period and it can not be expected that it will be replaced by more efficient technologies.

Initial training and maintenance efforts are required. In the PDD and during the visit on site the project developer confirmed that such training has taken place and/or is envisaged. Documentation on executed and/or planned training activities has been submitted.

The project is currently in line with the relevant legislation and plans in the host country. The required environmental licenses are valid and have been submitted to the validation team.

It is not clear whether Brazil requires any specific CDM requirements to be fulfilled. But the project is considered to be in line with the sustainable development policies of Brazil as improvements to manure management as well as energy supply are relevant issues in the national Brazilian policy. The question can finally be answered after the issuance of the Letter of Approval by the Brazilian DNA.

It can be expected that the project will create additional environmental benefits by reducing emissions of Volatile Organics Compounds (VOCs). The project does moreover improve the quality of the fertilizer produced as a by-product to the farming activities.

The funding for the project does not lead to a diversion of official development assistance, as according to the information obtained by the audit team, ODA does not contribute to the financing of the project.

The project starting date and the operational lifetime are clearly defined. The crediting period is clearly defined.

3.1.2 Findings

Outstanding issue:

The project has not obtained a Letter of Approval/ Letter of Authorization from the Investor country and Brazilian government so far. No documentation has been submitted to the validation team. The issuance of these documents will also demonstrate whether the project is in line with sustainable development policies of the host country

> Response: The response will be given by the issuance of the Letter of Approval. This has not happened so far as the approval of the project depends on the review of the validation report which has to be submitted in advance.

Clarification Request 1:

In the PDD there is mentioned for all farms one biodigestor system.

However there could be identified 2 systems independently working from each other for farm “Fazenda São João”. This has to be cleared.

> Response: The PDD has been updated by AgCert

Clarification Request 4:

The location of the farms Ludmila, Uniao, Uniao Granja 2, Santa Lucia, Granja Cometa and Granja Lagoa is not correctly described in the PDD.

> Response: The site addresses have been updated in the PDD by AgCert. The name of Faz. Ludmila has been corrected throughout the PDD.

Corrective Action Request 4

The starting dates cannot be verified because of missing contract information. The contracts have to be delivered by AgCert.

> Response: The starting dates have been adjusted in the PDD and applicable contracts are submitted on a CD.

3.1.3 Conclusion

The findings detected by the validation team have been completely incorporated into the PDD by AgCert.

Given information are considered as sufficient and correct. The clarification requests and corrective action requests have been resolved and the project does comply with the requirements. However the outstanding issue has to be answered before the project can be submitted for registration.

Further details to that conclusion are documented in annex 1 of that validation report.

3.2 Baseline and Additionality

3.2.1 Discussion

The project is based on the approved methodology: AM0016 “Greenhouse gas mitigation from improved Animal Waste Management Systems in confined animal feeding operations”. The methodology has been approved by the CDM Executive Board at its 16th meeting in October 2004. The selected methodology has been designed for this project and hence the project is part of the methodology on which it is build upon. Therefore the respective baseline methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the baseline methodology.

The application of the methodology and the discussion and determination of the baseline are transparent. The application follows exactly each of the steps outlined in the methodology and answers the corresponding sections in a proper manner.

The baseline is been determined using reliable assumptions. The parameter “population” as one of the decisive parameters for the quantitative prognosis is determined by using reliable data and is moreover based on date obtained from a three year period in the past. During the visit on site the availability of such comprehensive data could be observed predominantly. Hence plausible data has been provided from traceable sources ensuring the reliability of the parameter. As the parameter is moreover monitored ex-post and compared with the metered data for biogas flow the correct amount of emissions reductions will be determined in the verification process.

The baseline has been based on project specific data and does sufficiently take into account policies and developments regarding legal, economic and social issues. There is no legal requirement to capture and combust greenhouse gases produced by swine manure in AWMS. There is currently also no planned legislation that is directed towards the emission of GHG as related to AWMS. The open air lagoon is hence considered the common AWMS practice in Brazil.

Concluding it can be stated that it has been made plausible that the chosen baseline scenario is the one deemed most realistic under the given frame conditions.

