Industrie Service

Final Determination Report

Determination of the ” Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia” JI project in Russia

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Client:	Joint Stock Company "Onega-Energy" 2, Gutina Street 164840 Onega-Arkhangelsk Region Russian Federation
Contract approved by:	Michael Rumberg
Report Title:	Determination of the JI-Project: "Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia"
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Summary:

The Certification Body "Climate and Energy" of TÜV SÜD Industrie Service GmbH has been ordered by Joint Stock Company "Onega-Energy" in Onega, Arkhangelsk Region, Russian Federation 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 project owner.

As the result of this procedure, it can not yet finally be confirmed that the submitted project documentation is in line with all requirements set by the Marrakech Accords and the Kyoto Protocol and relevant future guidelines of the Russian Designated National Authority which still has to be appointed. This opinion is caused by the sole remaining outstanding issues regarding the Letter of Approvals of the involved Annex-I-Parties and the missing national regulations for JI projects in Russia as well as missing final guidance for JI projects from the JI Supervisory Committee.

But as soon as these issues are solved and clear guidance and procedures for the registration of JI projects are available TÜV SÜD can and will recommend this project for registration at the JI Supervisory committee.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 788 054 tons CO_{2e} (to be issued as ERUs) in the intended first crediting period from 2008 - 2012 congruent with the first Commitment Period of the Kyoto Protocol represents a reasonable estimation using the assumptions given by the project documents.

Work carried out by:	Thomas Kleiser (project manager, lead auditor) Olga Mikhaylyuk (local expert)	Internal Quality Control by: Werner Betzenbichler, Michael Rumberg

Abbreviations

CAR	Corrective action request
CR	Clarification request
DOE	Designated Operational Entity
DNA	Designated National Authority
DP	Determination Protocol
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
ERU	Emission Reduction Unit
FSC	Forest Stewardship Council
GHG	Greenhouse gas(es)
IRR	Internal Rate of Return
JI	Joint Implementation
KP	Kyoto Protocol
LoA	Letter of Approval
MP	Monitoring Plan
MS	Management System
NGO	Non Governmental Organisation
NPV	Net Present Value
PDD	Project Design Document
SC	Supervisory Commitee
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

Joint Stock Company "Onega-Energy" in Onega, Arkhangelsk Region, Russian Federation has commissioned TÜV Industrie Service GmbH TÜV SÜD Group to conduct a determination of the "Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia " 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 (see www.vvmanual.info), employed a risk-based approach in the determination, focusing on the identification of significant risks for project implementation and the generation of emission reductions

This report is based on the PDD version of March 10th, 2006 (PDD version No. 1). This version was published in the context of the Global Stakeholder Process (GSP) on the website of www.netinform.de (link see chapter 4). Potential stakeholders have been invited for commenting by using the Climate-L announcement list service. According to CARs and CRs indicated in the audit process the client decided to revise the PDD. The final version submitted on August 18th, 2006 (dated as version 3.0, dated August 9th, 2006) serves as the basis for the final conclusions presented herewith.

Studying the existing project documentation, 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
- Methane emissions from wood waste landfills

- Fuel switch
- District heating systems
- Technical aspects of the boiler systems
- Monitoring concepts
- Political, economical and technical random conditions in host country
-

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

Thomas Kleiser is a lead auditor for CDM and JI projects at TÜV Industrie Service GmbH TÜV SÜD Group. In his position he is responsible for the implementation of verification and certifications processes for GHG mitigation projects. He has received extensive training in the CDM and JI validation processes and participated already in more than 20 CDM and JI project assessments.

Javier Castro 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 and technical issues.for this type of projects and also an expert for monitoring concepts.

Olga Mikhaylyuk participated as local auditor in the audit and functioned as local expert. Olga has received extensive training in the CDM validation processes.

Furthermore further experts of the Munich team of carbon management service in TÜV SÜD have been partially involved in the project.

The audit team covers following requirements:

- Knowledge of Kyoto Protocol and the Marrakech Accords (All)
- Environmental and Social Impact Assessment (All)
- Skills in environmental auditing (ISO 14000, EMAS) (All)
- Quality assurance (Thomas Kleiser)
- Methane emissions from wood waste landfills (Thomas Kleiser, Javier Castro)
- Fuel Switch (Thomas Kleiser, Javier Castro)
- District heating systems (Thomas Kleiser)
- Technical aspects of the boiler systems (all)
- Monitoring concepts (all)
- Political, economical and technical random conditions in host country (Olga Mikhaylyuk)

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 of the Certification Body "Climate and Energy" and
Michael Rumberg – Head of division CDM/JI and deputy head of the certification body

1.3 GHG Project Description

The project aims to replace old and very inefficient municipal heating installations of fossil coal boilers build in the 1950s and 1970s by modern wood-fired boilers. The project plans to install a new heating plant (with a capacity of 43 $MW_{thermal}$ in total) in Onega Town, Archangelsk Oblast in North-West Russia. The new sytem for district heating comprehends two biomass heating boilers (17 MW each) and one diesel boiler (9 MW) for emergency purposes
The project owner is Onega Energy JSC ("Onega Energy"), a company set up especially for the purpose of delivering thermal power produced on biomass (wood-waste) to half of the 23,000 people in Onega town. Onega Energy is a joint stock company. The share distribution is 75% (minus 1 share) Onega Sawmills JSC and 25% (+ 1 share) Municipality of Onega.

The objective of the project is to substitute coal as non-renewable energy source with wood waste from FSC-certified forests and thus reduce GHG emissions as well as emissions of further pollutants such as SO_2 and NO_2. The project is located in the city of Onega, Arkhangelsk region in NW-Russia.

The baseline scenario is reflected mainly by the direct CO_2-emissions of coal for heat production combusted in the old boilers and methane emissions of deposed wood waste from JSC Onega Sawmill which in future will be used as CO_2-neutral, renewable fuel for heat production in the new biomass boilers.

The project activity – first preparations for the installation of the new biomass boilers – has already started on April 1st, 2006. The installations will be finalised in 2007 and the starting date of the first crediting period will be January 1st, 2006.

The project has two project participants.

The Project Participants of the Host Country Russia is Onega Energy JSC in Onega. Onega Energy JSC is the owner of the project and also the owner of permits and licenses. Onega Energy JSC will supply the Emission Reduction Units (ERUs).

Second project participant from an annex 1 country is the GFA Consulting Group GmbH in Hamburg, Germany. Germany will probably be the future buyer country for the ERUs. GFA Consulting Group GmbH in Germany was mainly responsible for the project documentation.

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

On March 30th and 31st, 2006 the audit team of TÜV SÜD performed on-site audits and subsequently e-mail interviews with the project owner, the investor and the project developer as well as municipal authorities to confirm selected information and to resolve issues identified in the document review. Representatives of the Russian company "Onega Energy JSC ("Onega Energy")" as project owner, German company GFA Consulting Group GmbH as project developer as well as representatives from Orimi Conzern as investor and local authorities from the municipality of Onega 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
Onega Energy JSC ("Onega Energy") and Orimi Conzern	Project design, baseline, monitoring plan, environmental impacts, permits and licenses, stakeholder comments, monitoring procedures, calibration of the measurement equipment, archiving of data, district heating sector, Approval of the project, JI-Guidelines, national policy
GFA Consulting Group GmbH	Project design, baseline, monitoring plan, environmental impacts, permits and licenses, stakeholder comments, additionality, monitoring procedures, calibration of the measurement equipment, documentation, archiving of data, Energy Sector, Approval of the project, JI-Guidelines
Municipality "Onega"	Baseline – current situation of district heating system in Onega, approval, participation in the project, environmental issues, stakeholder process, financial issues, public funding, environmental issues, social issues (employment)

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. Clarification Requests raised by TÜV SÜD have been resolved in most parts in the answers to the draft validation protocol (submitted from TÜV SÜD to the client in mid of April 2006), prepared by GFA Consulting Group GmbH at the end of April and in early May 2006 and in the answers on additional questions submitted to GFA Consulting Group GmbH in end of May 2006. A revised PDD, dated August 9th, 2006 and a number of additional documents have been submitted to the validator in order to provide the required evidences.

To guarantee the transparency of the determination process, the concerns raised are and the response given are summarised in chapter 3 below. The whole process is documented in more detail in the final determination protocol in Annex 1.

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.

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 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 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 final conclusions of the determination are presented consecutively.

3.1 Project Design

3.1.1 General Findings

Until beginning of February 2006 there was no official form to be used in the context of the PDD development of JI projects besides the guidance given under the CDM. Thus the project developer first used the format for small scale CDM-projects for his PDD. Also this first PDD was considered to cover all aspects necessary to describe the project and to assess its conformity with the underlying regulations.

Nevertheless a preliminary official form for description of JI-Project is now available and its use would certain the approval of JI Project by the JI Supervisory Committee. Thus it is necessary to re-format the submitted PDD.

The foreseen technology does reflect current good practice for heat generation in district heating systems in this scale. The project uses technology that goes beyond the state of the art in the host country. Moreover it is unlikely that the foreseen project technology will be substituted during the crediting period by a still more efficient technology.

The Russian Federation is a Party to the Kyoto Protocol since November 18, 2004. But until now nor a Designated National Authority (DNA) for JI projects has been installed nor are there national regulations for the approval process of JI-projects. Thus to receive a Letter of Approval (LoA) from the Russian Federation currently is not possible.

A LoA from the German DNA currently also is not available. One of the requirements to receive an LoA from the German DNA is a positive determination opinion in this final determinetion report.

Nevertheless the ministries in the Russian Federation as welll as in Germany which are involved in this project already at this stage of the project have issued a Letter of Endorsement which shows in principle the support of the project.

The project boundaries and equipment are not totally clear according to the description in the first PDD and should be elaborated much more detailed.

Also the key factors for this project should be worked out more transparently, more detailed and more re-traceably.

