Bureau Veritas Certification Holding SAS

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DETERMINATION REPORT
CCGS

DETERMINATION OF THE "BARK AND WOOD WASTES TO HEAT AT OJSC "SOLOMBALA SAWMILL AND WOODWORKING PLANT", ARKHANGELSK, RUSSIAN FEDERATION"

REPORT NO. RUSSIA-DET/0131/2011
REVISION NO. 01

BUREAU VERITAS CERTIFICATION

"Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation"

Date of first issue:	Organizational unit:
29/06/2011	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
CCGS LLC	Mr. Mikhail Yulkin

Summary:

Bureau Veritas Certification has made the determination of the small-scale project "Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation" of company CCGS LLC, located in Arkhangelsk, Troitskiy av.,38 on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the determination process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project applies the appropriate baseline and monitoring methodology and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.

Report No.:	Subject Group:
RUSSIA-det/0131/2011	JI
Project title:	
"Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation"	
Work carried out by:	
Daniil Ukhanov – Lead verifier	
Work reviewed by:	
Leonid Yaskin – Internal Technical Reviewer	
Work approved by:	
Leonid Yaskin – Operational Manager	
Date of this revision:	**Rev. No.:** / **Number of pages:**
29/06/2011	01 / 55

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"Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation"

Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification
BWW	Bark and Wood Wastes
CAR	Corrective Action Request
CHPP	Combined Heat and Power Plant
CL	Clarification Request
CO2	Carbon Dioxide
DDR	Draft Determination Report
DR	Document Review
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ERU	Emission Reduction Unit
GHG	Greenhouse House Gas(es)
GWP	Global Warming Potential
IE	Independent Entity
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
NGO	Non Governmental Organization
NPV	Net Present Value
PDD	Project Design Document
PP	Project Participant
RF	Russian Federation
SSWP	Solombala Sawmill and Woodworking Plant
tCO2e	Tonnes CO2 equivalent
UNFCCC	United Nations Framework Convention for Climate Change

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"Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation"

1 INTRODUCTION

CCGS LLC (hereafter called "CCGS") has commissioned Bureau Veritas Certification to determine small-scale JI project "Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant" (hereafter called "the project") located in the city of Arkhangelsk, Arkhangelsk Region, the Russian Federation.

This report summarizes the findings of the determination of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are determined in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Determination is a requirement for all JI projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emissions reductions units (ERUs).

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The determination 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.

1.3 Determination team

The determination team consists of the following personnel:

Daniil Ukhanov

Bureau Veritas Certification Climate Change Lead Verifier

This determination report was reviewed by:

Leonid Yaskin
Bureau Veritas Certification, Internal reviewer

2 METHODOLOGY

The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a determination protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of determination and the results from determining the identified criteria. The determination protocol serves the following purposes:

- It organizes, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent determination process where the determiner will document how a particular requirement has been determined and the result of the determination.

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

2.1 Review of Documents

The Project Design Document (PDD) submitted by CCGS and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form Guidance on criteria for baseline setting and monitoring, Kyoto Protocol, Clarifications on Determination Requirements to be checked by an Accredited Independent Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, CCGS revised the original PDD v.1.0 dated 07/04/2011 and resubmitted it as v.1.2 dated 27/06/2011.

"Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation"

The first deliverable of the document review was the Determination Protocol Version 01 dated 26/05/2011 which contained 24 CARs and 4 CLs.

The determination findings presented in this Determination Report Version 01 and Appendix A relate to the project as described in the PDD versions 1.0 (published) and version 1.2 (final) dated 27/06/11.

2.2 Follow-up Interviews

On 23/06/2011 and 24/06/2011 Bureau Veritas Certification lead verifier Daniil Ukhanov performed a site-visit. Interviews with the project participant OJSC "Solombala Sawmill and Woodworking Plant" and the PDD developer CCGS were conducted to confirm the selected information and to clarify some issues identified in the document review. Representatives of SSWP and the PDD Developer CCGS were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
OJSC SSWP	➢ Reasoning for project implementation ➢ Project management organization ➢ Project history and Implementation schedule ➢ Baseline scenario ➢ Common practice ➢ Project scenario ➢ Emission calculation ➢ Investment issues ➢ Commissioning and proven trials ➢ Capacity issues ➢ Environmental permissions ➢ Environmental Impact Assessment
CONSULTANT CCGS	➢ Baseline scenario ➢ Common practice ➢ Project scenario ➢ Investment issues
Stakeholders	➢ N/A

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the determination is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

If the AIE, in assessing the PDD and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to JI project requirements, it should raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake in the published PDD that is not in accordance with the (technical) process used for the project or relevant JI project requirement or that shows any other logical flaw;

(b) Clarification request (CL), requesting the project participants to provide additional information for the AIE to assess compliance with the JI project requirement in question;

(c) Forward action request (FAR), informing the project participants of an issue, relating to project implementation but not project design, that needs to be reviewed during the first verification of the project.

The AIE should make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the determination.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 PROJECT DESCRIPTION

The aim of the project is utilization of on-site generated bark and wood wastes (BWW) in a biofuel boiler house to produce heat for the needs of OJSC "Solombala Sawmill and Woodworking Plant" (SSWP) and termination of heavy fuel oil combustion and BWW disposal to the dump.
Prior to the project implementation heat was supplied to industrial site No.2 of SSWP from two heavy fuel oil boiler houses. Significant quantities of BWW from the Plant's production lines were disposed to the dump due to the lack of waste utilization capacities.

It has to be said that BWW are categorized as a difficult-to-burn fuel due to their non-uniform particle size distribution and high moisture content. Because of the numerous difficulties associated with using BWW as fuel, there are extensive BWW dumping areas next to every sawmill in the Arkhangelsk Region. The sawmills' heat and electricity demand is generally met by fossil fuel combustion at the sawmill itself and/or by outside energy supplying companies.
The absence of the project would mean continuation of the existing heat production and wood waste handling practices that are acceptable for the plant and are not in conflict with the Russian laws and regulations.

The project envisages construction of a biofuel hot-water boiler house with the installed capacity of 18 MW. The boiler house is fitted with three URBAS boilers (Austria), 6 MW each. Two boilers are continuously in operation, one is a standby boiler. The only fuel for the boiler house is bark and sawdust. BWW are delivered from the Plant's own sawmilling and woodworking shops. The boiler house is located on industrial site No.2 of SSWP. Heat from the boiler house is supplied to the end-users which are located on the same site via the existing heat distribution network.

The contract with Austrian company AME GmbH for supply of main equipment was signed on June 6, 2001 (this date is considered to be the starting date of the project), and was preceded by lengthy negotiations with potential equipment suppliers and by elaboration of various boiler house configuration options. The supply of equipment and construction and installation works under the project were started in October 2001. The official commissioning took place in December 2002.

The project resulted in:
- ensuring almost complete utilization of bark and wood wastes from SSWP, thus their disposal to the dump is avoided;
- termination of heavy fuel oil combustion in the Plant's old boiler houses;
- mitigation of negative environmental impact;
- reduction in greenhouse gas (GHG) emissions by an average of 38 thousand tCO2e/year over the period 2008-2012.

The decision to implement the project was taken by the company's management in view of the possibility to offset some costs and to reduce the payback period by selling GHG emission reductions in the international market. Without such possibility the economic parameters of the project were unacceptably low. The project implementation using Article 6 of the Kyoto Protocol was discussed, inter alia, with Autonomous Non-Commercial Organization "Environmental Investments Center" with

which a respective protocol of intentions was signed as early as August 2000.
Much hope for joint implementation of this project was given by the fact that at the international research and application conference on climate change which took place in Arkhangelsk in 2000, Arkhangelsk Region was suggested as a pilot region for compliance and implementation of the Kyoto mechanisms. In the following years there were several more conferences and workshops dealing with this issue in Arkhangelsk, and in 2005 a Climate Change and GHG Emission Monitoring Council was established under the Arkhangelsk Regional Administration; one of its stated targets was to review joint implementation projects proposed for implementation by companies and plants of the Arkhangelsk Region.

