Validation Report

BK Energia Itacoatiara Ltda.

Validation of the
"BK Energia Itacoatiara Project", Brazil

Report No. 629709

2005, Jun. 29

TÜV Industrie Service GmbH – TÜV SÜD Group
Carbon Management Service
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Subject:	Validation of a CDM SSC Project
Executing Operational Unit:	TÜV Industrie Service GmbH – TÜV SÜD Group Carbon Management Service Westendstr. 199 - 80686 Munich - GERMANY
Client:	BK Energia Itacoatira Ltda Rodovia Torquato Tapajós, km 227 / Caixa Postal 39 69100-000 Itacoatiara Amazonas Brazil
Contract approved by:	Werner Betzenbichler
Report Title:	Validation of the "BK Energia Itacoatiara Project", Brazil
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Summary:

The Certification Body "Climate and Energy" has been ordered by BK Energia Itacoatira Ltda to validate the above mentioned project.

The validation of this project has been performed by document reviews, interviews by e-mail and on-site inspection, audits at the locations of the projects and interviews at the involved ministry.

The need for corrective action request (CAR) and clarification requests (CR) is described in the report and the attached validation protocol.

As the result of this procedure, it can not be confirmed that the submitted Project Design Document is in line with the requirements set by the Marrakech Accords and the Kyoto Protocol. The outstanding issue why the project can not be confirmed is due to missing letter of approval from the designated national authority.

Additionally the validation team assessed the estimation of the projected emission reductions.

Additionally the assessment team reviewed the estimation of the projected emission reductions, which amount 1,167,926 t CO_{2e} over a crediting period of seven years, resulting in a calculated annual average of 166,846.5 tonnes CO_{2e} that represents a reasonable estimation using the assumptions given by the project documents.

Work carried out by:	Markus Knödlseder (Project manager, GHG auditor) Klaus Nürnberger(GHG auditor) Johannes Thaler (Local expert, GHG auditor)	**Internal Quality Control by**: Michael Rumberg

Abbreviations

AOE	Applicant Operational Entity
CAR	Corrective action request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification request
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change
VP	Validation Protocol
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

BK Energia Itacoatira Ltda has commissioned TÜV Industrie Service GmbH – TÜV SÜD Group (TÜV SÜD) to validate the BK Energia Itacoatiara Project.

The validation service is design verification and a requirement of all CDM projects. The purpose of a validation is to have an independent third party assessment 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 a draft PDD April 2005. 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 2005 serves as the basis for the assessment presented herewith. In May 2005 a revised final PDD has been submitted in which next to responses to the issued CAR/CRs the project participants have been changed. All changes aim at a clarification of open issues and have resulted in substantiating the arguments given in the final version of the PDD. The changes are not considered to be significant with respect to the qualification of the project as a CDM project - as they rather have helped to clarify single aspects. Hence no repetition of the public stakeholder process has taken place.

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
- Technical aspects of hydro power plants and grid 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 Knödlseder: After his professional training as chemical assistance Mr. Knödlseder studied environmental engineer at the University of Applied Science in Bingen, Germany. Beside his main focus in studies of environmental technologies, he dealt with environmental management and environmental controlling issues. He has been a staff at the department "Carbon Management Service" located in the head office of TÜV Industrie Service GmbH, TÜV SÜD Group in Munich since Oct. 2001. He has been involved in the topic of environmental auditing, baselining, monitoring and verification due to the requirements of the Kyoto Protocol with special focus on renewable energies. Mr. Knödlseder is also an auditor for environmental management systems (ISO 14.000).

Klaus Nürnberger is head of the division energy certification at TÜV Industrie Service GmbH TÜV SÜD Group. In his position he is responsible for the implementation of verification and certifications processes for electricity production based on renewable sources. The division has assessed more than 600 plants and sites all over Europe. He has received extensive training in the CDM and JI validation processes and participated already in several CDM and JI project assessments.

Thaler Johannes 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. Due to his emigration to Brazil he has been working for TÜV SÜD as a GHG auditor as a free lancer since March 2005.