The project starting date is clearly defined in the PDD. Also the starting date of the crediting period is clearly defined (January 1st, 2008) but the concrete crediting period is not clearly outlined and is not in line with the actual requirements for JI projects.

Currently it is only possible to generate ERUs in the years 2008-2012 in accordance with the first commitment period of the Kyoto protocol. A generation of ERUs beyond Kyoto (after 2012) currently is not possible as long as there are no regulations for a second commitment period and for JI in this second commitment period under the Kyoto protocol. Thus the crediting period has to be explained (verbally) more detailed and elaborated more clearly in the tables for the emission reductions (chapter A.A.4.3.1 and E.6).

3.1.2 Issued CARs/CRs

Corrective Action Request No. 1 (CAR 1):

Written LoAs from both involved parties have to be submitted to the validator before starting the registration process for this JI project at the JI-Supervisory Committee.

Response:

The Letters of Approvals from both involved countries (parties - Germany and the Russian Federation) cannot be issued in this stage of the project (from Germany) and as long as there is no DNA as well as no national regultions for the approval process of JI project in the Russian Federation. So this CAR cannot be solved currently but need to be solved until starting the registration process for this project. This open issue is out of the influence of the project participants.

Corrective Action Request No. 2 (CAR 2):

Russia has to install a DNA and G&Ps before the project can apply for registration at the JI Supervisory committee. This CAR is out of the influence of the project participants.

Response:

This CAR is out of the influence of the project participants and remains as further open issue at this stage of the project.

Corrective Action Request No. 4 (CAR 3):

A clear, re-traceable, transparent and consistent description of the project boundaries should be included in the revised PDD. Furthermore a figure illustrating these boundaries should be added.

Response:

The requested corrections and clarifications have been included in the final revised PDD.

Corrective Action Request No. 4 (CAR 4):

The PDD shall be reformatted according to the Draft PDD for JI projects published on UNFCCC´s JI website. Furthermore the foreword in the PFF should be actualised.

Response:

The PDD has been reformatted according to the current available/valid draft JI PDD version with an explaining note in the foreword of the PDD.

Clarification Request No. 1 (CR 1):

The definition of the project´s system boundaries has to be adjusted.

Response:

Project boundaries have been adjusted and elaborated more detailed in the revised PDD to take into account the current valid versions of the applied methodologies.

Clarification Request No. 2 (CR 2):

The aspect training and maintenance has to be elaborated more detailed in the revised PDD. A prospective time schedule and the amount of time for trainings and maintenance should be included in the PDD.

Response:

As far as possible the requested information was included in the revised final PDD.

Clarification Request No. 5 (CR 5):

A clear, transparent and re-traceable description and discussion of key factors for the project has to be included in the revised PDD.

Response:

National, sectoral policies and macro-economic trends have been elaborated more detailed and are included and taken into account in chapter A.4.3. of the final revised PDD.

Clarification Request No. 7 (CR 7):

Literature and sources should be referenced in a more scientific way.

Response:

The requested information has been included in the final revised PDD.

Clarification Request No. 8 (CR 8):

Transparent evidence for the stated operational lifetime of more than 21 years should be given.

Response:

Additional information and evidence has been sent to the validator.

3.1.3 Conclusion

The project status is in a comparative early stage; therefore the project does not yet fulfil formally all belonging criteria set for the approval of JI-projects. The Letter of Approvals (loAs) by both parties, investor and host country, shall be submitted to TÜV SÜD at the time of its availability. In case the issuance of ERUs will be done under the "First Track JI"- regime (which currently seems to be unrealistic), there is no requirement to provide the validator such a LoA in order to forward it to the Supervisory Committee. Under that circumstance the issue can be considered to be resolved otherwise it will be considered as an outstanding issue requiring a final revision of this validation report.

The foreseen technology does reflect current good practice for generation heat and hot water for the municipal district heating system in Onega. It is moreover very unlikely that the foreseseen project technology will be substituted during the crediting period by a still more efficient technology .

The revised final PDD contains all required information how training, operating, controlling, maintenance will be organized and managed. The aspects regarding future responsibilities and quality assurance are fixed.

It is recommended to fill out the official form for the description of JI-Project (PDD) as far as it is approved. Currently a preliminary version of JI-PDD form is available on the JI websites of UNFCCC. Its use will be necessary for an approval of this JI-Project as a "Second Track JI" by the JI Supervisory Committee.

3.2 Baseline

3.2.1 Findings

The "Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia JI project in Russia which has to be considered as large scale project due to the installed capacity uses two small-scale methodologies – these are: AMS-III.B – fossil fuel switching in existing industrial applications for the fuel switch part of the project (from coal to biomass (wood waste) and AMS-III.E – avoidance of methane production from biomass decay through controlled combustion for the part (current deposition of biomass on a landfill site) – for its baseline scenario. This approach can be considered as applicable as currently there are no large scale methodologies available for this type of projectsa and the JI rules currently do not require that the project developer strictly has to follow CDM-rules in his JI project.

But the selection of the methodologies and the application of the respective version of the methodology should be elaboratzed more detailed.

The baseline does take into account the IPCC Good Practice Guidance in National Greenhouse Gas Inventories, further project specific literature and the major national and/or sectoral policies, macro-economic trends and political developments. Relevant key factors are described and their impact on the baseline and the project risk is evaluated.

The used baseline approach for this project (fuel switch and methane emissions avoidance) is widely transparent, reproducible and conservative. It delivers emission factors for this baseline, which are considered to be appropriate.

The additionality of the project is proven by using the"Additionality Test" which is common used for CDM projects. The additionality of the project is mainly proven by financial barriers, description of technical barriers and prevailing practice analysis which are deemed quite appropriate. It is reliable shown that "business-as-usual" which means to produce heat and hot water with the existing available equipment (coal-based boilers) is the baseline as neither the municipality nor possible private investors have the money and are willing under the framework for district heating systems in Russia to invest in the envisaged risky project. But if the income of carbon credits is included in the consideration the project becomes economically viable. Similar projects are already developed as JI-projects in other, higher-ranked JI-countries such as for example Estonia, Czech Republic, Bulgaria and Ukraine.

The PDD also shows in particular that there is a lack of local expertise in terms of operating and maintaining biomass boilers.

The on-site assessment also has given a focus on the environmental additionality and on the price risks for ERUs.

3.2.2 Issued CARs/CRs

Clarification Request No. 3 (CR 3):

The discussion, selection and application of the small scale methodologies AMS-III.B and AMS-III.E should be based on the current valid versions of these methodologies taking furthermore into account additional decisions and guidance of the EB in the last weeks.

Response:

The requested clarifications have been included in the final revised PDD. For further information please see attached determination protocol.

Clarification Request No. 4 (CR 4):

The discussion, determination and application of the chosen baseline have to be elaborated more transparently and detailed using the current valid draft JI-PDD format.

Response:

This relevant section (B.2 in the utilised valid draft JI-PDD format of the final PDD) has been amended and should be sufficiently detailed especially for a small-scale project.

Clarification Request No. 5 (CR 5):

The baseline has to be adjusted and elaborated more detailed (using the current valid versions of the applied methodologies). The conservativeness of the assumptions has to be demonstrated much more detailed and clearly.

Response:

The baseline has been corrected and elaborated much more detailed.

Clarification Request No. 6 (CR 6):

The "additionality test" for small scale project activities should be used and elaborated more clearly (in a separate chapter using the Draft JI_PDD format). The argumentation should be illustrated in figures/tables.

Response:

The requested clarifications and changes have been included in the final revised PDD.

3.2.3 Conclusion

The used approach for the two baseline methodologies for fuel switch and avoidance of methane emissions is applicable for this type of project. Deviations from AMS-III.E are justified with official third party expert opinion and are deemed to be applicable for this project considering the specific conditions in Northern Russia.

All given responses to the indicated CARs and CRs are resolving the belonging issues. The project fulfils the criteria on baselines as set for the approval of JI-projects.

3.3 Duration of the Project

The project starting date is exactly defined as starting date of first measures for the installatiojn of the new equipment (April 1st, 2006).

The crediting period in terms of Kyoto Protocol can be defined as being from 2008 - 2012 as maximum in accordance with the first commitment period defined in the Kyoto Protocol. The description of the baseline in the PDD is not consistent with current valid JI rules. ERUs only can be generated in the period 2008 – 2012 corresponding with the first commitment period of the Kyoto protocol.

The operational lifetime of foreseen technology will be longer than the crediting period.

3.3.1 Findings

Clarification Request No. 9 (CR 9):

The chosen crediting period has to be corrected, and in consequence also the illustration of the emission reductions in the PDD referring to the chosen period has to be adjusted.

Response:

The crediting period has been corrected and adjsuted.

3.3.2 Conclusions

The start of project activity and the start of the crediting period of the project are exactly defined; the project starts on April 1st, 2006, the crediting period starts with January 1st, 2008 after finishing all instalations in 2007.

The crediting period (period in which ERUs will be generated) will last from January 1st, 2008 to December 31st, 2012 in accordance with the first commitment period defined in the Kyoto Protocol., when ERUs can be generated and the period before 2008, when only AAUs can be created.

The operational lifetime of the project is longer than this crediting period thus it depends on the negotiations on a possible future JI system whether additional ERUs can be earned after 2012.

3.4 Monitoring Plan

3.4.1 Findings

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

Indicators for project emissions and baseline emissions have been defined and will be monitored.

Leakage emissions are not monitored according to the monitoring plan as there are no emissions to be expected.

The registration, monitoring, measurement and reporting will be leaned against existing monitoring procedures of JSC Onega Sawmill which is the mother company of JSC Onega Energy.

This already partially trained personnel can work in this project which ensures the quality of the monitoring system.

But the current available monitoring plan does not consider the latest decisions of EB 23 concerning monitoring and thus needs to be elaborated more detailed and adjusted.