Since the project brings benefits to the local environment, it got positive reviews from the Chief State Health Inspector of Arkhangelsk (2001) and from the Head of the Northern District Administration of Arkhangelsk (2005). These comments, besides local positive environmental effect, also mention the GHG emission reduction effect.

Eventually, as soon as all necessary JI approval procedures became operational in the Russian Federation (2010), OJSC "Solombala SWP" started cooperation with CCGS LLC, which was chosen among other companies as a partner for preparation of the required documentation and selling GHG emission reductions in the international market.

4 DETERMINATION CONCLUSIONS

In the following sections, the conclusions of the determination are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Determination Protocol in Appendix A.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 24 Corrective Action Requests and 4 Clarification Requests.

The number between brackets at the end of each section corresponds to the DVM paragraph.

4.1 Project approvals by Parties involved (19-20)

The project has no approvals by the Parties involved, therefore CAR 05 remains pending.

A written project approval by Party B should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines. It has not been provided to AIE at the determination stage.

4.2 Authorization of project participants by Parties involved (21)

The participation for OJSC SSWP listed as project participant in the PDD is not authorized by the Host Party because the project approval by the Host Party was not received. Party B is not determined.

The authorization is deemed to be carried out through the issuance of the project approvals.

4.3 Baseline setting (22-26)

The PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with appendix B of the JI guidelines (hereinafter referred to as JI specific approach) was the selected approach for identifying the baseline.

JI specific approach

The PDD provides a detailed theoretical description in a complete and transparent manner, as well as justification, that the baseline is established:

(a) By listing and describing the following plausible future scenarios (in two groups) on the basis of conservative assumptions and selecting the most plausible being Alternative H1 and Alternative W1:

Alternatives that ensure the consumers of industrial site #2 with required amount of heat:

H1) Continuation of the current situation;
H2) Construction of a gas-fired boiler house;
H3) Construction of coal-fired boiler house;
H4) Project activity without joint implementation mechanism.

Alternatives to BWW combustion under the project were identified:

W1) Continuation of the current situation;
W2) Use of BWW as a fuel for heat and power generation at Arkhangelsk CHPP;
W3) Use of BWW as feedstock for the Hydrolisys Plant;
W4) Project activity without joint implementation mechanism.

(b) By taking into account key factors that affect a baseline, such as availability of different types of fuel and investment necessity.

(c) Basically in a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors.

After screening H1 and W1 alternatives were left as the most plausible, namely:

H1) Continuation of the current situation;
W1) Continuation of the current situation.

All explanations, descriptions and analyses pertaining to the baseline in the PDD are made in accordance with the referenced JI specific approach and the baseline is identified appropriately.

Outstanding issues related to Baseline setting (22-26), PP's response and the AIE conclusion are summarized in Appendix A (refer to CAR 06 - CAR 10, CL 03).

4.4 Additionality (27-31)

JI specific approach

Traceable and transparent information showing that the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to reductions of anthropogenic emissions by sources of GHGs was provided in PDD Section B.2.

The PDD developer provides a justification of the applicability of the approach with a clear and transparent description, as per item 4.3 above. PDD developer described and scrutinized plausible alternative scenarios which have been provided in Section B.1 (refer to item 4.3 above).

Justification of additionality has been done in several steps, the steps are as follows:

1) Description and analysis of the alternatives (refer to Section B.1);
2) Investment analysis (including sensitivity analysis);
3) Common practice analysis.

The key additionality proofs were the results of the investment analysis and common practice analysis. The investment analysis shows that the project with capital investment 58 mln rubles has IRR=16,48 % lower than chosen benchmark (IRR=20%), hence it is not financially attractive. The sensitivity analysis of variations of key parameters (investment costs, heat production, heavy fuel oil price, discount rate) confirms the conclusion of the basic investment analysis.

The spreadsheet with the investment and sensitivity analyses was made available for the verifier, and Bureau Veritas Certification will submit it to JISC at the final determination as the supporting documentation.

The common practice analysis has reasonably shown that the proposed JI project does not represent a widely observed practice in the geographical area concerned.

The verifier determined that additionality is demonstrated appropriately as a result of the analysis using the approach chosen.

Outstanding issues related to Additionality (27-31), PP's response and the AIE conclusion are summarized in Appendix A (refer to CAR 11 –CAR 16).

4.5 Project boundary (32-33)

JI specific approach

The project boundary defined in the PDD, Section B.3, Table B.3-1 for project and baseline scenario accordingly, encompasses all anthropogenic emissions by sources of greenhouse gases (GHGs) that are:

(i) Under the control of the project participants such as:
- Methane and nitrogen oxide emissions from biofuel boiler house, BWW combustion;

(ii) Reasonably attributable to the project such as:
- "Finnish" boiler house, combustion of heavy fuel oil;
- Waste wood dumps, anaerobic decay of BWW;
- "Russian" boiler house, combustion of heavy fuel oil;
- Power supply from the external power grid for operational of heavy fuel oil boiler houses, combustion of fossil fuel;
- BWW transportation to dumps;

(iii) Significant such as:
- All the sources mentioned above, except BWW transportation to dumps, "Russian" boiler house, combustion of heavy fuel oil, power supply from the external power grid for operation of heavy fuel oil boiler houses, combustion of fossil fuel.

The delineation of the project boundary and the gases and sources included are appropriately described and justified in the PDD, Section B.3.

Based on the above assessment, the AIE hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

Outstanding issues related to Project boundary (32-33), PP's response and the AIE conclusion are summarized in Appendix A (refer to CAR 17 – CAR 20).

4.6 Crediting period (34)

The PDD states the starting date of the project as the date on which the implementation or construction or real action of the project began, and the starting date is 06/06/2001, which is after the beginning of 2000.

The PDD states the expected operational lifetime of the project in years and months, which is 20 years or 240 months.

The PDD states the length of the crediting period in years and months, which is 5 years or 60 months, and its starting date as 01/01/2008, which is on the date the first emission reductions are generated by the project.

4.7 Monitoring plan (35-39)

The PDD, in its monitoring plan section, explicitly indicates that JI specific approach was selected.

JI specific approach

The monitoring plan describes all relevant factors and key characteristics that will be monitored, and the period in which they will be monitored, in particular also all decisive factors for the control and reporting of project performance, such as:

- Production of heat in the new biofuel boiler house over the year y;

Remainder factors and key characteristics are listed in the PDD, Section D.2.

The monitoring plan specifies the indicators, constants and variables that are reliable (i.e. provide consistent and accurate values), valid (i.e. be clearly connected with the effect to be measured), and that provide a transparent picture of the emission reductions to be monitored such those listed in the PDD, Section D.2.

The monitoring plan is developed subject to the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring" developed by the JISC.

All categories of data to be collected in order to monitor GHG emissions from the project and determine the baseline of GHG emissions (Option 1) are described in required details.

The monitoring plan explicitly and clearly distinguishes:

(i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination, such as:
- Efficiency factor of heavy fuel oil boilers of the old hot water boiler house;
- Efficiency factor of biofuel boilers of the new boiler house;
- Net calorific value of BWW;
- CO2 emission factor for heavy fuel oil;
- CH4 emission factor for BWW;
- N2O emission factor for heavy fuel oil;
- GWP for N2O;
- Lignin fraction of C for BWW;
- Decomposition rate constant for BWW;
- Organic carbon content in BWW on dry basis;
- BWW moisture;
- Conversion factor from kg carbon to landfill gas quantity;
- Generation factor;
- Percentage of the stockpile under anaerobic conditions;
- Methane oxidation factor;
- Methane concentration in biogas;
- Methane density;
- GWP for CH4.

(ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination (there are no such parameters).

(iii) Data and parameters that are monitored throughout the crediting period, such as those presented in Section D.2 for the project and for the baseline such as:
- Production of heat in the new biofuel boiler house over the year y.

Step-by-step application of the used approach for monitoring is described in PDD Section D including monitoring procedures, formulae, parameters, data sources etc.

The monitoring plan describes the methods employed for data monitoring (including its frequency); please refer to PDD, Section D.2.

The monitoring plan elaborates all algorithms and formulae used for the estimation/calculation of baseline emissions and project emissions, as appropriate, such as formulae in Section D.1 for baseline emissions (Formula D.1-3 – D.1-6), Section D.1 for project emissions (Formula D.1-2).

The monitoring plan presents the quality assurance and control procedures for the monitoring process, all the QC/QA procedures are specified in PDD Section D.3.

The procedures include, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available on request.

The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. The operating and management structure for GHG monitoring is described in PDD Section D.4, Fig. D.4-2.

On the whole, the monitoring report reflects good monitoring practices appropriate to the project type.

The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured but not including data that are calculated with equations.

The monitoring plan indicates that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.

Outstanding issues related to Monitoring plan (35-39), PP's response and the AIE conclusion are summarized in Appendix A (refer to CAR 21 and CL 04).

4.8 Leakage (40-41)

JI specific approach

The PDD appropriately describes an assessment of the potential leakage of the project and appropriately explains that the estimation of leakage is reasonably neglected from conservative reasons.(see Section B.3).

Outstanding issues related to Leakage (40-41), PP's response and the AIE conclusion are summarized in Appendix A (refer to CAR 22).

4.9 Estimation of emission reductions or enhancements of net removals (42-47)

JI specific approach

The PDD indicates assessment of emissions in the baseline and project scenario as the approach chosen to estimate the emission reductions of the project.

The PDD provides the ex ante estimates of:

(a) Emissions for the project scenario (within the project boundary), which are 2,412 tons of CO2eq;
(b) Leakage are considered zero;
(c) Emissions for the baseline scenario (within the project boundary), which are 189,545 tons of CO2eq;
(d) Emission reductions adjusted by leakage (based on (a)-(c) above), which are 187,132 tons of CO2eq.

Reporting period: From 01/01/2008 to 31/12/2012.

The formulae used for calculating the estimates are referred in the PDD, Section D.1 and in Sections E.1 and E.4.

For calculating the estimates referred to above, key factors defined in the monitoring plain influencing the project and baseline emissions were taken into account, as appropriate.

The estimation referred to above is based on conservative assumptions and the most plausible scenario in a transparent manner.

The estimates referred to above are consistent throughout the PDD.

The annual average of estimated emission reductions over the crediting period is calculated by dividing the total estimated emission reductions over the crediting period by the number of months of the crediting period, and multiplying by twelve.

The PDD Section E includes an illustrative ex ante emissions calculation.

4.10 Environmental impacts (48)

The PDD lists and attaches documentation on the analysis of the environmental impacts of the project (transboundary impacts are not applicable to the project), in accordance with procedures as determined by the host Party, such as the Federal Law "On the Environmental protection #7-FZ".

The PDD provides conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party.

Outstanding issue related to Environmental impacts (48), PP's response and the AIE conclusion are summarized in Appendix A (refer to CAR 23 and CAR 24).

4.11 Stakeholder consultation (49)

Stakeholder consultation was not undertaken as it is not required by the host party.

4.12 Determination regarding small scale projects (50-57)

The project activity falls under the following two types:

1. Type I – Renewable energy projects. Category C – Thermal energy production with or without electricity;
2. Type III – Other projects. Category E – Avoidance of methane production from biomass decay through controlled combustion, gasification or mechanical/thermal treatment. This was done in accordance with types and categories of projects adopted by the Clean Development Mechanism Executive Board.

For the confirmation that the proposed JI SSC project is not a debundled component of a large project please refer to PDD Section A.4.5.

4.13 Determination regarding land use, land-use change and forestry (LULUCF) projects (58-64)

Not applicable

4.14 Determination regarding programmes of activities (65-73)

Not applicable

5 SUMMARY AND REPORT OF HOW DUE ACCOUNT WAS TAKEN OF COMMENTS RECEIVED PURSUANT TO PARAGRAPH 32 OF THE JI GUIDELINES

No comments, pursuant to paragraph 32 of the JI Guidelines, were received.

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the "Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation", Russian Federation" Project in Russia. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

Project participant used the JI specific approach for demonstration of the additionality. In line with this approach, the PDD provides the investment analysis and common practice analysis, to determine that the project activity itself is not the baseline scenario.

Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfilment of stated criteria.

The determination revealed two pending issues related to the current determination stage of the project: the issue of the written approval of the project and the authorization of the project participant by the host Party. If the written approval and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 1.2 dated 27/06/2011 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

The determination is based on the information made available to us and the engagement conditions detailed in this report.

7 REFERENCES

Category 1 Documents:
Documents provided by OJSC SSWP and CCGS that relate directly to the GHG components of the project.

/1/ "Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation", PDD Version 1.2 dated 27/06/2011.

/2/ Excel spreadsheet with calculation of emission reduction and investment analysis "SSM (Version 1.1)_fin_eng".

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ Guidelines for Users of the Joint Implementation Project Design Document Form/Version 04, JISC.

/2/ JISC Guidance on criteria for baseline setting and monitoring. Version 02.

/3/ Glossary of Joint Implementation terms. Version 02, JISC.

/4/ 2006 IPCC Guidelines on National Greenhouse Gas Inventories, Volume 2, Energy.

/5/ "Regulation of realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change". Approved by the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".

/6/ JSC "Solombala SWP", "Boiler House" design documentation. Developer: JSC "Arkhgiprodrev". Arkhangelsk, 2002.

/7/ UR-FRR-6000 utilizing energy boilers test report, OJSC "Solombala SWP", Arkhangelsk, 2002.

/8/ Provisions for JI small-scale projects, Version 03, JISC.

/9/ Methane and Nitrous Oxide Emissions from Biomass Waste Stockpiles, PCFplus Research, World Bank, August 2002.

/10/ Reference Book on Small Boiler Units/Edited by K.F.Roddatis. M.: Energoatomizdat, 1989.

/11/ Methodological tool to determine the baseline efficiency of thermal or electric energy generation systems. Version 01. CDM Executive Board.

/12/ Methodological "Tool to determine project emissions from flaring gases containing methane". Version 01. CDM Executive Board.

/13/ World Resources Institute (WRI) and World Business Council for Sustainable Development. 2001. Mobile Combustion CO2 Emissions Calculation. Guidelines to calculation. Washington D.C.: World Resources Institute.

/14/ Act of commissioning of biofuel boiler house from December 16, 2002.

/15/ Commercial proposal for Solombala Sawmill and Woodworking Plant.

/16/ Letter from Head of power supply department concerning the own electricity demands of biofuel boiler house.

/17/ Protocol of intentions between Centre of environmental investments and OJSC Solombala SWP.

"Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation"

Persons interviewed:

List persons interviewed during the determination or persons that contributed with other information that are not included in the documents listed above.

/1/ S. Popov – Head of Energy Department, OJSC SSWP;

/2/ S. Pigin – Head of human safety department, OJSC SSWP;

/3/ Y. Kostolomova – Environmental specialist, OJSC SSWP;

/4/ E. Ershov – Senior specialist, Project Development Department, CCGS LLC.

/5/ A. Samorodov – Director, Project Development Department, CCGS LLC.

