Determination Report

Determination of the Paper Factory Stambolijski JI-Project

BULGARIA

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TÜV Industrie Service GmbH TÜV SÜD Group
Carbon Management Service
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Client:	Paper Factory Stambolijski EAD 1, Zavodska Street – 4210 Stambolijski - Bulgaria
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Summary:

The Certification Body ”Climate and Energy” of TÜV Industrie Service GmbH TÜV SÜD Group, has been ordered by PFS in Stambolijski to determine the above mentioned project.

The determination of this project has been performed by document reviews, interviews by e-mail and on-site inspections, audits at the locations of the project and interviews at the offices of the client.

As the result of this procedure, it can be confirmed that the submitted project documentation is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol. This report indicates two remaining issues which should be taken into account during the first or initial verification and which do not impact the validation opinion in the context of the eligibility of this project for registration.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amounts of emission reductions of 99,283 CO_{2e} in the first phase (years 2006 and 2007) of the intended over-all crediting period from 2006 – 2012 and of 613,402 tons CO_{2e} (to be issued as ERUs) in the second phase represent a realistic estimation using the assumptions given by the project documents.

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Abbreviations

CAR	Corrective action request
CR	Clarification request
DOE	Designated Operational Entity
DP	Determination Protocol
EBRD	European Bank for Reconstruction and Development
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
ERU	Emission Reduction Unit
GHG	Greenhouse gas(es)
JI	Joint Implementation
KP	Kyoto Protocol
MP	Monitoring Plan
MS	Management System
PFS	Paper Factory Stambolijski
PDD	Project Design Document
PM	Paper Machine
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

The Bulgarian company “Paper Factory Stambolijski EAD” in Stambolijski has commissioned TÜV Industrie Service GmbH TÜV SÜD Group, Carbon Management Service, to conduct a determination of the “PFS Joint Implementation Project” with regard to the relevant requirements for JI project activities. The determination serves as a conformity test of the project design and is a requirement for all JI projects. 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. Determination is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions (in particular ERUs - in the first commitment period under the Kyoto Protocol).

UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document (PDD), 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 determination, focusing on the identification of significant risks for project implementation and the generation of emission reductions

1.3 GHG Project Description

The project foresees the installation of ten energy efficiency measures in the paper factory in Stambolijski. It comprises the following emission reduction paths:

- Boiler System: The installation a biomass boiler will reduce the demand on fossil fuel and therefore it will reduce CO_2 emissions. Furthermore the avoidance of biomass waste will lead to a reduction of CH_4 emissions
- Dumping Area: The combustion of already dumped biomass reduces the potential for methane emissions.
- Steam Condensate of Drying Section at PM1: A reduction of steam losses will lead to a lowered energy demand and therefore a lowered demand on fossil fuels.
- Condensate Tanks of Flash Steam: A further example for the reduction of steam losses.
- Space Heating Systems: A more efficient heating system based on hot water instead of steam will reduce energy consumption.

- Soot Blowers: State of the art soot blowers are expected to reduce to need of additional cleaning cycles and therefore the demand on steam.
- Fine Screening of unbleached Kraft Pulp: A reconstruction of the fine screening utility will reduce electricity consumption. Electricity is provided by the national grid.
- Blow Heat Recovery System: This system will save heat otherwise wasted, and therefore it will reduce the demand on fossil fuels.
- Electrostatic Precipitator in Soda: Installing a new flue gas clarification system will enhance the efficiency of the soda recover boiler. Thus, there will be a lower demand on mazut and black liquor to operate the recovery boiler.
- Black Liquor Concentrator: An improvement in the dry mass content of black liquor will enhance its energy content and will reduce the demand for co-firing other fossil fuels in several utilities.

The project is foreseen to start with first measures in late 2004. All measures will be implemented until December 2006.

The project documentation has been developed by CAMCO International in Vienna.

2 METHODOLOGY

In order to ensure transparency, a determination 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 determination protocol serves the following purposes:

- It organises, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent determination process where TÜV SÜD has documented how a particular requirement has been validated and the result of the determination.

The determination protocol consists for this project of three tables. The different columns in these tables are described in Figure 1.

