DETERMINATION REPORT

CLIMATE CHANGE GLOBAL SERVICES (CCGS)

Determination Report on JI Project
"Biomass wastes to energy at OJSC "Ilim Group" Branch in the town of Bratsk"
RUSSIAN FEDERATION

BUREAU VERITAS CERTIFICATION

REPORT NO. RUSSIA/0025-2/2009, REV. 01

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DETERMINATION REPORT

Date of first issue: 08/07/2009	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CCGS Ltd.	Client ref.: Mr. Ilya Goryashin

Summary:

Bureau Veritas Certification has made the determination of the project "Biomass wastes to energy at OJSC "Ilim Group" Branch in the town of Bratsk", Russian Federation, 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 guidelines and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria. The determination is carried out under Track 1 as per Glossary of JI terms, in line with paragraph 23 of the JI guidelines.

The determination scope is defined as an independent and objective review of the project design document, the project's baseline, monitoring plan and other relevant documents, and consists of the following three phases: i) desk review of the project design document and particularly 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, Table 5. Taking into account this output, the project proponent has 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.: RUSSIA/0025-2/2009	Subject Group: JI
Project title: Biomass wastes to energy at OJSC "Ilim Group" Branch in the town of Bratsk	
Work carried out by: Flavio Gomes – Team leader, Lead verifier Leonid Yaskin – Team member, verifier George Klenov – Team member, verifier	
Work verified by: Ashok Mammen - BVC Technical Manager for Climate Change, Internal reviewer	

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Indexing terms:

Climate Change, Kyoto Protocol, JI, Emission Reductions, Verification,

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Abbreviations change / add to the list as necessary

AIE	Accredited Independent Entity
BPPM	Bratsk Pulp and Paperboard Mill
BTIC	Bratsk Timber Industry Complex
BV	Bureau Veritas
BWW	Bark and wood wastes
CAR	Corrective Action Request
CCGS	Climate Change Global Services (LLC)
CHPP	Combined Heat and Power Plant
CL	Clarification Request
CO_2	Carbon Dioxide
CPP	Cardboard and Paper Production
DDR	Draft Determination Report
DR	Document Review
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ERU	Emission Reduction Unit
FBC	Fluidized bed combustion
GHG	Green House Gas(es)
HYP	Hydrolysis yeast plant
HYW	High yield workshop
I	Interview
IE	Independent Entity
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate Return
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
LRB	Liquor recovery boilers
LTS-furnace	Low-temperature swirling-type furnace
MoV	Means of Verification
NGO	Non Governmental Organization
NPV	Net Present Value
PCF	Prototype Carbon Fund (World Bank Carbon Finance Unit)
PDD	Project Design Document
PP	Project Participant
PPM	Pulp and Paper Mill
THPP	Technological heat and power plant
UNFCCC	United Nations Framework Convention for Climate Change
WCP	Wood chemical production
WWS	Wastewater sludge

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1 Introduction

Climate Change Global Services, LLC has commissioned Bureau Veritas Certification to determine its JI project “Biomass wastes to energy at OJSC “Ilim Group” Branch in the town of Bratsk” (hereafter called “the project”) located in Irkutsk Region, Russian Federation. Climate Change Global Services (CCGS) coordinates the project and the determination process on behalf of the project participant OJSC “Ilim Group” Branch in the town of Bratsk.

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 purpose of the determination is to provide an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan, 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 emission reduction 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 (PDD), the project’s baseline study (BLS) and monitoring plan (MP) and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements for Joint Implementation (JI) projects, the guidelines for the implementation of Article 6 of the Kyoto Protocol (Decision 16/CP.7) as agreed in the Marrakech Accords, in particular the verification procedure under the JI Supervisory Committee, and associated interpretations. Bureau Veritas Certification has, based on the recommendations in the Validation and Verification Manual (IETA/PCF), employed a risk based approach in the determination process, focusing on the identification of significant risks for project implementation and generation of ERUs.

The determination is not meant to provide any consulting towards CCGS. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 GHG Project Description

The project is implemented on the site of OJSC "Ilim Group" Branch in the town of Bratsk (the former OJSC "Bratsk Pulp and Paper Mill"), Irkutsk Region, Russia.