3.4.2 Issued CARs/CRs

Clarification request No. 10 (CR 10):

The monitoring plan has to be adjusted and elaborated much more detailed. The power consumption should be included in the monitoring plan according to the current valid version of AMS-III.E.

Response:

Additions were made to the fairly comprehensive monitoring section of the PDD (which could be used as a basic monitoring plan), founded on the current valid versions of the AMS III B and AMS III E.

A separate detailed monitoring plan has been submitted as annex 3 of the final PDD.

3.4.3 Conclusion

With the revised PDD the monitoring plan fulfils all requirements for such type of projects. The discussed issue can be considered to be resolved.

3.5 Calculation of GHG Emissions

3.5.1 Findings

The project's spatial boundaries are mostly correctly described. All necessary parameters to monitor project emissions have been defined. The most relevant and likely operational characteristics and indicators to calculate project emissions and baseline emissions have been chosen. Default values are taken from IPCC or other public available literature.

Uncertainties in the GHG emissions estimates are addressed in the documentation.

Leakage calculations are obviously not considered but this should be discussed more distinguished.

Thus, the project will result in fewer GHG emissions than the baseline scenario.

3.5.2 Issued CARs/CRs

Clarification Request No. 11 (CR 11):

"Leakage" has to be discussed more detailed in the revised PDD.

Response:

The necessary discussion is included in chapter D.1.3. of the final revised PDD.

Clarification Request No. 13 (CR 13):

The non-GHG gas NH_4 should be excluded from the PDD, the relevant gases for this project should be described clearly in the revised PDD (using Draft JI-PDD format).

The emission reductions related to old biomass already stored at the existing stockpile has to be re-calculated; evidence for the used assumptions in the applied formula should be included in the final PDD.

Response:

The mistake has been corrected. This was a typing error meaning CH_4. The PDD and the calculations have been updated accordingly.

3.5.3 Conclusion

The GHG calculations are documented in a complete and transparent manner. Conservative assumptions have been used when calculating baseline emissions. Further the possible uncertainties in the GHG emission estimates are properly addressed in the documentation.

The project does fulfil all the prescribed requirements completely.

3.6 Environmental Impacts

3.6.1 Findings

The analysis of the environmental impacts is sufficient. The project will improve the current environmental situation. Transboundary impacts do not exist.

According to the Russian law such projects need permissions for each stage of the projects. Therefore an assessment of environmental impacts of the project has to be conducted but there is no format or project-specific requirement for an EIA in this case.

All relevant environmental impacts are listed sufficiently and transparently in table F.1.1. of the final revised PDD.

3.6.2 Issued CARs/CRs

Clarification Request No. 12 (CR 12):

It has to be discussed whether the biomass boiler can cause higher particle, NO_x and CO immissions in comparison to the status-quo.

Response:

As this type of boiler is used in many European countries even with stricter environmental rules than currently in Russia, the level of NOx, CO and dust does not present/cause any problems. Levels of NOx and CO of the very old coal boilers are not available, but are surely less favourable than with the new equipment.

3.6.3 Conclusion

The project fulfils all prescribed requirements completely. The open issue has been clarified sufficiently.

3.7 Local stakeholder process

3.7.1 Findings

There are no project-specific requirements how to conduct a Local Stakeholder Process for this project.

Nevertheless a comprehensive stakeholder consultation has been carried out. All stakeholders affected by the project have been consulted such as local, regional and state authorities as well as private persons and institutions.

The project has been announced via newspaper. All possible environmental and social effects of the project have been discussed.

The stakeholder consultation process in this project fits all requirements for local stakeholder consultation as required in the Kyoto Protocol and the Marrakech Accords. Even more than required has been done.

3.7.2 Issued CARs/CRs

No such requests have been issued.

3.7.3 Conclusion

The project fulfils all the prescribed requirements completely.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project design document on its website for 30 days from March 10th, 2006 to April 8th, 2006.

Documents have been public available for commenting under the following link.

http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1595&Ebene1_ID=26&Ebene2_ID=442&mode=1.)

No comments have been received in this period.

5 DETERMINATION OPINION

TÜV SÜD has performed a determination of the "Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia" JI project in Russia. The determination was performed on the basis of all 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.

There are the sole remaining issues concerning the required Letters of Approval and the missing national procedures for JI projects in Russia.

Under the condition that these issue will be rectified sufficiently it is our opinion, that the project meets all relevant UNFCCC requirements for JI. As soon as clear guidance and procedures for the registration of JI projects are available and installed by the JI Supervisory Committee TÜV SÜD can and will recommend this project for registration at the JI Supervisory committee.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 788 054 tons CO_{2e} (to be issued as ERUs) in the intended first crediting period from 2008 - 2012 (to be issued as ERUs) congruent with the first Commitment Period represents 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. The determination has been performed using a risk-based approach as described above. The only purpose of the report is its use during the registration process as JI project. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the determination opinion, which will go beyond that purpose.

Munich, 2006-08-30

Michael Rumberg

Deputy Head of Certification Body "Climate and Energy"

Munich, 2006-08-30

Thomas Kleiser

Responsible Project Manager

Annex 1 of 2

Industrie Service

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)	**CAR 1**	The two Parties involved in this JI project are Russia (host country) and Germany. A written Letter of Approval (LoA) of the Russian Federation is not yet available for this project. One of the requirements for issuing this written Letter of Approval by the responsible German Designated National Authority (DNA) is a positive determination opinion in the final determination report. Currently there is also no written Letter of Approval from Germany. One of the requirements for issuing this written Letter of Approval by the responsible German Designated National Authority (DNA) is a positive determination opinion in the final determination report.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			Corrective Action Request No. 1: Both written LoAs have to be submitted to the validator before starting the registration process for this JI project at the JI-Supervisory Committee. Additional information: The Russian Ministry of Economic Development and Trade of Russian Federation as responsible authority already has issued a Letter of Endorsement (LoE) for this project, dated January 19th, 2006. Furthermore the German "Ministerium für Umwelt, Naturschutz und Reaktorsicherheit" has issued a Letter of Endorsement (LoE) already in September 2005 (dated September 29th, 2005) – see Inf. Ref List-document No. 38.
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)	See below	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)	☑	Article 5 requires "…Annex I Parties to having in place, no later than 2007, national systems for the estimation of greenhouse gas

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			emissions by sources and removals by sinks ". Article 7 requires "… Annex I Parties to submit annual greenhouse gas inventories, as well as national communications, at regular intervals, both including supplementary information to demonstrate compliance with the Protocol". Germany has submitted its third national communications, see link: http://unfccc.int/resource/docs/dpr/deu1.pdf, and a progress report (dated August 1st, 2006), see link: http://unfccc.int/resource/docs/dpr/deu1.pdf. Germany fulfils all obligations as requested in case the project will run as second track JI project. It cannot be confirmed at this stage whether Ireland also fulfils all requirements to be fulfilled in case the project wants to run as first track JI project. This issue can not be answered finally by now as such as the JI

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			system is not installed yet in total.
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 will be additional to domestic actions in Germany (buyer country). This issue can not be answered finally by now for Russia as such as the JI system is not installed yet in Russia.
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	**CAR 2**	Germany already has designated a national focal point. The nominated German DNA is: Umweltbundesamt - Deutsche Emissionshandelsstelle Postfach 33 00 22 14191 Berlin Contact: Dr. Enno Harders, Dr. Wolfgang Seidel (enno.harders@uba.de, wolfgang.seidel@uba.de) Phone: (49-30) 8903-5050 Fax: (49-30) 8903-5010 According to the information on the UNFCCC website the Russian Federation does not have an official designated national focal point. The Russian Federation currently only has nominated a National Focal

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			point – contact details: Mr. Alexander Bedritsky, Head of Roshydromet, Russian Federal Service for Hydro-meteorology and Environmental Monitoring (RosHydroMet), Novovagan'kovsky Street 12, 123995 Moscow phone: (7-095) 252-1467/252-1389 fax: (7-095)255-2216 e-mail: bedr@mecom.ru/PRRUK@mcc.mecom.ru But currently the Russian federation has not yet appointed an official De-signated National Authority (DNA) to UNFCCC National guidelines and procedures (G&P) for the approval of JI projects are currently available in general for Germany but not for JI projects in the Russian Federation. **Corrective Action Request No. 2:** Russia has to install a DNA and G&Ps before the project can apply for registration at the JI Supervisory committee. This CAR is out of the

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			influence of the project participants.
6. The host Party shall be a Party to the Kyoto Protocol	Marrakech Accords, JI Modalities, §21(a)/24	☑	The Russian Federation is a Party to the Kyoto Protocol since November 18, 2004.
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	☑	The value for assigned amount units of Russia is 100% of emissions in 1990. The issue whether "the host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts" can not be answered concluding and is out of the influence of the project participants as such as the JI system is not yet installed in Russia (see CAR above). Currently the Russian Federation has published three national communications (link: http://unfccc.int/parties_and_observers/parties/items/2180.php).
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4	Marrakech Accords, JI Modalities,	☑	This issue can not be answered by now as such as the JI system is not installed yet finally.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
	§21(d)/24		
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	☑	A first PDD, which was published in the Global Stakeholder Process from May 10th, 2006 to April 8th, 2006 has been submitted in March 2006. All necessary information to conduct the determination was included in this first PDD.
10. The project desing 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 PDD has been published on the TÜV SÜD website for 30 days in the period from March 10th, 2006 to April 8th, 2006 and Parties, stakeholders and UNFCCC accredited observers have been invited to provide comments via Climate-L distribution list (link: http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1595&Ebene1_ID=26&Ebene2_ID=442&mode=1.) No comments have been received. Annotation: Currently there is no possibility/procedure to make the PDD public available through the secretariat, as such procedures are