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

Determination 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 determination report. **O** is used in case of an outstanding, currently not solvable issue, **AI** means Additional Information is required.*	*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 determination process.*

Determination 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 six 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** or **Additional Information** is used when the independent entity has identified a need for further clarification or more information.*

Determination Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action and additional Information requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Determination conclusion***
If the conclusions from the draft determination are either a Corrective Action Request or a Clarification or Additional Information Request, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification or Additional Information Request is explained.*	*The responses given by the Client or other project participants during the communications with the independent entity should be summarised in this section.*	*This section should summarise the independent entity’s responses and final conclusions. The conclusions should also be included in Table 2, under “Final Conclusion”.*

2.1 Review of Documents

The project participants submitted a PDD and additional background documents related to the project design and baseline. A review for all these documents has been performed in order to identify all issues for discussion during the follow-up interviews on-site and by phone or email.

2.2 Follow-up Interviews

In the period between October 20th, 2004 and October 21st, 2004 TÜV SÜD performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the Bulgarian company PFS (project owner), representatives of the municipality and representatives of CAMCO International as project developers have been 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 2 to this report.

Table 1: Interview topics

Interviewed organisation	Interview topics
PFS	Project design, baseline, monitoring plan, environmental impacts, stakeholder comments, additionality, monitoring procedures, calibration of the measurement equipment, documentation, archiving of data
CAMCO International	Project design, baseline, monitoring plan, environmental impacts, stakeholder comments, additionality
Municipality of Stambolijski	Approval of the project; environmental impacts, stakeholder comments

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified in order to achieve a positive conclusion during the assessment process. Corrective Action Requests raised by TÜV SÜD have been resolved by the revision of the PDD submitted November 5th, 2004. Furthermore additional documents have been submitted separately in order to provide the required evidences. To guarantee the transparency of the determination process, the concerns raised and the responses given are summarised in chapter 3 below. The whole process is documented in more detail in the final determination protocol in Annex 1.

3 DETERMINATION FINDINGS

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

1) The findings from the desk review of the original 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 Determination Protocol in Annex 1.
2) Where TÜV SÜD has identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Annex 1.
3) Where Clarification and Corrective Action Requests have been issued, the response by the project participants to resolve these requests is summarized in the final determination report.
4) The conclusions of the determination are presented consecutively.

3.1 Project Design

3.1.1 Findings

The submitted PDD as well as its revision are considered to be of an excellent quality and do completely include all aspects required by the underlying regulations.

The foreseen technology does reflect current good practice within the paper industry. It is, moreover, not likely that the project technology will be substituted by a more efficient technology.

The project starting date is clearly defined as well as the crediting period which will cover the years 2006-2012, separated in two phases, a first phase from 2006 to 2007 (before Kyoto

budget period) and a second phase from 2008 to 2012 in accordance with the first commitment period (generation of ERUs).

Under normal conditions the operational lifetime of the project will exceed this indicated time frame.

3.1.2 Issued CARs/CRs

Outstanding issue:

It is envisaged that the project has to be approved by both countries (Bulgaria and The Netherlands) at the end of the validation process. This has been confirmed by the Bulgarian National Focal Point. A written letter of approval was not available at the time of this determination. This evaluation is beyond the time schedule of this validation. The issuance of ERUs will be done under the “First Track JI”- regime. Therefore, there is no requirement to provide the validator such a LoA in order to forward it to the Supervisory Committee.

3.1.3 Conclusion

The project fulfils the belonging criteria set for the approval of JI-projects.

3.2 Baseline

The baseline of the Bulgarian “PFS Joint Implementation Project” is established in a project-specific manner. The emission reductions are multi-fold:

- Reductions by avoidance of the release of methane
- Replacement of energy generation by the Hungarian grid
- Reductions of fossil fuel demand by energy efficiency improvements
- Replacement of fossil fuel by biomass

The additionality of the project is proved by analysing different key factors. Evidence has been provided by the management, that the decision for starting the project is linked to the approval as JI project.

3.2.1 Findings

Additionality:

The on-site assessment has given a special focus on the figures of costs and the decision making process within the management. It is clearly demonstrated that the project in total is additional compared to the presented baseline scenario.

Baseline Reliability:

For all measures the continuation of the existing operation is technically, legally and economically feasible. There is no requirement for any changes in each of the ten sub projects.