Open Joint Stock Company "Ilim Group" (OJSC "Ilim Group") is the largest company of the Russian pulp and paper industry founded in 1992 as Closed Joint Stock Company "Ilim Pulp Enterprise". The strategic partner of OJSC "Ilim Group" and the holder of 50% of its shares is the world's largest pulp and paper company, "International Paper". The company's enterprises located in the Leningrad, Arkhangelsk and Irkutsk Regions account for 65% of Russia's overall market pulp production and for over 25% of paperboard production. The total annual production of pulp and paper by the company is over 2.5 million tonnes.

The OJSC "Ilim Group" Branch in the town of Bratsk was set up in 1997 by including Bratsk Timber Industry Complex (BTIC) into Closed Joint Stock Company "Ilim Pulp Enterprise". BTIC consists of Bratsk Pulp and Paperboard Mill (BPPM) and a number of neighboring woodworking and wood chemical enterprises.

BPPM is one of the largest producers of pulp and paperboard in Russia, the traditional supplier of South-East Asian markets. The Mill's total annual yield of pulp and paper products is over 715 000 tonnes.

The project is aimed at efficient utilization of high-moisture biomass wastes for production of heat and electricity for auxiliary needs of OJSC "Ilim Group" Branch in the town of Bratsk.

The project envisages complex modernization of the energy system of Bratsk Pulp and Paperboard Mill (BPPM) and switching of the boiler equipment to fluidized bed combustion of bark and wood wastes (BWW) and wastewater sludge (WWS). The core business of BPPM is production of pulp and paperboard. Pulp chips are used for pulp cooking. The pulp chips production yields large quantities of BWW. Also some quantity of BWW is supplied to BPPM from the neighbouring woodworking enterprises which do not have their own utilization capacities. WWS is generated at the biological treatment plant for the Mill's industrial effluents.

Heat and electricity are produced at the Mill by the technological heat and power plant (THPP) consisting of three sites: CHPP-2, CHPP-3 and the boiler house interconnected by steam pipelines and power transmission lines. THPP uses residual fuel oil, BWW and black liquor as fuel. Prior to the project implementation BWW have been combusted in utilizing boilers No. 9 and No.10 of CHPP-2 and in utilizing boiler No.15 of the boiler house. It was possible to achieve stable burning of BWW only by using residual fuel oil for flame stabilization. Basically only relatively dry wood wastes (sawdust and wood sliver) was used, whereas high-moisture bark (moisture content up to 70%) was mostly disposed at the dump. WWS with even higher moisture content has never been utilized at all and the entire quantity of it is disposed at the dump.

The shortfall of heat and electricity at the Mill is covered by CHPP-6 of OJSC "Irkutskenergo" located in close vicinity to BPPM. The main fuel of CHPP-6 is lignite. In the absence of the project the Branch management would have carried on with the existing practice of waste biomass handling, heat and electricity generation and purchase of energy from OJSC "Irkutskenergo" to bridge the shortfall.

The project envisages complex modernization of the energy system of BPPM in three stages.

The first stage:

- reconstruction of E-75-40K boiler unit No.16 for BWW combustion without residual fuel oil firing (or any other fossil fuel) for fuel stabilization due to implementation of fluidized bed combustion technology designed by "INECO".

The second stage:

- reconstruction of E-75-40K boiler unit No.14 for BWW combustion without residual fuel oil firing for fuel stabilization with increase of steam output to 90 t/h due to implementation of fluidized bed combustion technology designed by "INECO".

The third stage:

- installation of a new E-90-3.9-440DFT boiler unit No.15 designed for fluidized bed combustion of BWW and WWS without residual fuel oil firing for fuel stabilization using "Kvaerner Power" technologies (Finland);
- modernization of BWW feed system of renewed utilizing boilers No.14, No.15 and No.16;
- modernization of the thermal flow diagram of THPP.

As a result of the project the following will be achieved:

- ✓ practically all BWW generated on the territory of the Branch (including BPPM and neighbouring woodworking enterprises) will be utilized and BWW disposal at the dump will be almost completely avoided;
- ✓ a significant proportion of WWS will be utilized with a respective reduction of WWS disposal at the dump;
- ✓ in-house production of heat and electricity will increase;
- ✓ residual fuel oil consumption in the Mill's fuel balance will reduce;
- ✓ the system of energy supply of the production will be optimized, its reliability and cost-efficiency will be improved;
- ✓ negative environmental impact will be reduced,
- ✓ reduction of greenhouse gas (GHG) emissions will be 278 thousand tonnes of CO2e/year, on average.