DETERMINATION PROTOCOL

Check list for determination, according JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of the project is indicated as "Bark and wood wastes to heat at OJSC "Solombala Sawmill and Woodworking Plant", Arkhangelsk, Russian Federation".		OK
-	Is the sectoral scope to which the project pertains presented?	Sectoral scopes: Energy industries (renewable/non-renewable sources) (1); Wastes handling and disposal (13). The project activity meets the conditions for small-scale projects of Type I and Type III (please refer to Section A.4.2).		OK
-	Is the current version number of the document presented?	Current version number is 1.0.		OK
-	Is the date when the document was completed presented?	The date of PDD completion is April 07, 2011.		OK
Description of the project				
-	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project; b) Baseline scenario; and c) Project scenario (expected outcome, including a technical description)?	Requirements a), b), c) to the description of the project are met including its purpose. PDD reads: "The aim of the project is utilization of on-site generated bark and wood wastes (BWW) in a biofuel boiler house to produce heat for the needs of OJSC "Solombala Sawmill and Woodworking Plant" (SSWP) and termination of heavy fuel oil combustion and BWW disposal to the dump".		OK
-	Is the history of the project (incl. its JI component) briefly summarized?	The history of the project including its JI component is briefly summarized as follows: "The project implementation using Article 6 of the Kyoto Protocol was discussed, inter alia, with Autonomous Non-Commercial Organization "Environmental Investments Center" with which a respective protocol of intentions was signed		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		as early as August 2000. Since the proect brings benefits to the local environment, it got positive reviews from the Chief State Health Inspector of Arkhangelsk (2001) and from the Head of the Northern District Administration of Arkhangelsk (2005). These comments, besides local positive environmental effect, also mentions the GHG emission reduction effect."		
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	Project participants are listed in Section A.3. Party A – The Russian Federation with project participant Open Joint Stock Company "Solombala Sawmill and Woodworking Plant", Party B – not determined.		OK
-	Is the data of the project participants presented in tabular format?	The data of the project participants is presented in tabular format.		OK
-	Is contact information provided in Annex 1 of the PDD?	Contact information is provided in Annex 1 of the PDD.		OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	The indicated host party is the Russian Federation.		OK
Technical description of the project				
Location of the project				
-	Host Party(ies)	The Russian Federation.		OK
-	Region/State/Province etc.	Arkhangelsk region.		OK
-	City/Town/Community etc.	City of Arkhangelsk.		OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	Detail of the physical location of the project was provided. **CAR 01.** Please provide the source of information of coordinates presented in PDD.	CAR 01	OK
Technologies to be employed, or measures, operations or actions to be implemented by the project				
-	Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data	The project envisages the construction of a new biofuel boiler house with the total installed capacity of 18 MW. The primary purpose of the boiler house is to produce heat for drying chambers	CL 01 CL 02 CAR 02	OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	and the implementation schedule described?	that are intended for artificial drying of timber. Besides some heat is also used for heating and hot water supply of the facilities located on industrial site №2. The new boiler house is fitted with three URBAS UR-FRR-6000 boilers (Austria) with the installed thermal capacity 6 MW each. The used fuel is a mixture of bark and sawdust in the proportion of 70% to 30%. **CL 01.** Please clarify - who is the exact consumer of the heat; - are the drying chambers located on industrial site №2; - is produced heat transported to the nearby Solombalsky PPM or another consumer? **CAR 02.** The project description in lacks transparency as to what is the source of biofuel (mixture of bark and sawdust) for the project boiler house? Is there enough amount of biofuel on SSWP for the boiler house operation (especially in 2011 and 2012)? **CL 02.** Please clarify the meaning of sentence on the page 7 "The heat medium is water: 105^{0}C at the inlet and 70^{0}C at the outlet"? Why the water temperature at the inlet is higher than at the outlet? Moreover, please clarify the exact output of the project boiler house (is it heat, or steam, or hot water, and where it is transferred)? **CAR 03.** Please provide the implementation schedule of the project. **CAR 04.** Please provide all relevant technical parameters of old boilers that are replaced by the new boiler house (incl. their thermal capacity, their efficiency, their heat generation before decommissioning). Please take note: all these data should be	CAR 03 CAR 04	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		substantiated by the reliable documents.		
Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances				
-	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	PDD states: "GHG emission reductions as a result of the project at Solombala SSWP are achieved due to reduction in fossil fuel (heavy fuel oil) consumption and due to prevention of anaerobic decay of BWW at dumps. This became possible due to commissioning of a boiler house which fires sawmilling and wood working residues (bark and sawdust) as fuel and due to decommissioning of the heavy fuel oil boiler house."		OK
-	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period (5 years) is provided: 189,545 tCO2e. In the final version of PDD (version 1.2 from 27/06/2011) the estimation of emission reductions over the crediting period (5 years) is: 187,132 tCO2e.		OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	The estimated annual emission reduction for the chosen credit period is 37,909 tCO2e. In the final version of PDD (version 1.2 from 27/06/2011) the estimated annual emission reduction for the chosen credit period is 37,426 tCO2e.		OK
-	Are the data from questions above presented in tabular format?	The data from the questions above are presented in tabular format. Please refer to Section A.4.4.1.		OK
Estimated amount of emission reductions over the crediting period				
-	Is the length of the crediting period Indicated?	The length of the crediting period is 5 years.		OK
-	Are estimates of total as well as annual and average annual emission reductions in tonnes of CO2 equivalent provided?	The estimated total emission reduction is 189,545 tCO2e and annual emission reduction is 37,909 tCO2e. In the final version of PDD (version 1.2 from 27/06/2011) the estimated total emission reduction is 187,132 tCO2e and annual emission reduction is 37,426 tCO2e.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties				
19	Have the DFPs of all Parties listed as "Parties involved" in the PDD provided written project approvals?	**CAR 05.** The project has no approvals by the Parties involved.	CAR 05	-
19	Does the PDD identify at least the host Party as a "Party involved"?	The host Party involved is the Russian Federation.		OK
19	Has the DFP of the host Party issued a written project approval?	No, pending a response to CAR 05.		OK
20	Are all the written project approvals by Parties involved unconditional?	All written approvals by Parties involved are unconditional.		OK
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: – A written project approval by a Party involved, explicitly indicating the name of the legal entity? or – Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	The authorization of Open Joint Stock Company "Solombala Sawmill and Woodworking Palnt". Conclusion is pending a response to CAR 05.		OK
Baseline setting				
22	Does the PDD explicitly indicate which of the following approaches is used for identifying the baseline? – JI specific approach – Approved CDM methodology approach	It is explicitly indicated that the JI specific approach was applied for identifying the baseline.		OK
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	A detailed theoretical description of the baseline is provided in Section B.1 in a complete and transparent manner.		OK
23	Does the PDD provide justification that the baseline is established:	The baseline is established basically:	CAR 06 CAR 07	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one? (b) Taking into account relevant national and/or sectoral policies and circumstance? – Are key factors that affect a baseline taken into account? (c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, date sources and key factors? (d) Taking into account of uncertainties and using conservative assumptions? (e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure? (f) By drawing on the list of standard variables contained in appendix B to "Guidance on criteria for baseline setting and monitoring", as appropriate?	(a) By listing and describing plausible alternatives available for the project owner Open Joint Stock Company "Solombala Sawmill and Woodworking Plant" and selecting the most plausible one. Alternative scenarios were listed and described in two groups: - Alternatives that ensure the consumers of industrial site #2 with the required amount of heat: Alternative H1. Continuation of the current situation; Alternative H2. Construction of a gas-fired boiler house; Alternative H3. Construction of coal-fired boiler house; Alternative H4. Project activity without joint implementation mechanism. - Alternatives to BWW combustion under the project were identified: Alternative W1. Continuation of the current situation; Alternative W2. Use of BWW as fuel for heat and power generation at Arkhangelsk CHPP; Alternative W3. Use of BWW as feedstock for the Hydrolisys Plant; Alternative W4. Project activity without joint implementation mechanism. Based on alternatives analysis with taking into account the key factors: investments necessity, situation in the SSWP and Arkhangelsk region in terms of coal and gas supply, a conclusion is made that "the most likely scenario is continuation of the current situation which suggests combustion of residual fuel oil (H1) and dumping of BWW at the landfill (W1)." (b) By taking into account key factors that affect a baseline, such as availability of different types of fuel and investments necessity.	