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
			not available for JI projects yet. The chosen approach can be considered as sufficient substitution at this point in time.
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)	See below	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	See below	Table 2, Section B.2
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	See below	Table 2, Section B.2
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,	See below	Table 2, Section B.2

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
	Appendix B		
15. The project shall have an appropriate monitoring plan	Marrakech Accords, JI Modalities, §33(c)	See below	Table 2, Section D

Table 2: Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. General Description of Project Activity The project design is assessed.					
A.1. Project Boundaries Project boundaries are the limits and borders defining the GHG emission reduction project.					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	1-7, 8-12, 29, 36	DR, I	The project's spatial boundaries are not clearly described in the PDD (in this case in chapter B.4). According to the applied methodologies for this project (AMS-III.B and AMS-III.E) – see current valid versions under the link: http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.) the project boundaries should include the physical, geographical site where the fuel combustion affected by the fuel-switching measure occurs (according to the methodology AMS-III.B – Link: http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_YKIUHPK8ZE53C1NZG83A7K2CSN8LS3) and the physical, geographical sites:	**CAR 3, CAR 4**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			a. where the solid waste would have been disposed….. b. where the treatment of biomass controlled combustion takes place c. and in the itineraries between them, where … according to the methodology AMS-III.E (Link: http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_1XYEL3RAK1E4Q3NL1NMMFN09M556YW). This is not described and considered correctly in the PDD. **Corrective Action Request No. 3:** A clear, re-traceable, transparent and consistent description of the project boundaries should be included in the revised PDD. Furthermore a figure illustrating these boundaries should be added. The PDD uses the SSC-CDM-PDD format. But in this case, to be consistent with the future JI regulations, the draft PDD for JI projects (Link:		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			http://ji.unfccc.int/CallForInputs/Draft_PDD_Form.pdf) already should be used although the applied methodologies refer to a small scale CDM project. **Corrective Action Request No. 4:** The PDD shall be reformatted according to the Draft PDD for JI projects published on UNFCCC´s JI website. Furthermore the foreword in the PFF should be actualised.		
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	1-7, 8-12, 24, 29, 36	DR, I	Yes, in the main the project´s system boundaries are clearly described. But according to the comments under A.1.1. the complete project´s system description and illustration has to be adapted and it has to be assessed whether further components have to be included in the project´s system boundaries according to the current valid versions of the applied methodologies (for small scale CDM projects) AMS-III.B and AMS-III.E. **Clarification Request No. 1:** The definition of the project´s system boundaries has to be adjusted.	**CR 1**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.2. Technology to be employed Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.					
A.2.1. Does the project design engineering reflect current good practices?	1-7, 8-12, 24, 36, 37	DR, I	Yes, the employed technology does reflect current good practice in the host country. The applied technology – modern wood-fired biomass boilers – is a technology developed in the last fifteen years especially in North- and Central European countries. For Russia the technology with an equipment as designed for this project is rather new and even more than state of the art technology.	☑	☑
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?	1-7, 8-12, 24, 36, 37	DR, I	The project uses even more than state of the art technology considering the experien-ces with such projects in Russia.	☑	☑
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within	1-7, 8-	DR, I	It is not likely that the project technology will be substituted by a more efficient tech-	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
the project period?	12, 24, 36, 37		nology in the next 20 - 30 years. As for JI projects currently only a project period of 5 years (years 2008 – 2012) is ensured there is absolutely no risk that this technology will be substituted by another technology in this time.		
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1-7, 8-12, 24, 25, 36, 37	DR, I	Yes. In chapter D.4 there is a description of the required training. But the aspects of training and maintenance have to be described more detailed in the revised PDD. **Clarification Request No. 2:** The aspects "training and maintenance" have to be elaborated more detailed in the revised PDD. A prospective time schedule and the amount of time for trainings and maintenance should be included in the PDD.	**CR 2**	☑
A.2.5. Does the project make provisions for meeting training and maintenance needs?	1-7, 8-12, 24, 25, 36,	DR, I	Yes, in chapter B.4. But see comment above.	**CR 2**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	37				
B. Project Baseline The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.					
B.1. Baseline Methodology It is assessed whether the project applies an appropriate baseline methodology.					
B.1.1. Is the discussion and selection of the baseline methodology transparent?	1-12, 13, 14, 15, 16, 22-23, 32-33, 36, 37, 39	DR, I	Yes, but not in total. Currently (and probably also in the future when the procedures for the registration of JI projects will be finally decided in September 2006) there are no binding requirements that approved methodologies (as in case of CDM) - for example the approved methodologies for CDM projects – have to be applied for JI projects. So it is in the free decision of the project developers whether they use an approved CDM-methodology for their project or whether they develop, in a transparent, plausible, re-traceable and conservative manner, a project specific JI-	**CR 3**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			methodology. It has to be highlighted that in the existing project there is no approved large scale CDM methodology that fits to the baseline and project scenario of this project. So the proceeding of the project participants to develop a project specific baseline methodology is acceptable and correct. The baseline and monitoring methodology for this project is based mainly, but not strictly in all points on the approved methodologies for small scale CDM projects AMS-III.B "Switching fossil fuels" (version 6 from September 30th, 2005) and AMS-III.E "Avoidance of methane production from biomass decay through controlled combustion" (elements of version 7 from November 28th, 2006 and version 8 from March 3rd, 2006). But as in the PDD not the current valid versions of these methodologies are applied so the discussion, selection and the assessment of the applicability criteria cannot be considered as transparent and complete enough at the moment.		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Clarification Request No. 3: The discussion, selection and application of the small scale methodologies AMS-III.B and AMS-III.E should be based on the current valid versions of these methodologies taking furthermore into account additional decisions and guidance of the EB in the last weeks. 1. General Guidance for SSC projects (see especially the points under monitoring): Link: http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_gnal_guid.pdf 2. New Requirements for the monitoring concept: Link: http://cdm.unfccc.int/Reference/Guidclarif/EB23_%20para%2024_guidance_monitoring.pdf 3. Conservativeness in calculating methane emissions: Link: http://cdm.unfccc.int/Reference/Guidclarif/E		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			B23_%20para%2027_guidance_avoided_methane. pdf. 4. Furthermore it has to be demonstrated in which points and why the methodologies deviate from the SCC-CDM methodologies. 5. It has to be clearly stated in the PDD that the project in its character and in its size is a large-scale JI project. But as there are currently no adequate large scale methodologies directly applicable for this type of project alternatively two small scale baseline and monitoring methodologies under the CDM have been applied for this project.		
B.1.2. Does the baseline methodology specify data sources and assumptions?	1-12, 13-16, 19-23, 27, 36, 37, 39	DR, I	Yes, all data used is specified and documented transparently and re-traceably in the PDD. But the documentation should be revised where necessary taking into account the clarification requests and corrective action requests above.	**CR 3, CAR 3-4**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
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.)	1-12, 13-16, 19-23, 27, 37, 39	DR, I	Yes, especially the small scale methodology AMS-III.E. But see again the comments given in the CRs and CARs above.	**CR 3, CAR 3-4**	☑
B.1.4. Does the baseline methodology specify types of variables used (e.g. fuels used, fuel consumption rates, etc)?	1-12, 13-16, 19-23, 27, 32, 33, 37, 39	DR, I	Yes. All types and variables such as fuels used, fuel consumption rate, carbon emission factors of the fuels (diesel, wood), energy content of the biomass, moisture content of the biomass etc. are clearly specified in Tables B.1.1. for the methodology AMS-III.B and in table B.1.2 for the methodology AMS-III.E	☑	☑
B.1.5. Does the baseline methodology specify the spatial level of data (local, regional, national)?	1-12, 37, 39	DR, I	Yes. But see again the comments given in the CRs and CARs above.	**CR 1-3, CAR 3-4**	☑

* MoV = Means of Verification, DR= Document Review, I= Interview

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.2. Baseline Determination The choice of baseline will be validated with focus on whether the baseline is a likely scenario, whether the project itself is not a likely baseline scenario, and whether the baseline is complete and transparent.					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	1-12, 37, 39	DR, I	Yes, the discussion and determination of the chosen baseline is mainly transparent. But additional scenarios should be discussed (for example: the possibility of utilising the equipment already bought (in 1996) and available at the Hydrolytic Plant; utilisation of gas; upgrading of the existing system) in the PDD (Draft JI-PDD format section B). The different baselines should be elaborated more transparently and it should be made clear why business as usual would be the only realistic scenario (baseline) in the absence of the project. **Clarification Request No. 4:** The discussion, determination and application of the chosen baseline have to be elaborated more transparently and detailed using the current valid draft JI-PDD format.	**CR 4**	☑