Implementation of the first stage began in April 2000 and was completed in June 2001. The required amount of investments into the first stage totalled to EUR 1.6 million. In many respects it was a pilot stage with the objective to study the possibility of applying new BWW combustion technologies and to check them. The second stage builds on the results and findings of the first stage.

Implementation of the second stage required by far more time and investments. The second stage was implemented from April 2002 till June 2004. The required investments into the second stage totalled to about EUR 4 million. Implementation of the third stage began in June 2007. All construction and installation works are planned to be completed by the 1st March 2010. The required investments into the third stage amount to around EUR 24.6 million.

It should be noted that the project is clearly environment-oriented. Implementation of the project faces a number of serious technological, operational and financial barriers. The decision to go forward with the project was taken by the company management in view of the existing opportunity to cover some of its costs and to offset project risks by selling GHG emission reductions.

Quality, environment and industrial safety management systems at Bratsk Branch meet the international standards of ISO 9001, ISO 14001 and OHSAS 18001.

To this end in 2008 the company began cooperation with CCGS Ltd., which acts as a consultant and a commercial agent of OJSC “Ilim Group”.
CCGS Ltd. is not a project participant.

Project implementation became possible due to Joint Implementation (JI) mechanism under the Kyoto Protocol. The revenue from sales of the emission reduction units (ERU) increases the investment attractiveness of this project.

1.4 Determination team

The determination team consists of the following personnel:

Flavio Gomes
Bureau Veritas Certification - Team Leader, Lead verifier

Leonid Yaskin
Bureau Veritas Certification – Team member, verifier

George Klenov
Bureau Veritas Certification - Team member, verifier

Ashok Mammen
Bureau Veritas Certification – Internal Technical Reviewer

2. Methodology

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

The determination consisted of the following three phases:

i) desk review of the project design document and the baseline and monitoring plan;
ii) on-site assessment (June 08th – 09th 2009);

iii) resolution of outstanding issues (ref. to Appendix A Table 5 with CAR's and CL's) and the issuance of the final determination report and opinion.

In order to ensure transparency, a determination protocol was customized for the project, according to the Determination and Verification Manual (IETA/PCF).

The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The determination protocol serves the following purposes:

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

The original determination protocol consists of five tables. The different columns in these tables are described in Figure 1.

The completed determination protocol is enclosed in Appendix A to this report. It consists of four tables. Table 3 for "Baseline and Monitoring Methodologies" is omitted because the project participants established their own baseline and monitoring approach that is in accordance with appendix B of the JI Guidelines and the questions regarding the used methodology are present in Table 2.

Determination Protocl Table 1: Mandatory Requirements			
Requirement	**Reference**	**Conclusion**	**Cross reference**
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** or a **Clarification Request (CL)** of risk or non-compliance with stated requirements. The CAR's and CL's are numbered and presented to the client in the Determination Report.	Used to refer to the relevant protocol questions in Tables 2, 3 and 4 to show how the specific requirement is validated. This is to ensure a transparent determination process.

Determination Protocol Table 2: Requirements checklist				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 3: Baseline and Monitoring Methodologies				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements of baseline and monitoring methodologies should be met. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 4: Legal requirements				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The national legal requirements the project must meet.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question. (See below). **Clarification Request (CL)** is used when the determination team has identified a need for further clarification.

Determination Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report corrective action and clarifications requests	**Ref. to checklist question in tables 1/2/3/4**	**Summary of project owner response**	**Determination conclusion**
If the conclusions from the Determination are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 1-4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the determination team should be summarized in this section.	This section should summarize the determination team's responses and final conclusions. The conclusions should also be included in Tables 1-4 under "Final Conclusion".

Figure 1 Determination protocol tables

2.1 Review of Documents

The Project Design Document (PDD) submitted by CCGS and additional background documents related to the project design, baseline, and monitoring plan, i.e. Kyoto Protocol, Host Country Laws, Guidelines for Users of the Joint Implementation Project Design Document Form, JISC Guidance on Criteria for Baseline Setting and Monitoring, Combined tool to identify the baseline scenario and demonstrate additionality and others were reviewed.