CL 03 CAR 08 CAR 09 CAR 10	OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		(c) Basically in a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors. (d) Taking into account of uncertainties and using conservative assumptions. AIE's note: in Section B.1 ex-ante evaluations of heat production by the new boiler house for 2011 and 2012 are presented. However, these parameters will be monitored in accordance with the monitoring plan. **Conclusion is pending the provision of reference [R1].** (e) **Conclusion on the issue is pending a response to CL 01, CL 02.** (f) By drawing of the list of standard variables contained in appendix B to Guidance on criteria for baseline and monitoring. **CAR 06.** Please take into account the plausible alternative that envisages the transfer of BWW from Solombalsky SWP to Solombalsky PPM. **CAR 07.** Please justify that by the time of decision making (2001) there was no gas pipeline to Arkhangelsk. **CL 03.** Please clarify: - what is the purpose of the other two boiler houses (combusting residual fuel oil) indicated in the description of Alternative H3; - does the heat meter measure the heat from the new boiler house (biofuel) and other boiler houses; **CAR 08.** Please justify the conservativeness of value (70000 Gcal/year) of heat production at the new biofuel boiler house for 2011 and 2012. Please take note: in investment analysis heat supply for the above mentioned years was stated as 60000		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Gcal/year. **CAR 09.** Please indicate in Section B.1 in the tabular forms the parameter HS_{BBH} (the heat production in the new biofuel boiler house over the year,y). **CAR 10.** Please justify the conservativeness of value of NCV_{BWW} (7.54 GJ/t). Please take note: 2006 IPCC Guidelines for National Greenhouse Gas Inventories provides average value for wood wastes 15.6 GJ/t.		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	N/A		N/A
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	N/A		N/A
Approved CDM methodology approach only_Paragraphs 26(a) – 26(d)_Not applicable				
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively	It is explicitly indicated that the approach described in paragraph 2 (a) of Annex 1 to the "Guidelines on criteria for baseline setting and monitoring" was chosen to demonstrate that the emission reductions achieved by the small-scale project are additional to those that might have occurred in the absence of the project. Therefore, the approach (a) was used.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	determined that a comparable project (to be) implemented under comparable circumstances has additionality; (c) Application of the most recent version of the "Tool for the demonstration and assessment of additionality. (allowing for a two-month grace period) or any other method for proving additionality approved by the CDM Executive Board".			
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	The approach is based on the prove that the project activity would not have occurred anyway due to low financial indicators NPV, IRR and that this project is not a common practice.		OK
29 (b)	Are additionality proofs provided?	To demonstrate the additionality of the project three steps were implemented: 1: Description and analysis of the alternatives (refer to Section B.1); 2: Investment analysis (including the sensitivity analysis); 3: Common practice analysis. Plausible alternatives to the project were identified in Section B.1. The investment analysis was based on calculation of NPV, IRR for the project, taking into account investment costs, operation costs, depreciation and other parameters referring to expenses. Benchmark analysis (with discount rate as a benchmark 19.6%) was applied. Investment analysis includes the sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions. The investment analysis shows that the project without sale of ERUs has lower financial indicators than other alternative (with sale of emission reductions).	CAR 11 CAR 12 CAR 13 CAR 14 CAR 15 CAR 16	OK OK OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		The common practice analysis has reasonably shown that the project activity is not the common practice in Russian timber processing industry. **CAR 11.** Please justify the limit of chosen time horizon of the investment analysis (2020), however expected operational lifetime in Section C.2 is indicated as 20 years (having in mind that the start of operation is 2003). **CAR 12.** Please provide the reference to the source of information for the used input data in investment analysis (capital expenditure, prices of heavy fuel oil, profit tax, property tax, price of early emissions and price of ERUs). **CAR 13.** Please justify the exclusion of the operational costs from investment analysis. **CAR 14.** Please justify the applicability of the methodology recommended in the resolution of the Russian Government #1470 of 22 November 1997 which relates to budget rather than project financing. Please take note: it is not possible to open the whole document by reference 7. **CAR 15.** Please avoid unnamed figures from the spreadsheet "SSM (version 1)_fin_eng" such as 0.85 and 9.59 from the formulae for "reduction in heavy fuel oil consumption calculation"; **CAR 16.** Please provide calculation of sensitivity analysis in excel spreadsheet.		
29 (c)	Is the additionality demonstrated appropriately as a result?	With the unresolved CAR 11 – CAR 16 the additionality of the project is not demonstrated.		OK
30	If the approach 28 (c) is chosen, are all	N/A		N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	explanations, descriptions and analyses made in accordance with the selected tool or method?			
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_Not applicable Project boundary (applicable except for JI LULUCF projects JI specific approach only				
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	The project boundary defined in the PDD encompasses the anthropogenic emissions by sources of GHGs in the baseline scenario (refer to Section B.3): CO2 emissions from residual fuel oil combustion in "Finnish" boiler house, CH4 emissions from waste wood dumps, anaerobic decay of BWW. Sources of project emissions: are considered zero. **CAR 17.** Please justify the values of electricity consumption in the new biofuel boiler house and in the old "Russian" and "Finnish" boiler houses indicated in PDD Section B.3. **CAR 18.** Calculation of the haul distance increase (1.4 km) indicated in Section B.3 is incorrect. Moreover, the usage of MAZ trucks with its characteristics (30 bulk m^3, 40 litres per 100 km) should be justified. Indicated emission factor for diesel is incorrect (it should be 0.0741 tCO2e/GJ). **CAR 19.** Paragraph 14 (a) (iii) of the "Guidance on criteria for baseline setting and monitoring" reads: "project boundary shall encompass all anthropogenic emissions by sources of GHGs which are: significant, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tones of CO2 equivalent, whichever is lower". As project emissions are zero all emissions (from wood waste supply to the boiler house, from increase in emissions of methane	CAR 17 CAR 18 CAR 19 CAR 20	OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		and nitrogen oxide from combustion of wood wastes) are more than 1% of the annual average anthropogenic emissions and must be treated as significant. **CAR 20.** Please avoid term "baseline boundary" from Fig. B.3-1 as it is absent in JI.		
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Project boundary is defined on the basis of case-by-case assessment of different emission sources in the baseline scenario.		OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	The delineation of the project boundaries are presented on Figure B.3-1. Conclusion is pending a response to CAR 20.		OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	All the included gases and sources are explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified in Section B.3 and in the Table B.3-1. Conclusion is pending a response to CAR 19.		OK
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	The starting date of the project is indicated as: 06/06/2001 (the date of contract with AME GmbH for supply of boiler house equipment). Conclusion is pending provision to the AIE of the copy of the above contract.		OK
34 (a)	Is the starting date after the beginning of 2000?	Yes, it is.		OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	The expected operational lifetime of the project is 20 years/240 months.		OK
34 (c)	Does the PDD state the length of the crediting	The length of crediting period is defined as 5 years / 60 months		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	period in years and months?	(from January 1, 2008 till December 31, 2012).		
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	Starting date of crediting period is after the date when the first emission reductions are generated by the project.		OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	The start of crediting period is 01/01/2008.		OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	N/A		N/A
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? – JI specific approach – Approved CDM methodology approach	PDD explicitly indicates that a JI specific approach regarding monitoring was used.		OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: – All relevant factors and key characteristics that will be monitored? – The period in which they will be monitored? – All decisive factors for the control and reporting of project performance?	The monitoring plan describes: - the relevant factor that will be monitored: (1) Production of heat in the new biofuel boiler house over the year y. - the periods in which it will be monitored: continuously (Production of heat in the new biofuel boiler house over the year y - continuously); All decisive factors for the control and reporting of project performance: ecological reporting, quality control (QC) and quality		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		assurance (QA) procedures; the operational and management structure that will be applied in implementing the monitoring plan.		
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The monitoring plan specifies the indicators, constants and variables indicated in Section B.1 and in Section D.2.		OK
36 (b)	If default values are used: – Are accuracy and reasonableness carefully balanced in their selection? – Do the default values originate from recognized sources? – Are the default values supported by statistical analyses providing reasonable confidence levels? – Are the default values presented in a transparent manner?	The used default value were provided in Sections B.1 and D.2. Conclusion is pending a response to CAR 08-CAR 10.		OK