The audit team covers the above mentioned requirements as follows:

- Knowledge of Kyoto Protocol and the Marrakech Accords (KNÖDSLEDER/NÜRNBERGER)
- Environmental and Social Impact Assessment (KNÖDSLEDER/NÜRNBERGER)
- Skills in environmental auditing (ALL)
- Quality assurance (KNÖDSLEDER/NÜRNBERGER)
- Energy generation technologies (NÜRNBERGER, KNÖDLSEDER)
- Methane Avoidance (NÜRNBERGER)
- Technical aspects of methane avoidance, methane generation in disposals and grid operation (KNÖDSLEDER/NÜRNBERGER)
- Monitoring concepts (ALL)
- Political, economical and technical random conditions in host country (THALER/KNÖDLSEDER)

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":

- Werner Betzenbichler (head certification body "climate and energy")

1.3 GHG Project Description

The project consists in the generation of electricity with a thermoelectric power plant using wood residues from an FSC* certified forest management and wood processing company in the city of Itacoatiara, in the State of Amazonas, Brazil.

The project was planned by and is belonging to BK Energia Itacoatiara Ltda., a Brazilian Consortium consisting of two companies; Koblitz Ltda. and Brennand Group. The power plant started its operation at the end of 2002 on the site of the Mil Madeireira Itacoatiara Ltda. wood processing plant, which guarantees the supply of wood residues.

The project is operated by BK Energia Itacoatiara Ltda. that is a special purpose company set up to use residues from the FSC-certified operations of the wood processing company Mil Madeireira Itacoatiara Ltda., in the city of Itacoatiara, State of Amazonas, north of Brazil. BK Energia Itacoatiara Ltda..

The power plant consists of a high pressure boiler (42 bar – 420° C) and a multiple stage condensing steam turbine coupled with a 9 MW_{el} generator with an expected electricity output of around 56,000 MWh (assuming a 71% capacity factor and having deducted approx. 5,000 MWh own consumption). The project replaces diesel generation and covers around 70% of the electricity demand in the city of Itacoatiara.

A second component of the project is thus related to the substantial reductions in methane emissions from the wood waste, which used to be left to decay. Wood residues have come from three different types of sources (sawmill, clearing roads, and landfill).

* The Forest Stewardship Council (FSC) is an international non-profit organization, founded in 1993 to support environmentally appropriate, socially beneficial, and economically viable management of the world's forests.

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 all 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, according to the Validation and Verification Manual (VVM). 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 organises, details and clarifies the requirements a CDM project is expected to meet;

It ensures a transparent validation process where TÜV SÜD has documented 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

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. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	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.	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 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 summarised in this section.	This section should summarise 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

The completed validation protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The PDD and additional background documents related to the project design and baseline were reviewed. Those documents were submitted by the Ecoinvest, Brazil, the consultant of BK Energia Itacoatiara Ltda.

2.2 Follow-up Interviews

On May 27, 2005 TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of EcoInvest, BK Energia Itacoatiara Ltda. and affiliated companies were interviewed. The main topics of the interviews are summarised in Table 1. The complete and detailed list of all persons interviewed is enclosed in Appendix B to this report. Further information received by following telephone conferences and by e-mail.

Table 1 Interview topics

Interviewed organisation	**Interview topics**
EcoInvest, BK Energia Itacoatiara Ltda. and affiliated companies	Project design, Baseline, Monitoring Plan, Environmental Impacts, Stakeholder Comments
Precious Woods Brazil	Sustainable forest management, FSC-Certificate, Wood supply
Companhia Energética do Amazonas (CEAM) - the local power utility	Local energy generation in the past and with the project.

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 final project design document 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 fulfilment 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 two Corrective Action Request and five 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 are summarised.

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 claims two tracks of emission reductions. One source is the substitution of electricity generated by diesel and the second the avoidance of methane from decayed biomass. In spite of that combination the project is within the characteristics of the simplified modalities and procedures for small-scale CDM project activities.

Following approved methodologies are applied:

Type I.D Renewable electricity generation for a grid

Type III.E Avoidance of methane production from biomass decay through controlled combustion

As the project claims two tracks for generating CERs both sources have to analysed according to the characteristics of the simplified modalities and procedures for small-scale CDM project activities, which are:

- Ü *Type (i) project activities: renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts (or an appropriate equivalent) (decision 17/CP.7, paragraph 6 (c) (i))*

- Ü *Type (iii) project activities: other project activities that both reduce anthropogenic emissions by sources and directly emit less than 15 kilotonnes of carbon dioxide equivalent annually (decision 17/CP.7, paragraph 6 (c) (iii)):*

The project itself does qualify as a small scale project as it fulfils the requirements defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM.