The deliverable of the document review was the Draft Determination Report (DDR) version 01 with CAR's and CL's which were submitted to CCGS on 18 June 2009. The determination findings presented in this DDR versions relate to the project as described in the original PDD version 1.0 dated 20.03.2009.

CCGS has submitted the completed PDD, version 1.1, dated 23.06.2009 which was issued by the PDD developer as a response to the DDR version 01. The amendments done in the PDD version 1.1 have been taken into account in this Determination Report.

2.2 Follow-up Interviews

Bureau Veritas Certification verifier George Klenov conducted a visit to the project site on 8th - 9th June 2009. On-site interviews with project stakeholders were conducted to confirm selected information and to resolve issues identified in the document review. Representatives of OJSC "Ilim Group" Branch in the town of Bratsk, and CCGS were interviewed (see References in Section 6). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
OJSC "Ilim Group" Branch in the town of Bratsk	➢ History of the project ➢ Business Plan ➢ OJSC "Ilim Group" Branch in the town of Bratsk pulp production programme ➢ Baseline scenario parameters ➢ Project management organisation ➢ Environmental Impact Assessment ➢ Public Hearings ➢ Attendance of production facilities ➢ Project monitoring responsibilities ➢ Monitoring equipments ➢ Technical project design ➢ Quality control and quality assurance procedures
CCGS	➢ Baseline scenario ➢ Monitoring plan ➢ Investment analysis ➢ Additionality justification ➢ Common practice analysis ➢ Estimation of the methane emissions from the dump ➢ Conformity of PDD to JI requirements

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 followed on by the project participants for Bureau Veritas Certification positive conclusion on the project design.

Corrective Actions Requests (CAR) are issued, where:

i) there is a clear deviation concerning the implementation of the project as defined the PDD;
ii) requirements set by the Methodological Procedure or qualifications in a verification opinion have not been met; or
iii) there is a risk that the project would not be able to deliver high quality ERUs.

Clarification Requests (CL) are issued where

iv) additional information is needed to fully clarify an issue.

A Draft Determination Report, version 01, summarising Bureau Veritas Certification's findings, was submitted to the project participants on 18/06/2009. The findings identified have been fourteen Corrective Action Requests, one Clarification Request. Based on the findings of the Draft Determination Report, CCGS made necessary amendments and corrections to the PDD Version 1.0 and, eventually, the Version 1.1 dated 23/06/2009 was issued and submitted to Bureau Veritas Certification for review.

The amendments and corrections made by the project participants to the PDD and the additional information and clarifications provided by them satisfactorily addressed BV Certifications' items of concern and, as a result, the Determination Report Version 01 was issued on 08/07/2009. On the same day the Determination Report Version 01 and PDD Version 1.1 were conveyed to Bureau Veritas Certification Internal Technical Reviewer (ITR) for review.

To guarantee the transparency of the determination process, the CAR's and CL's raised are summarized in Appendix A, Table 5.

3 Determination Findings

In the following sections, the findings of the determination are presented for each determination subject as follows:

i) the findings from the desk review of the original project design document and the findings from interviews during the site visit are summarized. A more detailed record of these findings can be found in the Appendix A Determination Protocol.
ii) where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the determination protocol criteria or the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The

Clarification and Corrective Action Requests are stated in the in Appendix A Determination Protocol.

iii) where Clarification and Corrective Action Requests have been issued, the response by the project participants to resolve these requests is summarized in Appendix A, Table 5.

iv) the conclusions of the determination are presented consecutively.

3.1 Project Design

The project provides reduction of GHG emissions by reducing of:
- the proportion of residual fuel oil in the Mill's fuel balance due to the realisation of fluidized bed combustion (FBC) of biomass;
- lignite combustion at CHPP-6 due to increase of BPPM's own heat production;
- biomass (BWW and WWS) disposal at the dump.

The project uses the state-of-art technology. It envisages modernization of the two boilers E-75-40K and construction of a new high-technology boiler E-90-3,9-440ДТФ with the technology of FBC that allows to utilize practically all BWW and WWS with great moisture content generated on the territory of the Bratsk's Branch with a respective reduction of BWW and WWS disposal at the dump.