3.2.2 Issued CARs/CRs

Corrective Action Request No. 1 (CAR 1):

The calculation of energy demand for the fine screening installation is based on installed capacity instead of actual energy consumption of each motor. The calculation of the energy consumption of the fine screening utility has to include a realistic load factor for the electric motors in a revised PDD.

Response:

The submitted revised PDD reflects this requirement by introducing such an approach. This issue is deemed to be resolved.

Clarification Request No. 1 (CR 1):

The calculation of the steam demand to be used by the soot blowers is based on assumptions concerning time demand for each blow cycle and numbers of blowers in operation which could not be verified at the time of the on-site visit during that validation.

The real time for each blow cycle and the number of blowers in operation should be investigated and documented in a transparent manner before replacing these devices. This data should be incorporated in the monitoring spread sheet and should be submitted to the verifier in the context of the first or initial verification.

Response:

No response required before first or initial verification

3.2.3 Conclusion

The response given to the indicated CAR is resolving the belonging issue.

Concerning CR1 substantiated data should be incorporated in the monitoring spread sheet and should be submitted to the verifier in the context of the first or initial verification. Any expected change will have a minor impact on the emission reduction projection. The postponement of this issue to the next verification is considered not to impact the eligibility of the project for JI registration.

The project fulfils the criteria on baselines as set for the approval of JI-projects.

3.3 Monitoring Plan

3.3.1 Findings

The monitoring methodology does reflect current good practice and is supported by the monitored and recorded data. The monitoring provisions are in line with the project boundaries.

3.3.2 Issued CARs/CRs

Clarification Request No. 2 (CR 2):

There is no quality management system avail-able concerning the monitoring of the project’s performance parameter.

Response:

No response required before first or initial verification

3.3.3 Conclusion

A documentation of all procedures relevant for ensuring the data quality over the time of the crediting period should be elaborated and submitted to the verifier of the first or initial verification. This issue will have no impact on the emission reduction projection but indicates risks concerning the future data quality and data verifiability.

The postponement of this issue to the next verification is considered not to impact the eligibility of the project for JI registration.

The project fulfils the prescribed requirements.

3.4 Calculation of GHG Emissions

3.4.1 Findings

The calculation is based on a spreadsheet, which is described and used by the monitoring plan. All figures and links have been checked. No error has been detected. All input data is derived either from literature or form historic data, which has been verified by an risk-based approach during this assessment.

3.4.2 Issued CARs/CRs

No such requests have been issued.

3.4.3 Conclusion

The project fulfils all the prescribed requirements completely.

3.5 Environmental Impacts

The installation of the biomass boiler is the only measure where environmental impacts can be discussed reasonably. There is no indication so far by the authority whether an EIA for the biomass boiler will be required or not.

3.5.1 Findings

There is rather a considerable improvement in the local environment than negative environmental impacts. The PDD discusses this issue in an appropriate manner. The project complies with the environmental legislation in Bulgaria.

3.5.2 Issued CARs/CRs

Clarification Request No. 3 (CR 3):

In case such a procedure will be required during the ongoing of the project the resulting environmental license shall be submitted to the verifier of the first or initial verification.

Response:

Meanwhile a letter issued by the Ministry of Environment and Water dated October 19th, 2004 has been submitted that clarifies that no EIA is requested by the authority.

3.5.3 Conclusion

The issue has been resolved. Thus, the project fulfils the prescribed requirements.

3.6 Local stakeholder process

3.6.1 Findings

A local stakeholder process has been performed by the project owners, which is documented in a separate attachment to the PDD. The PDD discusses this issue in an appropriate manner. The project complies with the legislation in Bulgaria.

3.6.2 Issued CARs/CRs

No such requests have been issued.

3.6.3 Conclusion

The project fulfils all the prescribed requirements completely.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project design documents on its website for 30 days from October 05th until November 04th, 2004.

No comments have been received.

Industrie Service

5 DETERMINATION OPINION

TÜV SÜD has performed a determination of the "PFS Joint Implementation Project" in Bulgaria. The determination was performed on the basis of relevant JI criteria.

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.