* MoV = Means of Verification, DR= Document Review, I= Interview

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.2.2. Has the baseline been determined using conservative assumptions where possible?	1-12, 37, 39	DR, I	Yes, the baseline has mainly used conservative assumptions in all aspects. But this has to be elaborated more detailed under consideration of the CRs 1, 3 and 4 as well as CARs 3, 4. (Important: Use the current valid versions of the applied methodologies taking into account the information given concerning "baseline" in these methodologies). Furthermore it has to be made clear in the PDD which are the basic assumptions for the development of the baseline (emissions) – is this the coal consumption of the last years or only the consumption of coal considered for a limited period of 8 months. In which points is the calculation/estimation of the methane emissions of the deposited bark, sawdust conservative – if available a study should be added to the PDD to demonstrate that the assumptions concerning the baseline methane emissions are calculated in a really conservative manner. It is not possible to re-trace the baseline emissions in the PDD (this is only with using the additional .xls sheets and the subjacent	**CAR 5**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			formula). But it should be possible only using the PDD as singular document to see which is the calculation of the baseline emissions – analogous to the table A.4.3.1 for the emission reductions tables for the annual baseline emissions (and also project emissions, furthermore emissions reduct-ions as the difference) should be included in the PDD). **Corrective Action Request No. 5:** The baseline has to be adjusted and elaborated more detailed (using the current valid versions of the applied methodologies). The conservativeness of the assumptions has to be demonstrated much more detailed and clear.		
B.2.3. Has the baseline been established on a project-specific basis?	1-12, 14, 37, 39	DR, I	Yes the baseline(s) is (are) established in a project specific manner. The baseline, which has to be recalculated ex-post, refers to the annual heat output of the boilers (biomass boilers), the required biomass input (taking into account specific parame-ters like specific weight, CH_4 -emission factor of the biomass, boiler efficiency) and the corresponding demand on coal to	**CAR 3 - 4, CR 4**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			produce the same amount of heat (again taking into account specific characteristics of the coal and coal boilers such as the energy content and the carbon emission factor of the coal and the coal boiler efficiency). But this has to be elaborated more transparently (see CARs 3 - 4) and CR 4.		
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1-12, 17-21, 37, 39	DR, I	Yes, the baseline does take into account the major national and/or sectoral policies, macro-economic trends and political developments. But the relevant key factors, their impact on the baseline and the project risks have to be elaborated a little bit more detailed – again using the Draft JI-PDD format. **Clarification Request No. 5:** A description and discussion of key factors for the project has to be included in the revised PDD.	**CR 5**	☑
B.2.5. Is the baseline determination compatible with the available data?	1-12, 37, 39	DR, I	Yes, generally the baseline determination is compatible with available data.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.2.6. Does the selected baseline represent a likely scenario in the absence of the project?	1-12, 37, 39	DR, I	Yes, the project does represent a likely scenario in the non project case – under the pre-requisite that all predictions given and asked for clarification here are as stated in the documentation – see also CR 4 and 5 as well as CAR 4.	☑	☑
B.2.7. Is it demonstrated that the project activity itself is not a likely baseline scenario (e.g. through (a) a flow-chart or series of questions that lead to a narrowing of potential baseline options, (b) a qualitative or quantitative assessment of different potential options and an indication of why the non-project option is more likely, (c) a qualitative or quantitative assessment of one or more barriers facing the proposed project activity or (d) an indication that the project type is not common practice in the proposed area of implementation, and not required by a Party's legislation/regulations)?	1-12, 14, 37, 39	DR, I	The assessment team has found indicative evidence that demonstrates that the project is not a business as usual project. The given explanation - regarding significant barriers under step 3 - that there is a lack of funds as well as technological barriers (this type of biomass boilers currently is not available from production in Russia) and pre-availing practice (there is no experience with this technology in Russia; the utilisation of biomass for district heating in this amount is new in Russia) indicate that the project is additional. But the argumentation should follow more strictly the attachment A to Appendix B of the small scale project activities: Link: http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_%20AttachmentA.p	**CR 6**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			df **Clarification Request No. 6:** The "additionality test" for small scale project activities should be used and elaborated more clearly (in a separate chapter using the Draft JI_PDD format). The argumentation should be illustrated in figures.		
B.2.8. Have the major risks to the baseline been identified?	1-12, 37, 39	DR, I	Yes, but not clear enough. See CR 5.	**CR 5**	☑
B.2.9. Is all literature and sources clearly referenced?	1-12, 37, 39	DR, I	No, not detailed enough. The sources of the applied data in most cases are mentioned (for example GHG inventory of the Archangelsk Oblast), but a more detailed reference (full title of the document, year of publishing, chapter and page should be included – maybe with a reference in the PDD to a separate annex literature and sources). **Clarification Request No. 7:** Literature and sources should be referenced in a more scientific way.	**CR 7**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
C. Duration of the Project/ Crediting Period It is assessed whether the temporary boundaries of the project are clearly defined.					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1-12, 37, 39	DR, I	Yes, the project starting date is clearly defined. The operational lifetime of the project is announced to be more than 21 years (annotation: please delete the information of under C.1 as this is only the headline). Evidence for this statement – for example information or a guarantee from the supplier of the biomass boiler equipment – should be given in the PDD. **Clarification Request No. 8:** Transparent evidence for the stated operational lifetime of more than 21 years should be given.	**CR 8**	☑
C.1.2. Is the project's crediting time clearly defined?	1-12, 37, 39	DR, I	No, the crediting period is not clearly defined, only the starting date for the crediting period is clear (January 1st, 2008). It should be explained (elaborated more detailed in the draft JI-PDD format) that in principle a crediting period of 7 years has	**CR 9**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			been chosen (which can be renewed two times) according to the regulations for CDM projects. Currently only a crediting period of 5 years (2008 – 2012) corresponding with the first commitment period of the Kyoto protocol is possible as the future of JI is not clear in a post-Kyoto system. According to the proceeding in this JI project only the first seven years should be figured out in the calculation of emission reductions as in case of a 7 year crediting period the baseline has to be adjusted at the end of the first period. And the first 5 years (2008 – 2012) should be highlighted as they coincide with the first commitment period of the Kyoto Protocol. Only in these 5 years from 2008 – 2012 currently ERUs can be earned as there are currently no rules for a JI system beyond Kyoto. **Clarification Request No. 9:** The chosen crediting period has to be corrected, and in consequence also the illustration of the emission reductions in the		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			PDD referring to the chosen period has to be adjusted.		
D. Monitoring Plan The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed.					
D.1. Monitoring Methodology It is assessed whether the project applies an appropriate baseline methodology.					
D.1.1. Does the monitoring methodology reflect good monitoring and reporting practices?	1-12, 24, 25, 37, 39	DR, I	Yes, the monitoring methodology does reflect current good practice in the main. As already described under B.1.1 there is no requirement that an approved CDM-methodology has to be applied in JI projects. Thus the project developer consequently has developed a project-specific baseline for this large-scale JI project mainly based the approved methodologies for small scale CDM projects AMS-III.B "Switching fossil fuels" (version 6 from September 30th, 2005) and AMS-III.E "Avoidance of methane	**CR 10**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			production from biomass decay through controlled combustion" (elements of version 7 from November 28th, 2006 and version 8 from March 3rd, 2006). But the monitoring plan has to be elaborated much more detailed on basis of the last decisions of the small scale working group, of the JI Supervisory committee and of the EB. A separate monitoring plan (demonstrating all monitored parameters, the method of monitoring, information concerning meters, calibration, uncertainties etc.) additional to chapter D of the revised PP should be developed. See information under http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_gnal_guid.pdf and http://cdm.unfccc.int/Reference/Guidclarif/EB23_%20para%2024_guidance_monitoring.pdf. Furthermore the monitoring plan should be based on the current valid versions of the applied small scale CDM methodologies AMS-III.B and AMS-I.E.		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Clarification Request No. 10: The monitoring plan has to be adjusted and elaborated much more detailed. The power consumption should be included in the monitoring plan according to the current valid version of AMS-III.E.		
D.1.2. Is the selected monitoring methodology supported by the monitored and recorded data?	1-12, 25, 37, 39	DR, I	Yes, the monitoring methodology is clearly supported by the monitored and recorded data (parameters 1-17 – tables D.3.2, D.3.3 and D.3.4).	☑	☑
D.1.3. Are the monitoring provisions in the monitoring methodology consistent with the project boundaries in the baseline study?	1-12, 25, 37, 39	DR, I	Yes, basically the monitoring provisions are in line with the project boundaries. But see CR 1-2 and CR 10.	**CR 10**	☑
D.1.4. Have any needs for monitoring outside the project boundaries been evaluated and if so, included as applicable?	1-12, 25, 37, 39	DR, I	There are no direct needs to include parameters from outside the project boundaries in the monitoring concept. Cross-checks of the monitored data can be carried out on basis of the delivered and	**CR 10**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			sold heat (to the consumers) and on basis of the produced biomass of Onega Sawmill. This point has to be elaborated more detailed.		
D.1.5. Does the monitoring methodology allow for conservative, transparent, accurate and complete calculation of the ex post GHG emissions?	1-12, 25, 37	DR, I	In principle, yes. But this has to be elaborated and demonstrated more detailed - see also CR 10. All data used in the monitoring concept have to be clearly stated and referred to sources.	**CR 10**	☑
D.1.6. Is the monitoring methodology clear and user friendly?	1-12, 25, 37	DR, I	Yes, the monitoring methodology is clear and user friendly precondition that the CRs/CARs mentioned above are solved.	☑	☑
D.1.7. Does the methodology mitigate possible monitoring errors or uncertainties addressed?	1-12, 25, 37	DR, I	Yes, procedures for mitigating possible monitoring errors and/or uncertainties can be included – see CR 10. Monitoring errors and uncertainties should be included in the monitoring plan.	**CR 10**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.2. Monitoring of Project Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
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?	1-12, 25, 37	DR, I	Yes, basically the monitoring provisions are in line with the project boundaries – but see CR 1 and CR 10 as well as CAR 3 and 4.	**CR 1, CR 10, CAR 3 - 4**	☑
D.2.2. Are the choices of project GHG indicators reasonable?	1-12, 25, 37	DR, I	Yes, generally the choice of the indicators is reasonable - but see also CR 1, CR 10 and and CR 3 - 4.	CR 1, CR 10, CR 3-4	☑
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	1-12, 25	DR, I	Yes, all indicated GHG parameters can be monitored and/or measured.	☑	☑
D.2.4. Will the indicators enable comparison of project data and performance over time?	1-12, 25, 37	DR, I	Yes – under the precondition that the CRs, CARs mentioned above will be solved. This aspect has to be elaborated more detailed in the revised PDD.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.3. Monitoring of Leakage It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1-12, 25, 37	DR, I	No. This is not necessary as leakage needs not to be considered under AMS-III.B and AMS-I.E under the framework of this project. But the aspect leakage has to be at least discussed in the revised PDD according to the current valid versions of the applied methodologies. Furthermore it has to be discussed in which way leakage has to be considered in this project independent from the requirements for small scale CDM projects as there could be other leakage effects for a Large scale JI project than for a small scale CDM project which need to be considered in this case. **Clarification Request No. 11:** "Leakage" has to be discussed more detailed in the revised PDD.	**CR 11**	☑
D.3.2. Have relevant indicators for GHG leakage been	1-12,	DR,	See comment above.	**CR 11**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
included?	25, 37	I			
D.3.3. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	1-12, 25, 37	DR, I	See comment above.	**CR 11**	☑
D.3.4. Will it be possible to monitor the specified GHG leakage indicators?	1-12, 25, 37	DR, I	See comment above.	**CR 11**	☑
D.4. Monitoring of Baseline Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
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?	1-12, 25, 36, 37	DR, I	A direct monitoring of the baseline emissions is not required. The baseline emissions can be recalculated ex-post – this has to be highlighted in the revised PDD.	☑	☑
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	1-12, 25,	DR, I	See comment above.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	36, 37				
D.4.3. Will it be possible to monitor the specified baseline indicators?	1-12, 25, 36, 37	DR, I	See comment above.	☑	☑
D.5. Monitoring of Environmental Impacts It is checked that choices of indicators are reasonable and complete to monitor sustainable performance over time.					
D.5.1. Does the monitoring plan provide for the collection and archiving of relevant data on environmental impacts?	1-12, 25, 36, 37	DR, I	No negative environmental impacts are expected according to the PDD.. **Clarification Request No. 12:** It has to be discussed whether the biomass boiler can cause higher particle, NO_x and CO emissions in comparison to the status-quo. Furthermore it should be assessed in which way socio-economic effects of the project should be included in the monitoring plan.	**CAR 12**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.5.2. Will it be possible to monitor the specified environmental impact indicators?	1-12, 25, 37	DR, I	The necessity to monitor additional environmental parameters has to be checked.	**CR 12**	☑
D.6. Project Management Planning It is checked that project implementation is properly prepared for and that critical arrangements are addressed.					
D.6.1. Is the authority and responsibility of project management clearly described?	1-12, 25, 37	DR, I	The PDD does clearly describe the responsibilities between the different project participants. The correctness of the respective roles could already be confirmed during the audit on site. The responsibilities have to be included in the revised monitoring plan – see CR 10.	**CR 10**	☑
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1-12, 25, 37	DR, I	Yes, the PDD does clearly describe the responsibilities of the different project participants.	☑	☑
D.6.3. Are procedures identified for training of monitoring personnel?	1-12, 25, 37	DR, I	The personnel of Onega Energy will for the day to day operation of the plant received extensive training.	☑	☑