The outcomes of project activity will be the following effects:

- mitigation of adverse environmental impacts; and
- average reduction of GHG emissions by 278 256 tonnes of CO_2e/year over the period 2008-2012. Total estimated emission reductions will equal 1 391 280 tCO2e over 5 year crediting period starting in 2008.

The project design is sound. The geographical and spatial boundary is clearly defined.

OJSC "Ilim Group" Branch in the town of Bratsk" made a decision on implementation of this project on 28 April, 2000 (this date is considered to be the actual project starting date – the reconstruction of E-75-40K boiler unit No.16 for BWW combustion without residual fuel oil firing for fuel stabilization due to implementation of fluidized bed combustion technology designed by "INECO"). This first stage was completed in June 2001.

The second stage (reconstruction of E-75-40K boiler unit No.14) builds on the results and findings of the first stage. Implementation of the second stage required by far more time and investments. The second stage was implemented from April 2002 till June 2004.

Implementation of the third stage (installation of a new E-90-3.9-440DFT boiler unit No.15 designed for fluidized bed combustion of BWW and WWS without residual fuel oil firing for fuel stabilization using "Kvaerner Power" technologies) began in June 2007. All construction and installation works are planned to be completed by the 1st of March, 2010.

Implementation of the project met and faces a number of serious technological, operational and financial barriers. The decision to go forward with the project was taken by the company management in view of the existing opportunity to cover some of its costs and to offset project risks by selling GHG emission reductions. The project is clearly environment-oriented.

Identified areas of concern as to Project Design, PP's responses and BV Certification's conclusions are described in Appendix A Table 5 (refer to CAR 02, CAR 03, CL 01).

The project has no approvals by the Parties involved, therefore CAR 01 remains pending.

3.2 Baseline and Additionality

Following Clause 20 (b) of JISC "Guidance for baseline setting and monitoring", the project participants established their own baseline approach that is in accordance with appendix B of the JI Guidelines.

The baseline scenario assumes continuation of the existing practice of firing bark and wood wastes generated within BTIC in the utilizing boilers of CHPP-2 and the boiler house. The biomass wastes that are not utilized will be disposed at the dump. The shortfall of heat and electricity will be supplied from CHPP-6 and from the external power grid.

The baseline scenario is business as usual within the framework of the existing standards and rules which do not prohibit combustion of BWW by BPPM in the existing boilers using residual fuel oil (or any other fossil fuel) for flame stabilization nor are there any restrictions as to biomass disposal at dump. The baseline scenario is reasonably conservative and is by far less costly than the project activity. It should be also noted that there are no GHG emission caps in Russia for individual companies and according to projections such are not expected at least until 2012.

To prove the project additionality, the routine provisions of the CDM "Combined tool to identify the baseline scenario and demonstrate additionality" (Version 02.2) were implicitly followed.

The following Alternatives to the stages 1 and 2 of JI project were identified: 1- Continuation of the current situation; 2 - Installation of new boilers running on fossil fuel; 3 - Project activity without JI mechanism.

For stage 3 the following four alternatives were identified: 3.1 -Continuation of the current situation; 3.2 - Decommissioning of CHPP-2 boiler equipment, increase of energy purchase from the outside; 3.3 - Installation of new boilers running on fossil fuel; 3.4 - The project activity without JI mechanism. Each alternative was reviewed.

These scenarios are not in contradiction with the mandatory legislation and regulations. Each alternative was reviewed.

The alternative analysis, investment and sensitivity analysis, barrier analysis and common practice analysis have demonstrated that the proposed project

activity is not financially attractive and not economically or financially feasible, without the revenue from the sale of emission reduction units (ERUs). Accordingly, the Alternatives 1 was taken as the baseline.

The investment analysis was carried out in terms of NPV. The discount rate (hurdle rate of return) was duly derived from Russia 2030 Eurobonds rates, increased by a suitable risk premium to reflect private investment and the project type in accordance with the verified project owner allowances, generally in line with the publicly available financial data referred to in the PDD.

The sensitivity analysis that was carried out showed that even under the optimistic assumptions the Project is still economically unattractive.

Common practice analysis showed that Bratsk Pulp and Paperboard Mil, for the first time in Russia, implemented a unique set of technical solutions for reconstruction and modernization of its boilers using FBC state-of-the-art technologies.