As the result of this procedure, it can be confirmed that the submitted project documentation is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol. This report indicates two remaining issues which should be taken into account during the first or initial verification and which do not impact the validation opinion in the context of the eligibility of this project for registration.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amounts of emission reductions of 99,283 CO_{2e} in the first phase (years 2006 and 2007) of the intended over-all crediting period from 2006 – 2012 and of 613,402 tons CO_{2e} (to be issued as ERUs) in the second phase represent a realistic estimation using the assumptions given by the project documents. As these figures will depend on the future performance of the project, this confirmation gives no guarantee on the realisation.

The determination is based on the information made available to us and the engagement conditions detailed in this report. TÜV SÜD can not guarantee the accuracy or correctness of information that goes beyond the scope of this validation project. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the determination opinion.

Munich, 2004-11-08

Michael Rumberg

Deputy Head of Certification Body "Climate and Energy"

Munich, 2004-11-08

Werner Betzenbichler

Responsible Project Manager

Determination Protocol

Table 1 Mandatory Requirements for Joint Implementation (JI) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
1. The project shall have the approval of the Parties involved	Kyoto Protocol Article 6.1 (a)	This issue remains outside the scope of this validation and will be negotiated by the parties involved.	It is envisaged that the project will be approved by both countries (The Netherlands and Bulgaria) at the end of the validation process.
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur	Kyoto Protocol Article 6.1 (b)	☑	Table 2, Section B.2
3. The sponsor Party shall not aquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7	Kyoto Protocol Article 6.1 (c)	☑	Both countries fulfil the obligations as requested.
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3	Kyoto Protocol Article 6.1 (d)	☑	The project is additional to domestic actions.
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects	Marrakech Accords, JI Modalities, §20	☑	Both Parties have designated national focal points.
6. The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	☑	Verified at UNFCCC website
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts	Marrakech Accords, JI Modalities, §21(b)/24	☑	Third National Communication is available

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords, JI Modalities, §21(d)/24	☑	This issue can not be answered by now as such as the JI system is not installed yet and the Kyoto Protocol has not yet entered into force.
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination	Marrakech Accords, JI Modalities, §31	☑	The original version of the PDD has been submitted in September 2004.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments	Marrakech Accords, JI Modalities, §32	☑	The project has been open for comment from Oct. 05 to Nov. 04, 2004.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out	Marrakech Accords, JI Modalities, §33(d)	☑	Table 2, Section F
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project	Marrakech Accords, JI Modalities, Appendix B	☑	Table 2, Section B.2 Slight corrections are required regarding the emission reduction from the fine screening energy demand and the soot blowers.
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, JI Modalities, Appendix B	☑	Table 2, Section B.2

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, JI Modalities, Appendix B	☑	Table 2, Section B.2
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	☑	Table 2, Section D