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	There are no such values.		OK
36 (b) (ii)	For other values, – Does the monitoring plan clearly indicate the precise references from which these values are taken? – Is the conservativeness of the values provided justified?	Refer to 36 (b).		OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	The procedures are described in Section D.3.		OK
36 (b) (iv)	Are International System Unit (SI units) used?	Yes, SI units are used.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	Refer to PDD Section D.2.		OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	Yes, they are consistent.		OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?	Yes.		OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	Description of the monitoring plan in Section D.1 explicitly and clearly distinguishes: (i) Refer to 36 (b). (ii) N/A. (iii) Refer to 36 (a): parameter marked (1).		OK
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	The monitoring plan describes the methods employed for data monitoring (electromagnetic heat meter unit) and data collection frequency (continuously – the heat production in the new biofuel boiler house).	CL 04	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		CL 04. Please clarify how the monitored data will recorded.		
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	Formulae are indicated and numbered in Sections D.1		OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Yes, the underlying rationale explained.		OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Please refer to 36 (f).		OK
36 (f) (iii)	Are all equations numbered?	Yes, they are numbered.		OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes, all variables with indicated units are defined.		OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	N/A		OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	N/A		OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	Yes, consistency is ensured.		OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	Yes, they are explained.		OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Yes, it is consistent.		OK
36 (f) (vii)	Are references provided as necessary?	Yes, the references are provided as necessary.		OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	Yes, they are explained in transparent manner.		OK
36 (f) (vii)	Is it clearly stated which assumptions and	N/A		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?			
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	The uncertainty level of measured parameters is provided; please refer to D.3, it is in the range at 95% confidence level.		OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	N/A		OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	N/A		OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request?	QC/QA procedures are specified in PDD Section D.3. They include basic information about regular verification of heat meter unit.		OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	The operational and management structure that the project participant(s) will implement in order to monitor emission reduction generated by the project is described in PDD Section D.4. Responsibilities and the authority regarding the monitoring activities are indicated.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring techniques are in line with current operation routines.		OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected.		OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	**CAR 21.** Please explicitly indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.	CAR 21	OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	N/A		N/A
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable Applicable to both JI specific approach and approved CDM methodology approach				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be performed independently for	N/A		N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)? (c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?			
Leakage **JI specific approach only**				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	**CAR 22.** Please describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected.	CAR 22	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	Conclusion is pending a response to CAR 22.		OK
Approved CDM methodology approach only_Paragraph 41_Not applicable **Estimation of emission reductions or enhancements of net removals**				
42	Does the PDD indicate which of the following approaches it chooses? (a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions	PDD assess emissions in the baseline scenario and in the project scenario. Hence, approach (a) is chosen.		OK
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of:	PDD provides ex ante estimates of:		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	(a) Emissions for the project scenario (within the project boundary): is considered to be zero; (b) Leakage is considered to be zero; (c) Emissions for the baseline scenario: 189,545 tCO2e; (d) Emission reductions adjusted by leakage: 189,545 tCO2e. Conclusion is pending a response to CAR 10, 18, 19, 22. In the final version of PDD (version 1.2 from 27/06/2011) PDD provides ex ante estimates of: (a) Emissions for the project scenario (within the project boundary): 2,412 tCO2e; (b) Leakage is considered to be zero; (c) Emissions for the baseline scenario: 189,545 tCO2e; (d) Emission reductions adjusted by leakage: 187,132 tCO2e.		
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A		N/A
45	For both approaches in 42 (a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis?	(a) Estimates in 43 are given on the periodic basis, from the beginning until the end of the crediting period, in tones of CO2 equivalent. (b) The formulae used in PDD are consistent throughout PDD (for the formulae refer to Section D and Section E). (c) Key factors influencing the baseline emissions and the activity level of the project and the emissions are taken into account, as		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(iv) For each GHG? (v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent? (e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over	appropriate. (d) Data sources used for calculating the estimates are basically clearly identified, reliable and transparent. (e) Emission factors (including default emission factors) selected by carefully balancing accuracy. (f) Estimation in 43 is based on the most plausible scenarios in a transparent manner. (g) Estimates in 43 are consistent throughout the PDD. (h) The annual average of estimated emission reductions calculated virtually by dividing the total estimated emission reductions over the crediting period by the total months of the crediting period and multiplying by twelve.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	Illustrative ex-ante estimation of baseline emissions is presented on the spreadsheet made available to AIE.		OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	**CAR 23.** Please list the documentation concerning the environmental impact of the project. Take note: by the time of design of project documentation environmental impact assessment was not an integral part of Design Documentation, therefore the project should have gone through evaluation of environmental impact assessment procedure (OVOS). **CAR 24.** Please justify the origination of carbon dioxide emission volume (13.665) refer to the table F.1. Please take note: reduction in CH4 emissions was not indicated; the new pollutant "coal ash" emerged.	CAR 23 CAR 24	OK OK
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	Russian legislation does not use the term "significant environmental impacts". The company is permitted to operate on the basis on permission of air emission issued by the state authority Rostekhnadzor.		OK
Stakeholder consultation				
49	If stakeholder consultation was undertaken in	Stakeholder consultation is not required by the Russian legislation.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	Hence public hearings were not organized.		
Determination regarding small-scale projects (additional elements for assessment)				
50	Does the PDD appropriately specify and justify the SSC project type(s) and category(ies) that fall under: (a) One of the types and thresholds of JI SSC projects as defined in .Provisions for joint implementation small-scale projects.? If the project contains more than one JI SSC project type component, does each component meet the relevant threshold criterion? (b) One of the SSC project categories defined in the most recent version of appendix B of annex II to decision 4/CMP.1, or an additional project category approved by the JISC in accordance with the relevant provision in "Provisions for joint implementation small-scale projects"?	The project activity falls under the following two types: 1. Type I – Renewable energy projects. Category C – Thermal energy production with or without electricity; 2. Type III – Other projects. Category E – Avoidance of methane production from biomass decay through controlled combustion, gasification or mechanical/thermal treatment. This was done in accordance with types and categories of projects adopted by the Clean Development Mechanism Executive Board.		OK
51	Does the SSC PDD confirms and shows that the proposed JI SSC project is not a debundled component of a large project by explaining that there does not exist a JI (SSC) project with a publicly available determination in accordance with paragraph 34 of the JI guidelines:	For the confirmation that the proposed JI SSC project is not a debundled component of a large project please refer to Section A.4.5.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(a) Which has the same project participants; and (b) Which applies the same technology/measure and pertains to the same project category; and (c) Whose determination has been made publicly available in accordance with paragraph 34 of the JI guidelines within the previous 2 years; and (d) Whose project boundary is within 1 km of the project boundary of the proposed JI SSC project at the closest point?			
Applicable to bundled JI SSC projects only 56 (b)				
Applicable to all JI SSC projects				
57	Is the leakage only within the boundaries of non-Annex I Parties considered?	Conclusion is pending a response to CAR 22.		OK
Determination regarding land use, land-use change and forestry projects_Paragraphs 58 – 64(d)_Not applicable				
Determination regarding programmes of activities_Paragraphs 66 – 73_Not applicable				