Identified areas of concern as to Baseline and Additionality, PP's responses and BV Certification's conclusions are described in Appendix A Table 5 (refer to CAR 04, CAR 05, CAR 06, CAR 07, CAR 08, CAR 09).

Identified areas of concern as to Project Duration / Crediting Period, PP's responses and BV Certification's conclusions are described in Appendix A Table 5 (refer to CAR 10).

3.3 Monitoring Plan

The monitoring plan is defined on the basis of CCGS's approach in accordance with the specifics of the project and requirements of *Decision 9/CMP.1*, *Appendix B* without using any approved methodologies.

Collection of data required for estimation of GHG emission reductions is performed to high industry standard and the best practice of fuel and energy monitoring and environmental impact assessment.

An operational and management structure that the project participant will implement in order to monitor emission reduction is clearly described in the PDD. The site visit confirmed the availability and operationability of this structure. Monitored data quality assurance and quality control procedures are backed up by the Quality and Environmental Management Systems certified to ISO 9001 and ISO 14001.

Identified area of concern as to Monitoring Plan, PP's response and BV Certification's conclusion are described in Appendix A Table 5 (refer to CAR 11).

3.4 Calculation of GHG Emissions

The formulas used for calculation of baseline and project emissions are presented in PDD Section D. The initial data for calculations and the calculated values are presented in Section E. The verifiers checked the calculations completed in the amended PDD version 1.1 and found them accurate.

Implementation of the project will lead to reduction of GHG emissions from combustion of fossil fuel and anaerobic decomposition of biomass wastes at the dump.

The principal GHG released during combustion of fossil fuel is CO_2. Emissions of CH_4 and N_2O from combustion of fossil fuel are negligibly small as compared with CO_2 emissions and were neglected in development of this project. Anaerobic decomposition of biomass wastes at the dump is accompanied by release of methane. Emissions of CO_2 from biomass combustion are climatically neutral and are assumed equal to zero.

The key factors that characterize the project scenario are:

- combustion of BWW and WWS;
- heat production;
- fossil fuel combustion;
- heat supply;
- electricity supply.

Each factor is considered in detail in the PDD.

The baseline scenario assumes continuation of the existing practice of firing bark and wood wastes generated within BTIC in the utilizing boilers of CHPP-2 and the boiler house. The biomass wastes that are not utilized will be disposed at the dump. The shortfall of heat and electricity will be supplied from CHPP-6 and from the external power grid.

The baseline scenario is business as usual within the framework of the existing standards and rules which do not prohibit combustion of BWW by BPPM in the existing boilers using residual fuel oil (or any other fossil fuel) for flame stabilization nor are there any restrictions as to biomass disposal at dump. The baseline scenario is reasonably conservative and is by far less costly than the project activity. It should be also noted that there are no GHG emission caps in Russia for individual companies and according to projections such are not expected at least until 2012.

The key factors that determine GHG emissions under the baseline scenario are as follows:

- heat production;
- heat supply;
- fossil fuel combustion;
- electricity supply;
- electricity consumption from the external power grid;
- BWW and WWS disposal at the dump.

Each factor is considered in detail in the PDD.

The calculated value of project emission reduction over the crediting period 2008 – 2012 is 1 391 280 tCO2e.. Annual average emission reduction is 278 256 tCO2e/year.

No areas of concern as to Calculation of GHG Emissions are identified.

3.5 Environmental Impacts

There are no significant adverse environmental impacts resulting from implementation of activities within the frameworks of this project.

The environmental impact assessment of the project was carried out in accordance with the Russian legislation within the framework of the design documentation development for reconstruction of boilers No.16 and No.14, and for installation of boiler No.15.

Switching of E-75-40K boiler No.16 (as well as boiler No.14) to fluidized bed combustion of BWW has led to increased fly ash emissions into the atmosphere because the real volume of fuel combustion has increased, meanwhile the demand for land area for BWW stockpiling has reduced. Installation of efficient ash collecting equipment helped to reduce ash content in flue gases down to the technically attainable level.

Arrangement of two-stage low-temperature combustion of BWW created favorable conditions for significant limitation of thermal NO_x generation. This process was facilitated by reducing conditions of the first combustion stage (furnace extension) and by relatively low flame temperatures of the second stage (boiler furnace).