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. General Description of Project Activity					
A.1. Project Boundaries					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	1, 3, 4	DR, I	The project's spatial boundaries are clearly described for all different types of emission reduction subprojects.	☑	☑
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	1 - 4	DR, I	Yes, the flowcharts presented in the PDD show in each case a complete description of the project's system.	☑	☑
A.2. Technology to be employed					
A.2.1. Does the project design engineering reflect current good practices?	1, 3, 4	DR, I	Yes, the employed technology does reflect current good practice as it introduces state-of-the-art technology to all sub installations.	☑	☑
A.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1, 3, 4	DR, I	The project uses state of the art technology.	☑	☑
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1, 3, 4	DR, I	It is not likely that the project technology will be substituted by a more efficient technology.	☑	☑
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as	1, 3, 4	DR, I	The personnel within the paper factory will be enabled to maintain the new equipment,	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
presumed during the project period?			which does not require extensive training beyond the existing technical experience.		
A.2.5. Does the project make provisions for meeting training and maintenance needs?	1, 2	DR, I	See comment above.	☑	☑
B. Project Baseline					
B.1. Baseline Methodology					
B.1.1. Is the discussion and selection of the baseline methodology transparent?	1 – 4, 5	DR, I	The project participants could demonstrate convincingly by a multiple key factor test including a sensitivity analysis that the continuation of the recent status is representing the most likely scenario and therefore the baseline. The argumentation by the management that after tremendous investments in the upgrading of the whole factory during the last years there would be no further incentive to invest in the project activities is suitable and transparent. Thus the reluctance on the recent parameter seems to be reasonable.	☑	☑
B.1.1.1 boiler system	1 - 4	DR, I	The discussion includes the consideration of an ongoing energy efficiency potential of 0.5 % per year and the conservative assumption of only using gas to meet that share of the heat demand, which will be replaced by the project scenario.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.1.1.2 dumping area	2	I	The dumping area has been inspected. The dumped biomass is compacted and should have the methane production potential as indicated by the PDD.	☑	☑
B.1.1.3 steam condensate of drying section at PM1	2	I	The continuation of the operation of PM1 under the existing conditions is technically feasible.	☑	☑
B.1.1.4 condensate tanks of flash steam	2	I	The continuation of the operation of this system is technically feasible.	☑	☑
B.1.1.5 space heating systems	2	I	The existing heating system for the production halls represents old technology and it is economically inefficient. Nonetheless there is no technical requirement to replace the system.	☑	☑
B.1.1.6 soot blowers	2	I	The continuation of the operation of this system is technically feasible.	☑	☑
B.1.1.7 fine screening of unbleached kraft pulp	2	I	The continuation of the operation of this system is technically feasible.	☑	☑
B.1.1.8 blow heat recovery system	2	I	The continuation of the operation is technically feasible.	☑	☑
B.1.1.9 electrostatic precipitator in soda recovery	2	I	There is no legal or technical requirement which would hinder the continuation of the operation of this part of the factory.	☑	☑
B.1.1.10 black liquor concentrator	2	I	The continuation of the operation is techni-	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			cally feasible.		
B.1.2. Does the baseline methodology specify data sources and assumptions?	1 - 4	DR, I	Yes, all data used is specified and clearly referenced.	☑	☑
B.1.3. Does the baseline methodology sufficiently describe the underlying rationale for the algorithm/formulae used to determine baseline emissions (e.g. marginal vs. average, etc.)	1 - 4	DR, I	Yes.	☑	☑
B.1.4. Does the baseline methodology specify types of variables used (e.g. fuels used, fuel consumption rates, etc)?	1 - 4	DR, I	Yes, all types of variables for all reduction paths are clearly and completely specified.	☑	☑
B.1.5. Does the baseline methodology specify the spatial level of data (local, regional, national)?	3, 4	DR	All spatial levels are considered to be appropriate.	☑	☑
B.2. Baseline Determination					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	1 - 4	DR, I	The discussion and determination of the chosen baseline is transparent and reflects the situation as required due to altered legislation and the resulting need for changes.	☑	☑
B.2.2. Has the baseline been determined using conservative assumptions where possible?	1 - 4	DR, I	Among the ten different reduction paths there are two aspects, where the baseline has not used conservative assumptions. The calculation of energy demand for the fine screening installation is based on installed capacity instead of actual energy consumption of each motor.	**CAR 1 CR 1**	☑ **CR 1**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			The calculation of the steam demand to be used by the soot blowers is based on assumptions concerning time demand for each blow cycle and numbers of blowers in operation which could not be verified at the time of the on-site visit during that validation. <u>Corrective Action Request No. 1:</u> The calculation of the energy has to include a realistic load factor for the electric motors in a revised PDD. <u>Clarification Request No. 1:</u> The real time for each blow cycle and the number of blowers in operation should be investigated and documented in a transparent manner before replacing these devices.		
B.2.3. Has the baseline been established on a project-specific basis?	2 4- 18	DR, I	Yes the baseline is established in a project specific manner. The use of a generic approach concerning the grid factor, as given by the approach agreed by Bulgaria and The Netherlands, is deemed to be suitable.	☑	☑
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral poli-	1 - 4	DR, I	Yes, the baseline does take into account the major national and/or sectoral policies,	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
cies, macro-economic trends and political aspirations?			macro-economic trends and political developments. Relevant key factors are described and their impact on the baseline and the project risk is evaluated.		
B.2.5. Is the baseline determination compatible with the available data?	1 - 4	DR, I	Yes, spot checks have been performed for all kind of technical and economical data. There was sufficient evidence that all data represent either a realistic or a conservative approach of the actual situation.	☑	☑
B.2.6. Does the selected baseline represent a likely scenario in the absence of the project?	3 , 4	DR, I	Yes, the baseline does represent a likely scenario in the non project case as it conforms to all legal requirements and the prevailing practice.	☑	☑
B.2.7. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1 - 4	DR, I	It could be demonstrated that there is no incentive for further investments in energy efficiency improvements for the shareholders of PFS.	☑	☑
B.2.8. Have the major risks to the baseline been identified?	1 - 4	DR, I	Yes, the major risks have been determined.	☑	☑
B.2.9. Is all literature and sources clearly referenced?	3 , 4	DR, I	Yes.	☑	☑
C. Duration of the Project/ Crediting Period					
C.1.1. Are the project's starting date and operational	3 , 4	DR	Yes, the project starting date is clearly de-	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
lifetime clearly defined and reasonable?			fined. The operational lifetime will exceed the crediting lifetime although a detailed minimum date can not be given due to the variety of the different measures.		
C.1.2. Is the project's crediting time clearly defined?	4	DR	Yes the crediting period is defined as being from 2008 – 2012 in accordance with the first commitment period defined in the Kyoto Protocol. Furthermore the sales of emission reductions (not ERUs) prior to 2008 is announced. That is due to a bilateral agreement between Bulgaria and The Netherlands beyond the rules laid down in the Marrakech Accords and therefore outside the assessment criteria used for this validation.	☑	☑
D. Monitoring Plan					
D.1. Monitoring Methodology					
D.1.1. Does the monitoring methodology reflect good monitoring and reporting practices?	1, 3, 4	DR, I	Yes, the monitoring methodology does reflect current good practice.	☑	☑
D.1.2. Is the selected monitoring methodology supported by the monitored and recorded data?	1, 3, 4	DR, I	Yes, besides the issue identified above under CR1.	☑	☑
D.1.3. Are the monitoring provisions in the monitoring methodology consistent with the project boundaries in the baseline study?	1, 3, 4	DR, I	Yes.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.1.4. Have any needs for monitoring outside the project boundaries been evaluated and if so, included as applicable?	1, 3, 4	DR, I	It has been evaluated, but there is no such need.	☑	☑