* MoV = Means of Verification, DR= Document Review, I= Interview

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.6.4. Are procedures identified for emergency preparedness where emergencies can result in unintended emissions?	1-12, 25, 37	DR, I	Yes, procedures are clearly identified and described in the PDD, but have to be elaborated more detailed in the revised PDD – see CR 10.	**CR 10**	☑
D.6.5. Are procedures identified for calibration of monitoring equipment?	1-12, 25, 37	DR, I	Yes, respective procedures are clearly and transparently identified and described.	☑	☑
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?	1-12, 25, 37	DR, I	Yes, procedures for the maintenance of monitoring equipment and installations could be observed on site and are partly described in the PDD, but have to be elaborated more detailed in the monitoring plan for the revised PDD – see CR 10.	**CR 10**	☑
D.6.7. Are procedures identified for monitoring, measurements and reporting?	1-12, 25, 37	DR, I	Yes, respective procedures are identified and described but have to be elaborated more detailed in the monitoring plan for the revised PDD – see CR 10.	**CR 10**	☑

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
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)?	1-12, 25, 37	DR, I	Yes, respective procedures are identified and described but have to be elaborated more detailed in the monitoring plan for the revised PDD – see CR 10.	**CR 10**	☑
D.6.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	1-12, 25, 37	DR, I	Yes, respective procedures are identified and described and could be observed on site but have to be elaborated more detailed in the monitoring plan for the revised PDD – see CR 10.	**CR 10**	☑
D.6.10. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	1-12, 25, 37	DR, I	Yes, the monitoring assigns responsibilities for such audits but have to be elaborated more detailed in the monitoring plan for the revised PDD – see CR 10.	**CR 10**	☑
D.6.11. Are procedures identified for project performance reviews?	1-12, 25, 37	DR, I	Yes, the monitoring assigns responsibilities for such performance reviews but have to be elaborated more detailed in the monitoring plan for the revised PDD – see CR 10.	**CR 10**	☑
D.6.12. Are procedures identified for corrective actions?	1-12, 25, 36,	DR, I	Currently not – this has to be elaborated more detailed in the monitoring plan for the revised PDD – see CR 10.	**CR 10**	☑

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	37				
E. Calculation of GHG Emissions by Source It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.					
E.1. Predicted Project GHG Emissions The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	1-12, 15-16, 17, 19-21, 22-23, 28, 32-33, 36, 37,	DR, I	Yes, all aspects are covered. Emissions of CO_2, CH_4 and N_2O have been assessed and are considered in the PDD. Also NH_4 is mentioned in chapter B.3 – this seems to be mistaken. **Clarification Request No 13:** The non-GHG gas NH_4 should be excluded from the PDD, the relevant gases for this project should be described clearly in the revised PDD (using Draft JI-PDD format). The emission reductions related to old biomass already stored at the existing stockpile has to be re-calculated; evidence	**CR 13**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	39		for the used assumptions in the applied formula should be included in the final PDD.		
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	1-12, 32-33, 37, 39	DR, I	Yes, the PDD with annexes (.xls sheets for the calculations) gives a complete and transparent calculation of the project GHG emissions under the precondition that all mentioned CARs and CRs are solved in the revised PDD.	☑	☑
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1-12, 32-33, 37, 39	DR, I	Mainly yes, but this cannot be confirmed finally –see CR 3, CR 4 and CAR 5.	☑	☑
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	1-12, 32-33, 37, 39	DR, I	No, but this should be the case after solving all CRS, CARS.	☑	☑

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?	1-12, 32-33, 36, 37, 39	DR, I	Yes, Emissions of CO_2, CH_4 and N_2O have been assessed.. Direct on site emissions from fuel combustion are covered as being within the project boundary (after the revision of the project boundaries) as well as emissions from the decay of biomass. Furthermore transport emissions should be discussed when using the current valid versions of the small scale methodologies AMS-III.B and AMS-III.E. Heat (energy)/ Fuel combustion/ Heat supply industries is the relevant sectors/source category. <u>Annotation:</u> Transport emissions are now included in the final PDD.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.2. Leakage Effect Emissions It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	1-12, 37	DR, I	No, this is not necessary for this project according to the applied methodologies – nevertheless the aspect leakage should be elaborated more detailed. See also CR 11.	**CR 11**	☑
E.2.2. Have these leakage effects been properly accounted for in calculations?	1-12, 37	DR, I	See comment above.	**CR 10**	☑
E.2.3. Does the methodology for calculating leakage comply with existing good practice?	1-12, 37	DR, I	See comment above.	**CR 10**	☑
E.2.4. Are the calculations documented in a complete and transparent manner?	1-12, 37	DR, I	See comment above.	**CR 10**	☑
E.2.5. Have conservative assumptions been used	1-	DR,	See comment above.	**CR 10**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
when calculating leakage?	12, 37	I			
E.2.6. Are uncertainties in the leakage estimates properly addressed?	1-12, 37	DR, I	See comment above.	**CR 10**	☑
E.3. Baseline Emissions The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	1-12, 22-23, 34, 37	DR, I	Yes, under the precondition that all CARs/ CRs mentioned above will be solved.	☑	☑
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	1-12, 22-23, 29, 32-33, 36, 37,	DR, I	Yes, under the precondition that all CARs/ CRs mentioned above will be solved.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	39				
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	1-12, 22-23, 29, 32-33, 34, 36, 37, 39	DR, I	Yes, under the precondition that all CARs/ CRs mentioned above will be solved.	☑	☑
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	1-12, 34, 36, 37, 39	DR, I	Yes, under the precondition that all CARs/ CRs mentioned above will be solved.	☑	☑
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	1-12, 34, 37	DR, I	Yes, under the precondition that all CARs/ CRs mentioned above will be solved.	☑	☑
E.3.6. Have the project baseline(s) and the project emissions been determined using the same	1-12,	DR, I	Yes, under the precondition that all CARs/ CRs mentioned above will be solved.	☑	☑

* MoV = Means of Verification, DR= Document Review, I= Interview

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
appropriate methodology and conservative assumptions?	34, 36, 37				
E.4. Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1-12, 34, 37, 39	DR, I	Yes, it is clearly, transparently and re-traceably demonstrated in the PDD that the project will result in fewer GHG emissions than the baseline scenario.	☑	☑
F. Environmental Impacts Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	1-7, 13, 18, 26, 30, 36,	DR, I	Yes, the description of the environmental impacts is sufficient in the most. But the aspect air pollution (emissions) of particles, N2O and CO should be described more detailed – see CR 12.	**CR 12**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	37				
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1-7, 26, 30, 36, 37	DR, I	Yes, there are requirements in the host country and the approval process is going on. A first positive feedback from the authorities has been received and was confirmed during the visit on site. See also comments in chapter F.1.	☑	☑
F.1.3. Will the project create any adverse environmental effects?	1-7, 26, 30, 36, 37	DR, I	No, the project probably will not create any adverse environmental effects – but see CR 12.	**CR 12**	☑
F.1.4. Are transboundary environmental impacts considered in the analysis?	1-7, 26, 30, 36, 37	DR, I	No. Transboundary environmental impacts are considered not relevant for this project as the project site is far away from any state boundaries.	☑	☑
F.1.5. Have identified environmental impacts been addressed in the project design?	1-7, 26, 30,	DR, I	Yes. See comments in table F.11. of the PDD.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	36, 37				
F.1.6. Does the project comply with environmental legislation in the host country?	1-7, 26, 30, 36, 37	DR, I	Yes, the project does comply with the environmental legislation in the Russian Federation. See also comments in chapter F.1.	☑	☑