Similar to above characteristics the project boundaries have to be defined for each claimed project type. According to the applied and approved methodologies they are:

Type I.D The project boundary encompasses the physical, geographical site of the renewable generation source.

Type III.E The project boundary is the physical, geographical site where the treatment of biomass takes place.

The project boundary for type I.D is well defined and clearly applicable to the project. The methodology for project type III.E allows interpretation in its wording.

The wording of "the place where the treatment of biomass takes place" is interpretive. It is not clear if the place of treatment includes only the controlled combustion or the wood processing. In the submitted project sawmill of Mil Madeireira Itacoatiara Ltda. is delivering the wood waste from its wood processes, from its forest directly and from its old disposals. A wide interpretation could include all wood processing and also the old disposal.

Due to the rejection of the project Olavarría Landfill Gas Recovery Project in the 19th EB meeting (http://cdm.unfccc.int/EB/Meetings/019/eb19repan13.pdf) and according to the applied methodology (AMS-III.E.) t he validation team interprets the project boundary at first in a conservative manner. The methodology states: "The boundary is the physical, geographical site where the treatment of biomass takes place." In a conservative manner the treatment of biomass in the submitted project starts in sawmill where the wood waste is produced. There has been extensive discussion whether the project qualifies as SSC project.

The validation team follows the interpretation of the project developer. That opinion is additionally reasoned by the fact that the methodology does not consider any emissions from a potentially included disposal. Also, an exclusion of the old disposals from the project boundary is fleshed out by the fact that the complete wood processing is not under the control of the project owner; the project owner can just control the wood waste which is prepared for combustion in his stocks.

The project design engineering does reflect current good practices. BK Energia Itacoatiara Ltda., and its affiliated companies Koblitz Ltda. and Brennand Group have a substantial track record in the field of renewable energy engineering, management and maintenance. The project is professionally managed and the applied technology represents state of the art technique. A transfer of technology takes place into the Amazons region. Most of the installed equipment is produced in Brazil. All installed and relevant equipments are listed in the final PDD.

In order to implement the project successfully and to operate the power plant as presumed during the project period, the staffs need extensive initial training and maintenance efforts. An appropriate maintenance and management system was installed that ensures the further operation of the project.

The project has to obtain different permissions and licences for operation. The relevant documentation is described in the PDD and the corresponding documents have been submitted to TÜV SÜD. Additional the legal situation of the wood supplier and its sustainable wood management was validated by TÜV SÜD.

From a sustainable development perspective the project has to be seen positive. It created employment opportunities during the construction phase of the project and in addition during the operation and maintenance phase of the project. Almost 80% of the employees are expected to be from the local and regional area. As described in the PDD, the project completes the approach of Precious Woods using the tropic wood in a sustainable and environmental friendly manner in order to generate green electricity for the region.

The project's starting date is defined in the PDD as the date of starting operation in 2002. Project idea and the start of financial planning were done during the year of 2000; the engineering and construction had started in the beginning of 2002. Hence, the chosen starting date defined as start of operation is comprehensible.

The crediting period is clearly defined.

3.1.2 Findings

During the document review and the on site visit following Corrective Action Requests (CARs) were identified.

Corrective action request No. 1:

At the time when the validation team came to its final opinion about the submitted project a written letter of approval from the designated national authority was not available.

In order to assess whether a project is small scale or not the project activity emissions are relevant.

Clarification Request No. 1:

The project developer shall describe how the amount of 7987 tCO2e is calculated. It has to be demonstrated that the project emissions will be not more than 15000 tCO2e per year.

Response:

The project developer provided reliable information by the revised PDD.

The technical principle is mentioned, but not sufficiently.

Clarification Request No. 2:

Due to that the project is already installed, the specific components and measurement equipment has to be listed in detail, as information is already available on site.

Response:

All information on installed equipment is submitted correctly in the final PDD.

3.1.3 Conclusion

The project boundary is clear; no findings regarding the project design are identified. According to the interpretable wordin g of methodology type III.E the validation team follows the project owner's view in defining the project boundary by excluding the old disposals.