D.1.5. Does the monitoring methodology allow for conservative, transparent, accurate and complete calculation of the ex post GHG emissions?	1, 3, 4	DR, I	Yes, this can be confirmed for all reduction paths.	☑	☑
D.1.6. Is the monitoring methodology clear and user friendly?	1, 3, 4	DR, I	Yes, the monitoring methodology is based on existing reporting and quality assurances structures.	☑	☑
D.1.7. Does the methodology mitigate possible monitoring errors or uncertainties addressed?	1, 3, 4	DR, I	Yes	☑	☑
D.2. Monitoring of Project Emissions					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	1, 3, 4	DR, I	Yes, the monitoring workbook and the relevant chapter in the PDD provide for the collection of all required data	☑	☑
D.2.2. Are the choices of project GHG indicators reasonable?	1, 3, 4	DR, I	Yes.	☑	☑
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	1, 3, 4	DR, I	See above	☑	☑
D.2.4. Will the indicators enable comparison of project data and performance over time?	1, 3, 4	DR, I	Yes.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.3. Monitoring of Leakage					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1, 3, 4	DR, I	No indicators have been defined and no leakage emissions are monitored according to the monitoring plan as there are no emissions to be expected.	☑	☑
D.3.2. Have relevant indicators for GHG leakage been included?	1, 3, 4	DR, I	See comment above.	☑	☑
D.3.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1, 3, 4	DR, I	See comment above.	☑	☑
D.3.4. Will it be possible to monitor the specified GHG leakage indicators?	1, 3, 4	DR, I	See comment above.	☑	☑
D.4. Monitoring of Baseline Emissions					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining the baseline emissions during the crediting period?	1 - 4	DR, I	As far as necessary the monitoring plan provides for the collection of data required to determine the baseline emissions.	☑	☑
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	1 - 4	DR, I	Besides the issues identified as CAR1 the choice is reasonable	see CAR 1	☑
D.4.3. Will it be possible to monitor the specified baseline indicators?	1 - 4	DR, I	Yes, wherever such an ex-post determination is technically feasible.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.5. Monitoring of Social and Environmental Impacts					
D.5.1. Does the monitoring plan provide for the collection and archiving of relevant data on social and environmental impacts?	1 - 4	DR, I	Potential impacts on air emissions will have to be in line with EU legislation and therefore undergo separate surveillance routines not further elaborated by the PDD.	☑	☑
D.5.2. Will it be possible to monitor the specified impact indicators?	1 - 4	DR, I	See above	☑	☑
D.6. Project Management Planning					
D.6.1. Is the authority and responsibility of project management clearly described?	3 , 4	DR, I	Yes, all aspects regarding future responsibilities and quality assurance are already fixed in advance.	☑	☑
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	3 , 4	DR, I	See comment above.	☑	☑
D.6.3. Are procedures identified for training of monitoring personnel?	3 , 4	DR, I	See comment above.	☑	☑
D.6.4. Are procedures identified for emergency preparedness where emergencies can result in unintended emissions?	3 , 4	DR	There are no such cases to be considered.	☑	☑
D.6.5. Are procedures identified for calibration of monitoring equipment?	1 - 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these procedures available.	**CR 2**	**CR 2**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Clarification Request No. 2: A documentation of all procedures relevant for ensuring the data quality over the time of the crediting period should be elaborated and submitted to the verifier of the first or initial verification.		
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?	3 , 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these procedures available.	**See CR 2**	**See CR 2**
D.6.7. Are procedures identified for monitoring, measurements and reporting?	3 , 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these procedures available.	**See CR 2**	**See CR 2**
D.6.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	3 , 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these procedures available.	**See CR 2**	**See CR 2**
D.6.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	3 , 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these procedures available.	**See CR 2**	**See CR 2**
D.6.10. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	3 , 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these	**See CR 2**	**See CR 2**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			procedures available.		
D.6.11. Are procedures identified for project performance reviews?	3 , 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these procedures available.	**See CR 2**	**See CR 2**
D.6.12. Are procedures identified for corrective actions?	3 , 4	DR, I	Yes, respective procedures are identified and maintained by PFS. Nonetheless there is no structured documentation of these procedures available.	**See CR 2**	**See CR 2**
E. Calculation of GHG Emissions by Source					
E.1. Predicted Project GHG Emissions					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	3 , 4	DR, I	Yes, all aspects are covered. Emissions of CO_2 and CH_4 have been assessed and CH_4 has correctly been identified as relevant for the project.	☑	☑
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	3 , 4	DR, I	Yes, the PDD gives a complete and transparent calculation of the project GHG emissions.	☑	☑
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	3 , 4	DR, I	Yes, besides the issues identified under CAR1 and CR1	**CAR 1 CR 1**	☑ **CR 1**
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	3 , 4	DR, I	Yes, see above.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.1.5. Have all relevant greenhouse gases and source categories listed in Kyoto Protocol Annex A been evaluated?	3 , 4	DR, I	Yes.	☑	☑
E.2. Leakage Effect Emissions					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	1 - 4	DR, I	Leakage calculations are not requested	☑	☑
E.2.2. Have these leakage effects been properly accounted for in calculations?	1 - 4	DR, I	See comment above	☑	☑
E.2.3. Does the methodology for calculating leakage comply with existing good practice?	1 - 4	DR, I	See comment above	☑	☑
E.2.4. Are the calculations documented in a complete and transparent manner?	1 - 4	DR, I	See comment above	☑	☑
E.2.5. Have conservative assumptions been used when calculating leakage?	1 - 4	DR, I	See comment above	☑	☑
E.2.6. Are uncertainties in the leakage estimates properly addressed?	1 - 4	DR, I	See comment above	☑	☑
E.3. Baseline Emissions					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	1 - 4	DR, I	Yes, besides the issues identified under CAR1 and CR1	**CAR 1 CR 1**	☑ **CR 1**
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	1 - 4	DR, I	Yes.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	1 - 4	DR, I	Yes.	☑	☑
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	1 - 4	DR, I	Yes.	☑	☑
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	1 - 4	DR, I	Yes.	☑	☑
E.3.6. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	1 - 4	DR, I	Yes.	☑	☑
E.4. Emission Reductions					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1 - 4	DR, I	Yes.	☑	☑
F. Environmental Impacts					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	1, 3, 4	DR, I	Yes, the description of the environmental impacts is sufficient.	☑	☑
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1 - 4	DR, I	There is no indication so far by the authority whether an EIA for the biomass boiler will be required or not. <u>Clarification Request No. 3:</u> In case such a procedure will be required during the ongoing of the project the resulting environmental license shall be submitted	**CR 3**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			to the verifier before the first verification.		
F.1.3. Will the project create any adverse environmental effects?	3 , 4	DR, I	No, the project will not create any adverse environmental effects besides an increase of some air emissions due to the change from gas to biomass.	☑	☑
F.1.4. Are transboundary environmental impacts considered in the analysis?	3 , 4	DR, I	No, but it can be confirmed that there are no such impacts.	☑	☑
F.1.5. Have identified environmental impacts been addressed in the project design?	3 , 4	DR, I	Yes.	☑	☑
F.1.6. Does the project comply with environmental legislation in the host country?	1 - 4	DR, I	Yes the project complies with the environmental legislation in Bulgaria.	☑	☑
***G.* Stakeholder Comments**					☑
G.1.1. Have relevant stakeholders been consulted?	1 - 4	DR	Yes, the stakeholder process is described by the PDD.	☑	☑
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	3 , 4	DR	Yes	☑	☑
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	3 , 4	DR	Yes	☑	☑
G.1.4. Is a summary of the stakeholder comments received provided?	2 - 4	DR	There has been no objection by any stakeholder group.	☑	☑
G.1.5. Has due account been taken of any stakeholder comments received?	2 4- 8	DR	There have been no comments, which would have required any further action.	☑	☑