Table 3: Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
CAR No. 1: LOAs from both involved countries, Russia (host country) and Germany have to be submitted to the validator before starting the registration process for this JI project at the JI-Supervisory Committee.	Table 1, 1	No documents can be been submitted at this stage of the project. But Letters of Endorsement from Russian and German Ministries have been added to the final PDD (see PDD, chapter A.5 and Annexes 12 and 13).	The CAR still has to be seen as being open, but is treated as an outstanding issue as it is currently not directly under the control of the project participants. By the time the corresponding document is submitted, the final determination opinion can be issued and the registration process for this project at the JI Supervisory Committee can be started,
CAR No. 2: Russia has to install a DNA and G&Ps before the project can apply for registration at the JI Supervisory committee..	Table 1, 5	This CAR is out of the influence of the project participants.	The CAR still has to be seen as being open, but is treated as an outstanding issue as it is not directly under the control of the project participants.
CAR No. 3: A clear, re-traceable, transparent and consistent description of the project boundaries should be included in the revised PDD.	A.1.1	A detailed description has been added in the revised PDD and a map illustrating the boundaries has been submitted as a separate document to the validator.	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
Furthermore a figure illustrating these boundaries should be added.			
CAR No. 4: The PDD shall be reformatted according to the Draft PDD for JI projects published on UNFCCC´s JI website. Furthermore the foreword in the PFF should be actualised.	A.1.1	The PDD has been reformatted according to the current available/valid draft JI PDD version (version 1) with an explaining note in the foreword of the PDD.	☑
CR No. 1: The definition of the project´s system boundaries has to be adjusted.	A.1.2	Project boundaries have been adjusted and elaborated more detailed in the revised PDD to take into account the current valid versions of the applied methodologies.	☑
CR No. 2: The aspect training and maintenance has to be elaborated more detailed in the revised PDD. A prospective time schedule and the amount of time for trainings and maintenance should be included in	A.2.4.	In this case, the project developer assumes that for a Small-Scale JI Projects (and in this case small scale methodologies have been applied) the presented description of required training is sufficient and no further detail will be requested in the future JI SS PDD.	☑ The validator can agree to this argumentation as far as there is no final guidance from the JI Supervisory Committee how to elaborate a training concept/schedule for this type of projects.

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
the PDD.			
CR No. 3: The discussion, selection and application of the small scale methodologies AMS-III.B and AMS-III.E should base on the current valid versions of these methodologies taking furthermore into account additional decisions and guidance of the EB in the last weeks. **Clarification Request No. 3:** The discussion, selection and application of the small scale methodologies AMS-III.B and AMS-III.E should be based on the current valid versions of these methodologies taking furthermore into account additional decisions and guidance of the EB in the last weeks. The following points should be considered in the PDD:	B.1.1	The project owner and project developer are aware that the project in its character and in its size is a large-scale JI project. But as no adequate large scale methodology is directly applicable for this type of project alternatively two small scale methodologies (AMS-II.B and AMS-II.E) have been applied in this project. Due note has been taken regarding the use of current versions of the mentioned methodologies and general guidance. The only relevant exception in this project is the mentioned calculation of methane following the Version 7 of AMS III-E, for technical reasons outlined in the foreword of the PDD. Furthermore version 6 of AMS-III.B (for small scale CDM projects) has been used and not the current valid version 8, but in this case this is not of major influence for	☑ It has to be kept in mind that the application of two small scale CDM-methodologies for this project which is (in the sense of the definitions under the CDM) in core a large scale project is based on missing large scale methodologies for this project type. The validator goes confirm with the approach of the validator as JI rules allow the application of project specific methodologies. There is no regulation that the project developer strictly has to follow the CDM methodologies.

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
1. General Guidance for SSC projects (see especially the points under monitoring): Link: http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_gnal_guid.pdf 2. New Requirements for the monitoring concept: Link: http://cdm.unfccc.int/Reference/Guidclarif/EB23_%20para%2024_guidance_monitoring.pdf 3. Conservativeness in calculating methane emissions: Link: http://cdm.unfccc.int/Reference/Guidclarif/EB23_%20para%2027_guidance_avoided_methane. pdf. 4. Furthermore it has to be demonstrated in which points and why the methodologies deviate from		the calculations in this project. <u>Important annotation:</u> It has to be kept in mind that the application of two small scale CDM-methodologies for this project which is (in the sense of the definitions under the CDM) in core a large scale project is only based on missing methodologies for this type of projects.	

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
the SCC-CDM methodologies. 5. It has to be clearly stated in the PDD that the project in its character and in its size is a large-scale JI project. But as there are currently no adequate large scale methodologies directly applicable for this type of project alternatively two small scale baseline and monitoring methodologies under the CDM have been applied for this project.			
CR No. 4: The discussion, determination and application of the chosen baseline have to be elaborated more transparently and detailed using the current valid draft JI-PDD format.		This section (B.2 in the utilised valid draft JI-PDD format of the final PDD) has been amended and should be sufficiently detailed especially for a small-scale project.	☑ The validator can accept this argumentation of the project developer.
CAR No. 5: The baseline has to be adjusted and elaborated more detailed (using the current valid versions of the applied	B.2.2.	The baseline has been corrected and elaborated much more detailed. An analysis of IFAS regarding the real amounts of avoided methane emissions has	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
methodologies). The conservative-ness of the assumptions has to be demonstrated much more detailed and clearly.		been submitted to the validator as annex 8 of the final PDD. The ex-ante calculation for the development of the baseline emissions is now based on an average coal based heating 2002-2005. Retracing the baseline emissions from the PDD formulas is - even after aggregating information - only possible in broad terms. For the many details and for a full under-standing, the Excel spreadsheets have been submitted to the validator.	
CR No. 5: A clear, transparent and re-traceable description and discussion of key factors for the project has to be included in the revised PDD.	B.2.4.	National, sectoral policies and macro-economic trends have been elaborated more detailed and are included and taken into account in chapter A.4.3. of the final revised PDD.	☑
CR No. 6: The "additionality test" for small scale project activities should be used and elaborated more clearly (in a separate chapter using the Draft	B.2.7	The section B.2 of the PDD has been elaborated more detailed and improved taking into account the proposed barriers of Attachment A to Appendix B.	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
JI_PDD format). The argumentation should be illustrated in figures/ tables.			
CR No. 7: Literature and sources should be referenced in a more scientific way.	B.2.9	A reference list with all literature used for developing the PDD has been added to the final revised PDD (also mentioned in the footnotes of the relevant pages).	☑
CR No. 8: Transparent evidence for the stated operational lifetime of more than 21 years should be given.	C.1.1	Additional information and evidence from the supplier has been sent to the validator.	☑
CR No. 9: The chosen crediting period has to be corrected, and in consequence also the illustration of the emission reductions in the PDD referring to the chosen period has to be adjusted.	C.1.2	The crediting period has been elaborated and explained more detailed.	☑
CR No. 10: The monitoring plan has to be	D.1.1	Additions were made to the fairly compre-hensive monitoring section of the PDD	The monitoring plan is now much more detailed elaborated and fits the require-

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
adjusted and elaborated much more detailed. The power consumption should be included in the monitoring plan according to the current valid version of AMS-III.E.		(which could be used as a basic monitoring plan), founded on current valid versions of the AMS III B and AMS III E. A monitoring plan has been submitted as annex 3 of the final PDD.	ments concerning monitoring in the newest EB-decisions (EB 23). ☑
CR No. 11: "Leakage" has to be discussed more detailed in the revised PDD.	D.3.1.	The necessary discussion is included in chapter D.1.3. of the final revised PDD.	☑
CR No. 12: It has to be discussed whether the biomass boiler can cause higher particle, NO_x and CO immissions in comparison to the status-quo.	D.5.1	As this type of boiler is used in many European countries even with stricter environmental rules than currently in Russia, the level of NOx, CO and dust does not present/ cause any problems. Levels of NOx and CO of the very old coal boilers are not available, but are surely less favourable than with the new equipment.	The validator can agree to this argumentation. ☑
CR No 13: The non-GHG gas NH_4 should be excluded from the PDD, the relevant gases for this project should be described clearly in the revised PDD (using Draft JI-PDD format).	E.1.1	The mistake has been corrected. This was a typing error meaning CH_4. The PDD and the calculations have been updated accordingly.	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
The emission reductions related to old biomass already stored at the existing stockpile has to be re-calculated; evidence for the used assumptions in the applied formula should be included in the final PDD.			
Issues to be clarified outside of the questions in the protocol			
a) What happens with the existing equipment (Hydrolectric power plant) – will the boilers be sold and demolished or will they remain as stand-by equipment.		This is not decided yet.	☑ This can be accepted by the validator as there currently is no direct influence of this decision on the project. But in case these boilers are used as stand-by equipment the utilization of these boilers has to be monitored.
b) The foreword has to be actualized.		This has been done in the revised final PDD.	☑
c) It should be explained that the old equipment although it is outdated still could run 10 more years.		The requested additional information (on basis of test by state authorities) is included in chapter A.4.3 of the final revised PDD.	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
d) The table project participants in chapter A.3 should be adjusted (correct party, correct identification as project participant)		See chapters A.3 and also Annex 1 of the final PDD.	☑
e) The current existing grid system in Onega should be explained: • How many grids • Interconnections existing etc.		The situation is that from the 23,000 inhabitants of Onega, 12,000 depend on the Hydrolytic Power plant. The other 11,000 are supplied by several smaller grids based on heavy oil (Mazut) boilers or have their own individual heating.	☑
f) According to the information on-site there is a (currently not used) grid interconnection existing between the heat/steam grid of Onega Sawmills (heat generation also mostly based on biomass) and the grid in the project. It should be ensured that the potential interconnection of these two grids is excluded in the project case or that an interconnection between these		An appropriate note has been inserted into section D.1.1.	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
grids can be monitored and thus considered in the calculations.			
g) it should be illustrated that there is still an excess of biomass although parts of the biomass from Onega Sawmills are used for the heating in their own grid and now also a major amount is used for the project.		The excess of fresh biomass depends on the future capacity of Onega sawmills. But taking into account the existing huge stockpile, this excess of available biomass has been pointed out in section D.1.3.	☑ But the utilisation of biomass from the existing stockpile and the related assumptions for the calculations of emission reductions needs to be elaborated a little bit more detailed.
h) It has to be confirmed that there have not been major or relevant fires in the stockpiles in the last ten years.		A request for confirmation will be sent to the Russian Project Developer.	☑ The note still has to be submitted to the validator.
i) It has to be demonstrated that the old equipment still has the ability to produce the amount of heat as required in the project case.		As the coal boilers are still working, there is no reason to doubt that the average heat output of the years 2002-2005 cannot be provided. Especially because there is an only partly used overcapacity due to the shut down of the hydrolytic process.	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
j) It has to be included that there are only households and no industrial users connected to the grid in project case		This has been clarified in section A.4.2 of the final revised PDD.	☑
k) the number 7 MW for the Diesel Boiler on page 6 has to be corrected (correct is 9 MW)		This has been corrected (see now page 7 of the final revised PDD).	☑
l) Evidence for the moister content of the biomass should be given (labor analysis results)		The value of 55% water content has been communicated by Onega Sawmills and presents the average over the whole year. However, in the course of the monitoring, the water content of the fuel wood will be measured weekly during the first year (see ID-Nr. 9 in section D.1.1.1).	☑
m) the article in the newspaper after the first (October) parliament meeting should be added as annex (if available) – at least the concrete date of this publishing		The articles have been included in the final revised PDD (Annex 14)	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
should be mentioned			
n) which company will have the rights on the ERUs?		Principally the newly founded Onega Energy JSC will have the rights on the ERUs. Details are still to be determined until starting the registration process for this project.	☑
o) what happens in maintenance periods: • Utilization of the diesel boilers?		Maintenance periods will be normally confined to the summer period, when one of the 17 MW boilers can be maintained while the second 17 MW boiler is working. But in case of necessity, the 9 MW diesel boiler can also be used.	☑
p) are additional pumps required for the project?		No additional pumps are needed for the ex-ante scenario as the total energy delivered to the households is the same as in the past. If in future the energy (heat) demand should increase additional pumps may be needed. Annotation from the validator: In this case the monitoring plan has to be	☑