The project demonstrates via an economic analysis and the description of barriers that it is not the baseline scenario. Each step of the respective section of the methodology has hereby been applied in a correct manner. The elaborations in the PDD got substantiated by an external expert review. Concluding it has been made clear that the continuation of the AWMS by operating open air lagoons would be the most attractive course of action and hence the baseline scenario. During the visit on site the project owner substantiated these arguments by describing the financial result of the operations in the last two years.

The PDD does moreover elaborate on the starting date of the project activity and hereby successfully responds to the requirements defined in “step 0” of the “tool for the demonstration and assessment of additionality” approved by the EB (EB 16, annex 1). During the validation process the audit team obtained the information and evidenced that the start of project activities has been before the registration date of the first clean development mechanism project. It is described in detail and based on defined dates how the CDM has been taken into account from the beginning of the project.

The economic performance, the legal constraints and the common practice have been identified as potential risks to the baseline. The subsequent evaluation resulted in the assessment that no major risks to the baseline exist. This assessment is considered as being plausible.

References have been made to all data sources used.

3.2.2 Findings

Clarification Request 2:

The number of containment areas varies for Fazenda União – Granja 2. At the moment are only 4 barns in operation, only in the future there will be 6 barns in operation. The number of containment areas has to be adjusted in the PDD.

> Response: The barn quantity has been updated in the PDD by AgCert. Future expansion plans ensure emission calculations to be conservative.

Clarification Request No. 3:

The size of lagoon varies at the farms mentioned in the following table. The table demonstrates the differences between PDD numbers and the measurements done on-site. It should be made clear, that a lot of wrong data are based on wrong information given by the farmers and that it is not always easy to measure the right size of the lagoon because of difficult access, change of the lagoons by the time through vegetation and sometimes irregular shape of the lagoons. The depth of the lagoon is based on information given by the farmers and changes by the time because of the sedimentation of the solids in the lagoon.

Fazenda	On-site (size in metres)	PDD (size in metres)
Faz. Araujo	40x13x3	80x14x3
Faz. Ludmila	2nd lagoon: 23x6x3	38x12x3
Faz. Santa Lucia	1st lagoon: 27x10x1,50 (depth today, the original depth 3,80) 2nd lagoon: 45x16x 1,20 (depth today, original depth 3,80)	1st: 20x8x4 2nd: 23x10x4

> Response: The lagoon-sizes have been updated in the PDD by AgCert.

Corrective Action Request 1:

The following table shows the farms where the retention time is critical. The legal minimum retention time in Minas Gerais has to be 22 days (according to IEF and COPAM). Besides, the mandatory retention time has to be at least 30 days. The retention time is based first on

information given by the farmers, how often they take out the liquids for irrigation and secondly on a calculation (with a water consumption of 145 litres per sow (number based on EMBRAPA). Calculation: Total volume of lagoons divided by the water consumption of all sows;

Fazenda	Retention time (farmer information	Retention time (calculation)
Faz. Araujo	25 days	30 days
Faz. Fumal	15 days	20 days
Faz. Santa Lucia	15 days	7 and 15 days (depends on the lagoon which is in use)
Fazenda Cometa	20-25 days	43 days

Response: Issues is resolved, see conclusion

Corrective Action Request 3:

Many of the stated numbers of pigs, listed in annex 3 of submitted PDD are not correct a/o not transparent. Besides that some values have to be added or taken out of the calculation. The following table shows the measures which have to be undertaken:

Fazenda	Measures
Fazenda Chua	The data (nursery and finisher) of Sitio II of Fazenda Chua have to be added in the PDD, as the effluents of Sitio II (nursery and finisher) also feed the biodigestor;
Fazenda Fumal	The population began in Faz. Fumal for the different groups: Sows: beginning of March 2005 Nursery: beginning of July 2005 Finisher: beginning of September 2005. Before these dates all data have to be zeroed, otherwise they are double counted as the animals were transferred from Fazenda Uniao but not discounted at Fazenda Uniao.
Fazenda Ludmila	The data for July 2004 for sows is wrong; the right number is 244;
Fazenda Santa Lucia	The finisher data for November 2004 is wrong. The right number is (instead of 3.463) 2.463 animals.
Fazenda Sao Joao	The calculation is based on groups (“lotes”) and is for the most numbers wrong. The assessment unit of AgCert has already admitted the error. Besides the mortality rate has to be considered. The fazenda will probably soon change to the usual stock system.
Fazenda Uniao Sitio II	The number for finisher for August 2004 is wrong. The right number is 3.401 animals
Fazenda Mourao	The following data are wrong: -all data of gilts -some quite big differences in finisher data 10/2004 and 07/2005

	-small differences in data of sows and nursery which can be neglected.