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Determination team conclusion
CAR 01. Please provide the source of information of coordinates presented in PDD.	A.4.1.4	Response 1 from 24/06/2011 This coordinates were determined by Google Earth. Corresponding information was added to the PDD. See PDD's p.6.	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.

CAR 02. The project description in lacks transparency as to what is the source of biofuel (mixture of bark and sawdust) for the project boiler house? Is there enough amount of biofuel on SSWP for the boiler house operation (especially in 2011 and 2012)?	A.2	Response 1 from 24/06/2011 The source of fuel for the new boiler house is the Plant's own residues from wood working production lines. Bark and sawdust are generated when logs are processed in debarking machines (6 streams). Sawdust is also supplied from four dry timber assorting lines. This information was added to PDD, see p.8 There is a direct relation between cutting volumes (and BWW generation volumes, respectively) and heat demand for process needs. The more wood is processed and the more BWW is generated, the more heat is demanded for timber drying. Besides, there are more wood wastes generated than the boiler house is able to consume, and that is why a significant proportion of wood wastes is supplied to Solombala PPM.	Conclusion on Response 1 Justification of BWW availability is accepted by AIE. CAR is closed based on due corrections made to PDD.
CAR 03. Please provide the implementation schedule of the project.	A.4	Response 1 from 24/06/2011 The implementation schedule of the project was added, see the PDD p. 10.	Conclusion on Response 1 CAR is closed based on due implementation schedule provided in PDD.

CAR 04. Please provide all relevant technical parameters of old boilers that are replaced by the new boiler house (incl. their thermal capacity, their efficiency, their heat generation before decommissioning). Please take note: all these data should be substantiated by the reliable documents.	A.4	Response 1 from 24/06/2011 All relevant technical parameters of old boilers were provided to BVC in forms of boilers' passports. "Finnish" heating plant before the project implementation had been supplying the same amount of heat as the new biofuel boiler house. For instance in 2002 the heat production at this plant was 43,560 Gcal (182,386 GJ). Additional information was added to the PDD, see p. 7.	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.
CAR 05. The project has no approvals by the Parties involved.	19	Response 1 from 24/06/2011 N/A	Conclusion on Response 1 CAR is not closed.
CAR 06. Please take into account the plausible alternative that envisages the transfer of BWW from Solombalsky SWP to Solombalsky PPM.	23	Response 1 from 24/06/2011 The statistics of the BWW transfer from Solombala SWP to Solombala PPM are given under the description of Alternative W1. It is shown that the volumes of BWW supply from SSWP to SPPM both prior to and after the project implementation remained at the same level. See page 14 of the PDD.	Conclusion on Response 1 The presented information is accepted by AIE. CAR is closed based on due corrections made to PDD.

CAR 07. Please justify that by the time of decision making (2001) there was no gas pipeline to Arkhangelsk.	23	Response 1 from 24/06/2011 According to this article http://arhpress.ru/arkhangelsk/2003/12/3/7.shtml even in 2003 the gas pipeline was expected to be constructed only by 2007. However the pipeline was officially commissioned only in 2010: http://www.echosevera.ru/economy/2010/09/15/193.html At the time of decision making there was no gas pipeline in Arkhangelsk.	Conclusion on Response 1 The justifications are considered as sufficient and are accepted by AIE. CAR is closed.
CAR 08. Please justify the conservativeness of value (70000 Gcal/year) of heat production at the new biofuel boiler house for 2011 and 2012. Please take note: in investment analysis heat supply for the above mentioned years was stated as 60000 Gcal/year.	23	Response 1 from 24/06/2011 According to [R1] the required yearly heat quantity to meet enterprise's demand is equal to 70000 Gcal. This value was taken as a prognosis for 2011 and 2012. Anyway the real quantity of heat will be monitored and only factual data will be used for GHG emission reduction calculation. Value of 60000 Gcal/year assumed in the investment analysis approximately corresponds to the Plant's sawmilling capacity which is about 700 thousand cubic meters per year.	Conclusion on Response 1 CAR is closed based on due justifications made.
CAR 09. Please indicate in Section B.1 in the tabular forms the parameter HS_{BBH} (the heat production in the new biofuel boiler house over the year,y).	23	Response 1 from 24/06/2011 Correction was made, see the PDD p.16	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.

CAR 10. Please justify the conservativeness of value of NCV_{BWW} (7.54 GJ/t). Please take note: 2006 IPCC Guidelines for National Greenhouse Gas Inventories provides average value for wood wastes 15.6 GJ/t.	23	Response 1 from 24/06/2011 2006 IPCC average NCV_{BWW} was calculated for BWW with a lower moisture content. Moreover IPCC warns that its data are uncertain. Real NCV was obtained during boiler test [R2]. This document is provided to BVC.	Conclusion on Response 1 CAR is closed based on due documents provided to AIE.
CAR 11. Please justify the limit of chosen time horizon of the investment analysis (2020), however expected operational lifetime in Section C.2 is indicated as 20 years (having in mind that the start of operation is 2003).	29 (b)	Response 1 from 24/06/2011 According to the "Tool for the demonstration and assessment of additionality" (Version 05.2) IRR calculations shall as a preference reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period. In general a minimum period of 10 years and a maximum of 20 years will be appropriate. The period till 2020 was chosen and the fair value of the project activity assets at the end of the assessment period was included.	Conclusion on Response 1 The justifications are accepted by AIE. CAR is closed.

CAR 12. Please provide the reference to the source of information for the used input data in investment analysis (capital expenditure, prices of heavy fuel oil, profit tax, property tax, price of early emissions and price of ERUs).	29 (b)	Response 1 from 24/06/2011 The sources of information are as follows: • capital expenditure – offer from Austrian supplier of boiler equipment (ref No. 672 U dated 20.12.2000) for supply of boiler house equipment totaling around DEM 2.3 million or RUR 29 million. According to [E.F.Buznikov et alia, Industrial and Heating Boiler Houses. – M.: Energoatomizdat, 1984, p. 242)] equipment costs are represent 48% of the total investments. So the total capital expenditure in 2 times more and equal to RUR 58 million; • prices of heavy fuel oil – see the letter from chief accountant; • profit tax – Article 284 of the Tax Code of the Russian Federation; • property tax– Article 380 of the Tax Code of the Russian Federation;	Conclusion on Response 1 CAR is closed based on due justifications made.

		• prices of early reductions and ERUs – in early 2000 there were only indicative potential carbon prices. For instance, the presentation about global carbon markets prepared by Alternative Energy Development, Inc. in January 2000 (http://wbcarbonfinance.org/docs/carbonmarkets.ppt) gives a range of purchase prices of emission reductions due to projects implemented in different countries of the world. The indicated prices vary from several cents to 30 USD per tonne of CO_2e. Considering the high level of uncertainty, but also taking into account generally positive market attitude and possible increase in prices on approaching the first crediting period under the Kyoto protocol, the price of ERU was assumed equal to indicative value of 10 USD (300 RUR) per tonne of CO_2e, and the average price of early emission reductions was assumed to be equal to 1/3 of the ERU price (90 RUR).	
CAR 13. Please justify the exclusion of the operational costs from investment analysis.	29 (b)	Response 1 from 24/06/2011 The new boiler house's operational costs were excluded as they are comparable to the fuel oil boiler houses' operational costs.	Conclusion on Response 1 During the site visit necessary justifications were presented by AIE. CAR is closed.