Commissioning of new E-90-3.9-440DFT boiler No.15 will not lead to increase of pollutant emissions into the atmosphere. The level of impact upon air, surface waters and land resources is within the permissible limits.

The project implementation will lead to reduction of lignite combustion at CHPP-6, which produces a large quantity of harmful emissions, and to reduction of fossil fuel combustion at grid power plants.

In general, the project implementation will lead to mitigation of negative environmental impacts.

Thereby the project has met the key requirements of Russian environmental legislation.

Identified area of concern as to Environmental Impacts, PP's response and BV Certification's conclusion are described in Appendix A Table 5 (refer to CAR 12).

3.6 Comments by Local Stakeholders

The project does not have any significant environmental impacts and has al required by host Party permits.

The public of the town was informed about the planned implementation of the project through the local mass media: “Bratskyi Lesokhimik” No.37 dated 15 May 2002 and No.89 dated 15 November 2002; “Rabochaya Smena” No.1 dated 14 January 2008, No.27 dated 18.07.2008 and No.38 dated 3 October 2008. No comments from the town’s community were received. This publication has not given rise to any public comments.

Identified area of concern as to Comments by Local Stakeholders, their responses and BV Certification’s conclusions are described in Appendix A Table 5 (refer CAR 13, CAR 14).

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

Similar to the Verification procedure under the Article 6 Supervisory Committee, Bureau Veritas Certification published the PDD Version 01 on BVC site *www.bureau-veritas.ru* on 28.05.2009 and invited comments within 26.06.2009 by Parties, stakeholders and non-governmental organizations.

No comments from third parties have been received.

5 DETERMINATION OPINION

Bureau Veritas Certification has been engaged by Climate Change Global Services (CCGS) to perform a determination of the JI project “Biomass wastes to energy at OJSC “Ilim Group” Branch in the town of Bratsk”. The determination was performed on the basis of UNFCCC criteria for JI projects, in particular the verification procedures under the JI Supervisory Committee, as well as host country criteria and the criteria given to provide for consistent project operations, monitoring and reporting.

The determination was carried out under Track 1 as per Glossary of JI terms, in line with paragraph 23 of the JI guidelines.

The determination is based on the information made available to us and on the engagement conditions detailed in this report. The determination has been performed using a risk-based approach as described above. The only purpose of the report is its use for the formal approval of the project under JI mechanism. Hence, Bureau Veritas Certification cannot be held liable by any party for decisions made or not made based on the determination opinion, which will go beyond that purpose.

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 issuance of the determination report and opinion.

The review of the project design documentation, the subsequent follow-up interviews, and the resolution of the Corrective Action Requests and Clarification Requests have provided Bureau Veritas Certification with the sufficient evidences to determine the fulfilment of the above stated criteria and to demonstrate that the project is additional.

An analysis of the investment and barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that it is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

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 (Russian Federation). 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 1.1 dated 23/06/2009 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

Bureau Veritas Certification thus recommends this project for the formal approval by the Russian Federation as the JI project in accordance with the RF Government Decree N 332 dated 28/05/2007.