Response: The animal quantities have been adjusted in the PDD by AgCert:

Corrective Action Request 5:

The four farms Confusao – Dois Irmaos, Estreito e Ponte de Pedras, Rioverdinho da Barra Grande and Rioverdinho da Barra Grande – Sitio 2 are mentioned twice in the PDD-calculations. AgCert has to check, wether there is a doublecounting.

Response: The sites are mentioned twice due to these being separate sites with the same names. They are under different ownership. Legal entity names have been added to help identify the sites.

3.2.3 Conclusion

Following the interpretation of the project developer in project BR 05-06 and according to the lack of specification of manure in applied methodology that issue is considered to be resolved. The requests have been resolved and the project does comply with the requirements. Further details are documented in annex 1 of the validation report.

3.3 Monitoring Plan

3.3.1 Discussion

The project is based on an approved monitoring methodology. The methodology has been approved by the CDM Executive Board at its 16th meeting in October 2004.

The selected methodology has been designed for this project and hence the project is part of the methodology it is build upon. Therefore the respective monitoring methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the monitoring methodology.

Details of the methodology as parameters to be obtained, recording frequency and archiving methods are considered being reasonable and appropriate.

The methodology and its application is described in detail and in a transparent manner. It is made clear that option “a) determination of GHG emissions using IPCC default parameters” has been chosen. During the visit on site the implementation of the operations and maintenance manual and the data management system in order to ensure a proper implementation of the monitoring plan could be evidenced.

The monitoring plan does include all relevant parameters to determine baseline and project emissions and it is possible to monitor and/or measure the currently specified GHG indicators. The indicators which are not measured can be obtained from IPCC documents. The parameters defined allow calculating the baseline and projecting emissions in a proper manner.

The monitoring plan does include all relevant parameters to determine leakage emissions. In general, leakage emissions in the proposed project activity type depend on practice changes imposed and do not apply to all projects carried out under the respective methodology. In the project assessed herewith leakage emissions are expected not to occur. In order to ensure a conservative approach respective parameters (electrical power use) are nevertheless included in the monitoring plan. Other potential leakage effects have been evaluated and it has been demonstrated that these effects do not apply to this specific project.

The project is considered to have no negative environmental, social and economic effects and a monitoring of such data is also not required by the applied monitoring methodology. This approach is deemed sufficient.

The PDD in combination with the Operations and Maintenance Manual does clearly indicate the authority and responsibilities within the given project structure. During the visit on site it has been described in detail how the respective organizational structure is already implemented and/ or planned. During the visit on site the validation team moreover realized that the project owner is well aware of the tasks and responsibilities.

The overall management responsibility is with AgCert International, Ireland. The company operates also trained staff in Brazil. The farm owner or representatives supports the AgCert staff during the on site audits and carries out the daily supervision of the project components and their performance. The responsibilities for each task are clearly defined and allocated to the Farm owners, AgCert and the service providers.

The quality and environmental management system (QMS and EMS), currently under implementation within AgCert, will help to support the project participants in operating the respective organizational structure.

3.3.2 Findings

None

3.3.3 Conclusion

The QA/QC manual for all involved staff is sufficiently. The validation team accept that according to AM0016 not all parameters are necessary to estimate the baseline emissions. However, it should be noticed that most of the other parameters can be used for demonstrating the plausibility of measured data.

The QA/QC manual for all involved staff and their responsibility regarding monitoring is ruled sufficiently. Signed contracts are submitted to the validation team.

The validation team can not identify any risks due to inadequate management structure or quality assurance.

3.4 Calculation of GHG Emissions

3.4.1 Discussion

The project spatial boundaries are clearly described and limited to the farm site. An exact and correct description of the project boundaries is included in chapter B.4 of the PDD. The PDD hereby also reflects correctly that emissions from barn systems and barn flushing systems are not considered as these emissions are not affected by the proposed practice change.

The projects components are clearly defined in the PDD and described in figure B1 of the PDD. During the visit on site the given information has been confirmed.

Details of direct and indirect emissions are discussed in the PDD in an appropriate manner. All aspects are covered by the current approach. Methane (CH_4), nitrous oxide (N_2O) and carbon dioxide (CO_2) emissions have been considered.