Missing information, calculations and installed equipment was completed by the onsite visit and by additional information submitted by Ecoinvest.

Regarding the missing Letter of Approval from the designated national authority the validation team **can not confirm** that the project does fulfil the requirements.

3.2 Baseline and Additionality

3.2.1 Discussion

The project claims two methodologies; first emission reduction against the baseline is the avoidance of methane; the second is the substitution of electricity from other fossil power plant in the grid.

The selected baseline methodologies are eligible for the relevant project categories and are applicable to the project being considered. The application of the baseline methodology and the discussion and determination of the chosen baseline is transparent and conservative.

Concerning the methane avoidance aspect the baseline of the project is the continuation of the old situation which was sawmills operation and disposing the wood waste without any using and energy production.

As mentioned above the project claims CERs from the avoidance of methane. A conservative approach means to consider only wood, which really would emit methane. The biomass power plant gets from different sources wood. One source comes from sawmill being real wood waste from the process, second is wood waste from the old disposals and the third part is wood collected along the roads, which is done by the power plant operator.
The wood waste that comes direct from the wood processing and from the old disposal would emit methane, if it is not burned by the power plant, but the residues coming directly from the forest will not emit methane likely, because the conditions there are not anaerobic enough. Hence, a conservative approach does not account that wood for claiming methane avoidance.

The electricity grid in Itacoatiara is isolated by other power systems. The electricity was mainly feed by Companhia Energética do Amazonas (CEAM) - the local power utility. CEAM delivered about 80% of the demand. The second path for delivering electricity is from a private company which operates an own industrial power plant; however its main purpose is to supply the manufacturing with power. Both are operated by diesel. After implementation of the project grid of Itacoatiara is fed by BK Energia Itacoatiara Ltda., the manufacturing company and CEAM for peak loads.

A further important step when assessing a baseline approach is to prove that the project itself does not represent the baseline scenario. For demonstrating that, the Executive Board established on its 16th meeting the "Tool for the demonstration and assessment of additionality". The project uses that tool for demonstrating its additionality, although it would not be necessary completely for small scale projects.

The company of Koblitz Ltda. made in 2000 first experiences with CDM by purchasing carbon credits to the Canadian government in the project of Piratini. Since that purchasing Ecoinvest has been ordered to analyse the project activities of Koblitz Ltda. regarding CDM opportunities. The project of Itacoatiara was one of other selected projects which had been developed under the consideration of CDM.
In order to demonstrate the need of CDM the project owner and developer explained the difficulties in the Brazilian finance sector for project financing. The difficulties are reasoned by only less financing options from banks. In order to get loans the evidence of high guarantees is necessary.

3.2.2 Findings

For demonstrating the additionality of the project the project developer uses the Additionalty Tool from the EB.

Clarification request No. 3

The project owner shall provide reliable information in order to prove the serious consideration of CDM (step 0 test).

Response:

The company of Koblitz Ltda. which is affiliated with BK Energia Itacoatiara Ltda. made first very concrete experiences which CDM as described in the PDD (in 2000). This coincides with the time when the project owner decided to invest in that specific project. The serious consideration is also proved by the early engagement of EcoInvest, a specialized CDM consultancy company. As further proof a PIN note has been submitted dated more than half a year before the project has been set into operation. Furthermore the PPs claimed that their decision to apply the additionality test exceeds the requirements for SSC projects.

Clarification request No. 4

Due to missing background calculation and information the determination can not be confirmed as transparent and conservative.

After onsite visit and submitting the calculation the validation team can not confirm the transparency and conservativeness of the baseline. That opinion is reasoned due to the sources of wood residues which are combusted.

Corrective action request No.2:

For calculation the avoided methane the project developer shall consider only the amount wood residues that would emit methane according to applied methodology.
Wood residue that would not be disposed and hence would not emit methane has to be deducted from the total amount.
Combusted wood residues from the old disposals is contaminated with mud and soil which affect the measuring of the biomass; additional old disposed wood has already a certain amount of methane, hence the default factors of the methodology are not sufficient conservative.
If those biomass shall be accounted for generation of emission reduction from specific and evidences factors has to be used.

Response:

The old PDD accounts all wood residues for accounting of emission reductions.