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests	Ref. to check-list question in table 2	Summary of project owner response	Determination conclusion
CAR 1	B.2.2. D.4.2. E.1.3. E.3.1.	The calculation of the energy consumption of the fine screening utility is including a realistic load factor for the electric motors in a revised PDD.	The submitted revised PDD reflects this requirement by introducing such an approach. This issue is deemed to be resolved.
CR 1	B.2.2. E.1.3. E.3.1.	No data can be provided to date given more evidence on the real time of steam demand by the soot blowers.	Substantiated data should be incorporated in the monitoring spread sheet and should be submitted to the verifier in the context of the first or initial verification. Any expected change will have a minor impact on the emission reduction projection. The postponement of this issue to the next verification is considered not to impact the eligibility of the project for JI registration.
CR 2	D.6.5. D.6.6. D.6.7. D.6.8. D.6.9. D.6.10. D.6.11. D.6.12.	There is no quality management system available concerning the monitoring of the project's performance parameter.	A documentation of all procedures relevant for ensuring the data quality over the time of the crediting period should be elaborated and submitted to the verifier of the first or initial verification. This issue will have no impact on the emission reduction projection but indicates risks concerning the future data quality and data verifiability.

Draft report clarifications and corrective action requests	Ref. to check-list question in table 2	Summary of project owner response	Determination conclusion
			The postponement of this issue to the next verification is considered not to impact the eligibility of the project for JI registration.
CR3	F.1.3.	Meanwhile a letter issued by the Ministry of Environment and Water dated October 19th, 2004 has been submitted that clarifies that no EIA is requested by the authority.	Meanwhile a letter issued by the Ministry of Environment and Water dated October 19th, 2004 has been submitted that clarifies that no EIA is requested by the authority. The issue is