The calculations resulting in the final numbers have been submitted. The formulae used are correctly applied.

Since most estimates are derived from accepted international sources, it seems reasonable to assume that they are accurate. The approach is deemed sufficient.

Leakage emissions from increased electrical power consumption have been identified as being theoretically a source of leakage. But in the project leakage emissions are expected not to occur. In order to ensure a conservative approach the respective parameters are nevertheless calculated resulting in a positive leakage effect. The emission factor is hereby derived from one of the options mentioned in the methodology, but is not specifically addressed to the project site. The positive leakage effect is in accordance with the methodology not taken into account.

Concluding it can be stated that the project emissions will be reduced compared to the baseline scenario by 1,242,181 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 124,218 tonnes CO_2 over a crediting period of ten years.

3.4.2 Findings

Corrective Action Request 6 (in reference CAR 3 and CAR 5:

The calculation of the emission reduction has to be adjusted according to the new population data.

Response: The emission reductions have been recalculated.

3.4.3 Conclusion

The findings of the validation team have been incorporated into the PDD. The calculation of GHG emissions and used data are according to applied methodology and its requirements.

3.5 Environmental Impacts

3.5.1 Discussion

The environmental impacts can be seen as being low. These low impacts have been sufficiently described in the PDD.

The legislation does not require an EIA for this type of project. But an environmental license for the site is necessary. This requirement for approval has been fulfilled.

Negative environmental effects are not expected to be created by the project. Given the nature of the project design this seems to be reasonable.

Transboundary effects are not expected as the project site is far from the national boundary.

As no significant environmental impacts are expected, such impacts have not influenced the project design.

3.5.2 Findings

Corrective Action Request 2 :

The farm “Granja Lagoa” could neither present an environmental licence nor a protocol for a request of an environmental licence. It has to be submitted either a valid environmental licence or a protocol for the request of an environmental licence to the validation team.

Response: The environmental licence for Granja Lagoa has been submitted by AgCert.

3.5.3 Conclusion

The project does comply with the environmental requirements.

3.6 Comments by Local Stakeholders

3.6.1 Discussion

A formal consultation process with local stakeholders has taken place and corresponding information has been submitted to the audit team. The stakeholders consulted included people from the local community and also the representatives of the local communities and the State of Minas Gerais and São Paulo. In addition neighbours to the site have been interviewed.

The stakeholders have been invited to meetings via post and electronic mail and which has also been published in local and regional newspapers.

No stakeholder process is required according to national legislation.

The comments to the project design have been recorded and provided. As all comments have been positive, the project design has not been changed due to stakeholder comments.

3.6.2 Findings

None

3.6.3 Conclusion

The Comments of the stakeholders were without exception positive. The project does comply with the requirements.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on its website from October 05 to November 05 2005 and invited comments within 30 days, by Parties, stakeholders and non-governmental organizations.

Published on:
http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1358&Ebene1_ID=26&Ebene2_ID=346&mode=1

During the commenting period there have been no comments received.

5 VALIDATION OPINION

The Certification Body ”Climate and Energy” has been ordered by AgCert International LLC, Ireland (AgCert International) to perform a validation of the above mentioned project.

In summary, it is TÜV SÜD´s opinion that the project “AWMS GHG Mitigation Project BR05-B–13 in the states of Minas Gerais and Goiás, Brazil”, as described in the revised project design document of October 2005, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology AM0016 / Ver. 02 entitled “*Greenhouse gas mitigation from improved Animal Waste Management Systems in confined animal feeding operations*.”

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

Prior to the submission of this validation report to the CDM Executive Board, TÜV SÜD will have to receive the written approval of the DNA of involved parties, including confirmation by the DNA of Brazil that the project assists in achieving sustainable development.

By avoiding GHG emissions from open air lagoons, the project results in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An economic comparison with alternative scenarios and an analysis of the investment and technological barriers 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.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 1,242,181 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 124,218 tonnes CO_2 represents a reasonable estimation using the assumptions given by the project documents.

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, 2006-03-20

Michael Rumberg

Deputy head certification body “climate and energy“

Munich, 2006-03-20

Markus Knödlseder

Project Manager

Annex 1: Validation Protocol

Annex 2: Information Reference List