The PDD performed on 27.06.2005 deduct the amount of fresh wood from the road clearing. The wood residues from the disposals will be monitored regarding its biomass content which emits methane.

Corrective action request No. 3:

The crediting period is defined but not consistent. In submitted PDDs there is an inconsistency regarding starting of crediting period (1/11/2002), crediting lifetime (7y-0m) and the calculation of prospective emission reduction in the first crediting period. The inconsistency is reasoned by the fact that the end of the first crediting period will be on 31.10.2009 and not 31.12.2008 like in the calculation.

Response:

The crediting period and the calculated prospective emission reductions are stated in the revised PDD from 27 Jun. 2005 from 1-11-2002 to 31-10-2009.

3.2.3 Conclusion

As a conclusion the validation team confirms that the project does fulfil the requirements.

3.3 Monitoring Plan

3.3.1 Discussion

As the project claims two sources for emission reductions and two methodologies in respective, the monitoring plan has to consider these both aspects.

According to methodology type III.E the significant key parameter is the amount of treated biomass. That value determines the baseline emissions and the project activity emissions. Apart from the energy content of the biomass, all other parameters can be taken from literature.

Leakages do not have to be monitored according to methodology type III.E.

However, regarding the treated biomass one aspect has to be considered in the monitoring plan in the submitted project. As already described above the power plant gets different kind of wood residues, but according to the methane avoidance approach of methodology type III.E only that wood can be accounted which would emit methane. Wood that comes direct from the forest has to be subtracted from the total combusted wood. Wood residues from the disposal has to be analysed according to its content, hence that mass can be contaminated with soil or already dissimilated biomass.

In isolated grids methodology type I.D considers only the amount of electricity that was produced and fed into the grid.

3.3.2 Findings

Clarification request no 5:

The authority and responsibility of project management have to be clearly described in the PDD.

Response:

Information about responsibility of project management was submitted to the validation team: "*Credit owner and project operator is the special purpose company Precious Wood Energia Itacoatiara; is author and the responsible for all activities related to the project management, registration, monitoring, and measurement and reporting.*

Statement of the project developer:

In accordance with the approved methodology the PDD lists two data to be monitored:

- *Electricity quantity: The project owner measures with an electronic supervisory system the amount of total electricity generation, electricity exported to the grid, and electricity consumed by the project.*

  There is a meter that informs the supervisory system, this meter is periodically calibrated. The system keeps historical data that can be accessed when necessary.

  Double check is done with the receipt of sales issued by CEAM, the local electricity utility, in the case of exported electricity.

Therefore, BK Energia Itacoatiara is the main responsible for generating, monitoring, measuring and reporting data regarding electricity exportation to the grid.

Fuel quantity: The project owner monitors wood residues that are burned to generate electricity. The measurement is made at two stationary points: The first one is the total of biomass fed into the boiler. This data is obtained through a load cell that sends the information to the supervisory system. This historical data also can be obtained accessing the system. The second is a scale used to quantify wood residues entering the site. This measurement is made manually in the field using a periodically calibrated a mechanical scale. Every day this information is electronically store into a spreadsheet.

Clarification request no 7:

The procedures for dealing with possible monitoring data adjustments and uncertainties have to be clearly described in the PDD.

Response:

All monitored data are measured twice with different equipments (meters or scales). If any small divergence is found, both equipments are re-calibrated. The numbers that lead to the smallest electricity generation and methane avoidance will be used if the uncertainty is not considered significant (less than 1% difference). The electricity generation and methane avoidance will not be accounted for GHG emission reductions if the uncertainty is considered significant.

Clarification request no 8:

The procedures for corrective actions have to be clearly described in the PDD.

Response:

The project owners could not identify any necessity of procedures for corrective actions related to the project management planning.

3.3.3 Conclusion

The validation team follows that point of view generally; a need for corrective actions regarding project managing planning can be identified if additional equipment is needed which have not been planed yet. Such changes are obvious and need no special procedures.

The validation team confirms that the monitoring plan is according to the requirements.

3.4 Calculation of GHG Emissions

3.4.1 Discussion

The calculation of emission reductions is mainly depending on the baseline, potential leakages, the monitoring and the parameter of both. For both applied methodologies the issues of baseline and project activity parameters are discussed sufficiently in above chapters. Leakages are not identifiable.