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Determination Reference List

Reference No.	Document or Type of Information
1.	**On-site interview with the project developer and project owners conducted on October 19th, 2004** by auditing team of TÜV SÜD **Validation team on-site**: Werner Betzenbichler — TÜV Industrie Service GmbH TÜV SÜD Gruppe Eberhard Rothfuß — TÜV Industrie Service GmbH TÜV SÜD Gruppe **Interviewed persons:** Gerald Dunkel — KWI Manfred Stockmayer — KWI Nikola Tenov — PFS
2.	**On-site interview with the project developer and project owners conducted on October 20th and October 21st, 2004** by auditing team of TÜV SÜD **Validation team on-site:** Eberhard Rothfuß — TÜV Industrie Service GmbH TÜV SÜD Gruppe Kiril Baharev — TÜV SÜD Representative Office Bulgaria **Interviewed persons:** Gerald Dunkel — KWI Nikola Tenov — PFS Avinash Taneja — PFS (CEO) Dr. Ivan Iakov — Mayor of Stambolijsky
3.	**Draft Project Design Document for "PFS Joint Implementation Project",** September 2004 including 19 annexes
4.	**Draft Project Design Document for "PFS Joint Implementation Project",** Revision October 2004 including 19 annexes
5.	**Protocol of a Board Meeting of PFS held on 01.09.2004**