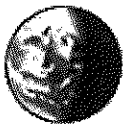
CAR 14. Please justify the applicability of the methodology recommended in the resolution of the Russian Government #1470 of 22 November 1997 which relates to budget rather than project financing. Please take note: it is not possible to open the whole document by reference 7.	29 (b)	Response 1 from 24/06/2011 Another methodology was proposed for discount rate determination. Corresponding changes were made in PDD. See pp. 24-25.	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.
CAR 15. Please avoid unnamed figures from the spreadsheet "SSM (version 1)_fin_eng" such as 0.85 and 9.59 from the formulae for "reduction in heavy fuel oil consumption calculation".	29 (b)	Response 1 from 24/06/2011 Correction was made; see a new version of the Economic spreadsheet.	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.
CAR 16. Please provide calculation of sensitivity analysis in excel spreadsheet.	29 (b)	Response 1 from 24/06/2011 Sensitivity analysis was made; see a new version of the Economic spreadsheet.	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.
CAR 17. Please justify the values of electricity consumption in the new biofuel boiler house and in the old "Russian" and "Finnish" boiler houses indicated in PDD Section B.3.	32 (a)	Response 1 from 24/06/2011 Please see the letter № 08-171 dated 04/02/2002 from the Chief Power Engineer of Solombala SWP to the Director of JSC "Arkhgiprodrev" which is the project documentation developer. Provided to BVC.	Conclusion on Response 1 CAR is closed based on due justifications provided to AIE.

CAR 18. Calculation of the haul distance increase (1.4 km) indicated in Section B.3 is incorrect. Moreover, the usage of MAZ trucks with its characteristics (30 bulk m^3, 40 litres per 100 km) should be justified. Indicated emission factor for diesel is incorrect (it should be 0.0741 tCO2e/GJ).	32 (a)	Response 1 from 24/06/2011 New calculation approach was introduced. See PDD's p. 27 for details.	Conclusion on Response 1 PP reassessed its project emissions due to biomass combustion in the boiler house. Emissions of CH4 and N2O became significant (more than 2000 tonnes of CO2-eq.). Emissions from trucks were assessed as leakage and reasonably considered negligible. CAR is closed.
CAR 19. Paragraph 14 (a) (iii) of the "Guidance on criteria for baseline setting and monitoring" reads: "project boundary shall encompass all anthropogenic emissions by sources of GHGs which are: significant, would by each source account on average per year over the crediting period for more than 1 per cent of the annual average anthropogenic emissions by sources of GHGs, or exceed an amount of 2,000 tones of CO2 equivalent, whichever is lower". As project emissions are zero all emissions (from wood waste supply to the boiler house, from increase in emissions of methane and nitrogen oxide from combustion of wood wastes) are more than 1% of the annual average anthropogenic emissions and must be treated as significant.	32 (a)	Response 1 from 24/06/2011 The concept of anthropogenic emissions related to wood waste transportation was reconsidered. Now they are treated as leakages. At the same time emissions of methane and nitrogen oxide from combustion of wood wastes were included as project emissions and determined as significant. Corresponding changes were made in PDD, see pp.27, 30, 34, 43. Response 2 from 27/06/2011 Corrections were made. See PDD's pp. 30, 43.	Conclusion on Response 1 The response is accepted in main; however, CAR will be closed when units of measurement for EF_{CH4} and EF_{N2O} will be corrected in the formulae D.1-2 and E.1-1. CAR is not closed. Conclusion on Response 1 CAR is closed based on due corrections made to PDD.
CAR 20. Please avoid term "baseline boundary" from Fig. B.3-1 as it is absent in JI.	32 (a)	Response 1 from 24/06/2011 Correction was made, see PDD's p. 26	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.

CAR 21. Please explicitly indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.	36 (m)	Response 1 from 24/06/2011 Corresponding changes were made, see Section D of the PDD, p. 30	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.
CAR 22. Please describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected.	40 (a)	Response 1 from 24/06/2011 Leakages due to power supply from the external power grid for operation of biofuel boiler house and combustion of fossil fuel and BWW transportation to biofuel boiler house were calculated and excluded from further consideration as insignificant. See p. 27 of the PDD.	Conclusion on Response 1 The response is accepted by the AIE. CAR is closed based on due corrections made to PDD.
CAR 23. Please list the documentation concerning the environmental impact of the project. Take note: by the time of design of project documentation environmental impact assessment was not an integral part of Design Documentation, therefore the project should have gone through evaluation of environmental impact assessment procedure (OVOS).	48 (a)	Response 1 from 24/06/2011 The following documents concerning the environmental impact of the project were obtained: - positive review of the State Environmental Appraisal Committee No.520 dated July 26, 2002 for the preliminary design documentation, containing an executive summary and environmental justification; - positive review of the State Environmental Appraisal Committee No.658 dated September 23, 2002 for the design documentation, containing an executive summary and corrected specification of maximum permissible emissions. This information was added to the PDD, see p.49	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.

CAR 24. Please justify the origination of carbon dioxide emission volume (13.665) as per Table F.1. Please take note: reduction in CH4 emissions was not indicated; the new pollutant "coal ash" emerged.	48 (a)	Response 1 from 24/06/2011 Table F.1. was taken from the source [R1], p.20. There were misprints during translation. Instead of carbon dioxide this cell represents nitrogen dioxide reduction in emissions and "coal ash" means "wood ash". Only direct boiler house pollutant emissions were included in this table so it doesn't indicate CH_4 emissions related to stockpiles. Corresponding changes were made, see Section D of the PDD, p. 47	Conclusion on Response 1 CAR is closed based on due corrections made to PDD.
CL 01. Please clarify - who is the exact consumer of the heat; - are the drying chambers located on industrial site №2; - is produced heat transported to the nearby Solombalsky PPM or another consumer?	A.4	Response 1 from 24/06/2011 The exact consumers of the heat are located only on industrial site №2. Main consumers are drying chambers. Minor use is for heating of industrial site №2 shops. No heat is transported outside.	Conclusion on Response 1 CL is closed based on due clarifications made.
CL 02. Please clarify the meaning of sentence on the page 7 "The heat medium is water: 105^{0}C at the inlet and 70^{0}C at the outlet"? Why the water temperature at the inlet is higher than at the outlet? Moreover, please clarify the exact output of the project boiler house (is it heat, or steam, or hot water, and where it is transferred)?	A.4	Response 1 from 24/06/2011 There were misprints during translation. Right statement is 105^{0}C at the outlet and 70^{0}C at the inlet. The output medium is hot water that transported to the final consumers on industrial site №2 via pipelines.	Conclusion on Response 1 CL is closed based on due corrections made to PDD.

CL 03. Please clarify: - what is the purpose of the other two boiler houses (combusting residual fuel oil) indicated in the description of Alternative H3; - does the heat meter measure the heat from the new boiler house (biofuel) and other boiler houses;	23	Response 1 from 24/06/2011 - The installation of the coal fired boiler house will cause decommissioning of two existing mazut boiler houses as coal is much cheaper than residual fuel oil. This fact was mentioned just to explain what would have happened with existing boiler houses if a coal fired boiler had been constructed. - the heat meter measures only biofuel boiler house output.	Conclusion on Response 1 CL is closed based on due clarifications made.
CL 04. Please clarify how the monitored data will be recorded.	36 (e)	Response 1 from 24/06/2011 Monitored data will be recorded electronically and on paper. Corresponding information was added to the PDD, p. 30	Conclusion on Response 1 CL is closed based on due clarifications made.



Pedro Pastrana/RUS/VERITAS

18.07.2011 11:09

To Vera Skitina/RUS/VERITAS@VERITAS, Leonid Yaskin/RUS/VERITAS@VERITAS

cc Victoria Hegai/RUS/VERITAS@VERITAS, Olga Obuhova/RUS/VERITAS@VERITAS, Natalia Ivakhina/RUS/VERITAS@VERITAS

bcc

Subject заявка на отгулы.

Dear Vera,

прошу Вас предоставить 4 дня отгула по семейным обстоятельствам за ранее отработанное время:
- на 20, 21, 22 июля;
- на 05 августа (перепланировать аудит ФГУП "ЭХО").

Best regards,
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