3.4.2 Findings

No conclusion findings after revision of the PDD.

3.4.3 Conclusion

The projects calculation does fulfil the requirements.

3.5 Environmental Impacts

3.5.1 Discussion

One requirement of the Marrakech Accords is the consideration of environmental impacts within a CDM project. Optional positive impacts can be mentioned in the PDD, but obvious negative environmental impacts should be described in the PDD. These impacts should be described also, if those impacts are assessed and confirmed by responsible local authorities. For such small projects the host country legislation requires not an EIA but a report about impacts that was performed.

3.5.2 Findings

Corrective action request no 3:

Identifiable environmental impacts shall be mentioned in the PDD, even if they are allowed and in line with national law.

> Response:
>
> Potential environmental impacts identified were related to particulate matter emissions and wastewater management.
>
> A multi-cyclone was installed to reduce particulate matter emissions, which are periodically monitored to assure compliance with the required environmental standards.
>
> There is wastewater treatment facility inside the plant. Effluents are periodically monitored to assure compliance with the required environmental standards.

3.5.3 Conclusion

The project is in line with national and regional law. Additional information about environmental impacts and measurements against are described in the final submitted PDD. The validation team agrees with stated impacts and confirms that the project fulfil all requirements.

3.6 Comments by Local Stakeholders

3.6.1 Discussion

A local stakeholder process was done according to Brazilian requirements and additional through local articles in local newspaper. Follwing were invited

1. Itacoatiara´s City hall
2. IPAAM Instituto de Proteção Ambiental do Estado do Amazonas
3. Itacoatiara´s Secretary of the environment
4. Greenpeace Brazil
5. WWF-Brazil

6. Fórum Brasileiro de ONGs e Movimentos Sociais para o Meio Ambiente e o Desenvolvimento (the association of all NGOs in Brazil)
7. Itacoatiara´s City council
8. State attorney of the state

3.6.2 Findings

No findings identifiable.

3.6.3 Conclusion

The validation team confirms that the project fulfil all requirements.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project document on its website on May 4, 2005 and invited comments within Jun 3, 2005 by Parties, stakeholders and UNFCCC accredited non-governmental organisations. The PDD and the comment is publicly available under the following link: http://www.netinform.de/KE/files/pdf/Ecoinvest-PWE_Itacoatiara_CDM_SSC.pdf .

The project and the published PDD states clearly and correct the applied methodologies which are type I.D. and III.E. The UNFCCC webpage stated however that methodology of type I.D. and III.D are applied, which is wrong stated.

As the really applied methodologies are mentioned correctly in the PDD; additional that confusion does not affect the assessment of the project and hence the commenting of the project, that confusion is a minor issue

4.1 Content of the comments received

No comments received.

4.2 Response by TÜV SÜD

No response by TÜV SÜD.

5 VALIDATION OPINION

TÜV SÜD has performed a validation of the BK Energia Itacoatiara Project, Brazil. The validation was performed on the basis of UNFCCC criteria as well as criteria given to provide for consistent project operations, monitoring and reporting.

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 **not** all relevant UNFCCC requirements for the CDM as far as the letter of approval from the designated national authority is still missing. Hence, the project will not be recommended by TÜV SÜD for registration by the CDM Executive Board.

That validation opinion is the concluded and final result of the project assessment performed by the validation team and discussed in that validation report. Nevertheless the validation can not be finished by the DOE as far as the final confirmation by the host Party is missing. If the designated national authority will agree with and confirm the project, the validation can be seen as concluded from the point of view of the validator under perpetuation of the results stated in that report.

Lacks in the documentation of the quality managements system are acceptable for the validation team. As all involved participants and staff are high professional and monitored parameters are necessary or other purposes, the validation sees no significant risk for projects success.

Additionally the assessment team reviewed the estimation of the projected emission reductions, which amount 1,167,926 CO_{2e} over a crediting period of seven years, resulting in a calculated annual average of 166,846.5 tonnes CO_{2e}, that 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, 2005-07-26

Werner Betzenbichler

Head of certification body "climate and energy"

Munich, 2005-07-26

Markus Knödlseder

Project Manager

Appendix A: Validation Protocol

Appendix B: Information Reference List

Appendix C: Stakeholder Comments

No comments received.