Draft report clarifications and corrective action requests	Ref. to checklist question in table 1 and table 2	Summary of project owner response	Determination conclusion
		adjusted accordingly.	

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Annex 2 of 2

Industrie Service

Determination Reference List

Reference No.	Document or Type of Information
1	On-site interview in the office of "JSC Onega Sawmill" in Onega on March 30th, 2006 and March 31st, 2006 with the project developers and representatives of the project owner by auditing team of TÜV SÜD: **Validation team on-site:** Thomas Kleiser — TÜV SÜD Industrie Service GmbH, Munich (lead-auditor) Olga Mikhaylyuk — TÜV SÜD Industrie Service GmbH, Moscow office (local expert) **Interviewed persons:** Ksenia Brockmann — GfA Terra Systems GmbH, Hamburg (Coordinator Eastern Europe) Marianne Zandersen — GfA Consulting Group, Hamburg (consultant GfA Envest) Alexander Doykov — JSC "Onega Sawmills" (vice general director, responsible for all activities on behalf of the new company Onega Energy JSC)
2	On-site interview in the office of "JSC Onega Sawmill" in Onega on March 30th, 2006 with representatives from the investor side **Validation team on-site:** Thomas Kleiser — TÜV SÜD Industrie Service GmbH, Munich (lead-auditor) Olga Mikhaylyuk — TÜV SÜD Industrie Service GmbH, Moscow office (local expert) **Interviewed persons:** Pavel V. Yakovlev — Orimi Conzern, St. Petersburg (vice-president) Alexander Doykov — JSC "Onega Sawmills" (vice general director, responsible for all activities on behalf of the new company Onega Energy JSC)
3	On-site interview in the town-hall of the municipality "Onega"

Reference No.	Document or Type of Information
	Validation team on-site: Thomas Kleiser — TÜV SÜD Industrie Service GmbH, Munich (lead-auditor) Olga Mikhaylyuk — TÜV SÜD Industrie Service GmbH, Moscow office (local expert) **Interviewed persons:** Alexej Nekrasov — Municipality Onega (first deputy municipal councillor)
4	Site-visit (district heating system, existing boiler houses of Onega municipality; pipeline system, Onega sawmill, landfill site, hydrolytic plant, existing biomass boilers of Onega sawmill) on March 31st, 2006 **Validation team on-site:** Thomas Kleiser — TÜV SÜD Industrie Service GmbH, Munich (lead-auditor) Olga Mikhaylyuk — TÜV SÜD Industrie Service GmbH, Moscow office (local expert) **Interviewed persons:** Alexander Doykov — JSC “Onega Sawmills” (vice general director, responsible for all activities on behalf of the new company Onega Energy JSC)
5	Draft PDD of “Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia”, submitted February 27th, 2006
6	Draft Final PDD of “Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia”, submitted March 10th, 2006, published in the Global Stakeholder Process from March 10th, 2006 to April 8th, 2006
7	Preliminary Final PDD of “Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia”, submitted June 24th, 2006
8	Validation and Verification Manual, IETA/World Bank (PCF), http://www.vvmanual.info

Reference No.	Document or Type of Information
9	Approved small scale methodology AMS-III.B – Switching fossil fuel - version 6 of October 12th, 2005 (baseline and monitoring methodology)
10	Approved small scale methodology AMS-III.E – Avoidance of methane production from biomass decay through controlled combustion - version 7, valid from November 28th, 2005 and version 8, valid from March 3rd, 2006 (baseline and monitoring methodology)
11	IPCC: Revised 1996 Guidelines for National Greenhouse Gas Inventories, Reference Manual, Table 1- 13, page 1.45
12	IPCC: 2000, Good Practice Guidance
13	Feasibility Study from Energy Efficiency Fund of Archangelsk Region (2005): Title: “Reconstruction of a heating system in the town of Onega, Archangelsk Region”
14	UNFCCC, CDM: “Tool for the demonstration and assessment of additionality” approved by the EB (EB 16, annex 1).
15	Archangelsk Oblast (200), Average GHG emission factors for several types of fuel and changes of GHG Emissions in the region by replacement of fuels
16	Batalov, A., Samorodov A., Yulkin M. (2000): Climate Change Mitigation: GH Inventory and Control in Archangelsk Oblast
17	Ministry of Economic Affairs of the Netherlands (2003): Operational Guidelines for Project Design Documents of Joint Implementation projects Volume 1: General guidelines, Version 2.2, The Netherlands and TOR for ERUPT-4 Tender (2004)
18	Order of the State Committee of the Russian Federation for Environmental Protection (15.04.2000#371): “On the Approval of the regulations on the assessment of the impact of the planned economic and other activity on the environment of the Russian Federation”
19	Onega Municipality and Onega District (2005): “Statement of the Budgetary Performance of Onega Municipality and Onega District”, annual reports 2003 – 2005
20	Onega Sawmills (2005a): “Wood-wastes to deposit during 2003 – 2005”, document as paper copy and electronic copy

Reference No.	Document or Type of Information
21	Onega Sawmills (2005b): “delivery of saw logs in 2005 to Onega sawmills”, paper copy
22	PKTS (2005a): Fuel consumption and heat output of Hydrolytic Thermal plant 2002 – 2005, annual reports on paper form
23	PKTS (2005b): Households data on heat supply through the boiler house of Hydrolytic Thermal Plant, Status, 1st, January 2005
24	Wartsilä Biopower Oy, Bioenergy Solutions from Wartsila, Finland, 2004 - technical description
25	Monitoring Plan (Annex 3) for “Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia”, May 2006
26	Letter of Endorsement, issued January 19th, 2006 by Ministry of Economic Development and Trade of Russian Federation
27	Finance Plan for “Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia”, developed and issued 2005
28	Information on “Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia”, JI project in local newspapers, January 17th, 2006
29	Map illustrating the project boundaries (annex 16), May 2006
30	Copies of all technical permissions and approvals for the project, May 2006 (included in annex 6)
31	Comments from the local Stakeholder Process, first presentation October 20th, 2005 and second presentation February 7th – 8th, 2006
32	Results from measurements of Methane emissions in February 2006, IFAS - Ingenieurbüro für Abfallwirtschaft (consultants for waste management), Hamburg
33	Expert Opinion on methane emissions that emerge from controlled combustion or landfilling of wood waste (in this case the wood waste landfill (bark and sawdust) in Onega), issued by IFAS - Ingenieurbüro für Abfallwirtschaft (consultants for waste management), Hamburg, June 23rd, 2006
34	.xls-worksheets to calculate the baseline and project emissions

Reference No.	Document or Type of Information
35	Global Stakeholder Process: documents published via Climate-L: Link: "http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1595&Ebene1_ID=26&Ebene2_ID=442&mode=1"
36	Revised PDD of "Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia", submitted July 31st, 2006 (dated June 24th, 2006 – with two small revisions)
37	Final PDD, version 03, dated August 9th, 2006, of "Onega Town Coal-to-Waste Wood Energy Switch, NW-Russia", submitted to the validator on Augsut 18th, 2006
38	Letter of Endorsement from the German Ministry of Environment, Joint Implementation Coordination office, dated September 29th, 2006
39	Detailed Project Emission Reduction Calculation", included as Annex 10 in the final PDD version dated August 09th, 2006