Flavio Gomes – Team leader, Lead verifier

Leonid Yaskin – Team member, verifier

George Klenov – Team member, verifier

Ashok Mammen – Internal Technical Reviewer

BUREAU VERITAS CERTIFICATION Reviewed Init Date: 14/07/09

Bureau Veritas Certification Holding SAS

6 REFERENCES

Reviewed document or Type of Information referred to in Appendix A

1	PDD “Biomass wastes to energy at OJSC “Ilim Group” Branch in the town of Bratsk” Version 01, dated 10/02/2009.
2	Guidelines for Users of the Joint Implementation Project Design Document Form/Version 03, JISC.
3	Glossary of JI terms/Version 01, JISC.
4	Guidance on criteria for baseline setting and monitoring. Version 01. JISC.
5	Tool for the demonstration and assessment of additionality. Version 05.2. EB 39, Annex 10.
6	JISC “Clarification regarding the public availability of documents under the verification procedure under the Joint Implementation Supervisory Committee.” Version 02.
7	Bureau Veritas Certification audit report on the Certification Audit of the OJSC “Ilim Group” Branch in the town of Bratsk” Integrate Management System to ISO 9001, ISO 14001, 17 – 21 November 2008.
8	2006 IPCC Guidelines for National Greenhouse Inventories, v.2, Energy.
9	Operational Guidelines for Project Design Documents of Joint Implementation Projects. Volume 1. General Guidelines. Version 2.3. Ministry of Economic Affairs of the Netherlands. May 2004.
10	B.V.Sazanov, V.I.Sitas. Heat Energy Systems at Industrial Enterprises. M.: Energoatomizdat, 1990.
11	On approval of methodological instructions for examination of project documentation. Order by the Ministry of Economic Development and Trade of the RF, dated 20 December 2007, N 444.
12	RF Government Decree No. 332, dated 28 May 2007, Procedure for Approval and Verification of Status of Projects Carried Out in Accordance with Article 6 Of the Kyoto Protocol to the United Nations Framework Convention on Climate Change.
13	Methane and Nitrogen Oxide Emissions from Biomass Waste Stockpiles, PCFplus Research, World Bank, August 2002.
14	The World Resources Institute (WRI) and World Business Council for Sustainable Development. 2001. Calculating CO2 emissions from mobile sources - Guide to calculation worksheets. Washington, DC: World Resources Institute.

Document or Type of Information obtained at the site visit
References in Appendix A are underlined

1	Project “Reconstruction of the boiler No.16 of E-75-40K type”, JSC “Engineering and Power Company” (INECO), OJSC “BPPM”, Moscow, 2000, v.1, “General Explanatory Note”, 41.99.ПЗ, part 13 “Environmental Protection”.
2	Project “Reconstruction of the boiler No.14 of E-75-40K type”, OJSC “BPPM”, Bratsk, 2002, v.1, “General Explanatory Note”, 53.01.GEN; v.4 “Environmental Protection during Construction and Exploitation”, 53.01.EP.
3	Project “Installation of the boiler No.15 of E-90-3,9-440ДТФ type”, OJSC “Sibgiprobum”, JSC “Energomash – East Siberia”, Irkutsk, 2008, v.I, “General Explanatory Note”; v.II “Environmental Protection”.

4	Statement of the State Environmental Expertise approved by the order of Rostechnadzor Office in the Irkutsk Region (on the project of installation of the boiler No.15 of E-90-3,9-440ДТФ type for fluidized bed combustion of bark and wood wastes), dated 30.10.2008, No16-7767.
5	Permit of the Russian Federal and Industrial Inspection (for operation of the boiler No.14) dated 21.05.2004, No. PPC 03-12335.
6	Passport of the boiler No.16 of E-75-40K type, reg. No4624 (Permit of the Russian Federal and Industrial Inspection dated 28.06.2001).
7	Act of Acceptance "Acceptance of the boiler No.16 of E-75-40K type completed by construction", OJSC "Ilim Group" Branch in the town of Bratsk", dd.31.08.2004.
8	Act of Acceptance "Acceptance of the boiler No.14 of E-75-40K type completed by construction", OJSC "Ilim Group" Branch in the town of Bratsk", dd.23.04.2001.
9	Information Dispatch Service (electronic recording forms), The review of production performance output for May 2009, OJSC "Ilim Group" Branch in in the town of Bratsk".
10	Calibration records and tags concerning testing equipment
11	Contract # 017-831-07 dd.29.06.07 "Installation of boiler No.15 of E-90-3,9-440ДФТ type" with JSC "Energomash – East Sibeiria" and Schedule of Project realization.
12	Additional Agreement dated 27.05.09 to the Contract No.017-831-07.
13	Reporting data on production parameters and steam consumption at OJSC "Ilim Group" Branch in the town of Bratsk.
14	Protocol of Intention between local non-profit organization "Environmental Investment Center" and OJSC "Ilim Group" Branch in the town of Bratsk" regarding implementation of project aimed.

All these documents have been available for auditors.

Persons interviewed:

1	Nikolay T. Sikov, OJSC "Ilim Group" Branch in the town of Bratsk, EHS Director.
2	Nadezhda I. Motina, OJSC "Ilim Group" Branch in the town of Bratsk, Head of ISM Department.
3	Oleg V. Dembitsky, OJSC "Ilim Group" Branch in the town of Bratsk, Deputy of Head of Production.
4	Artem L.Dariev, OJSC "Ilim Group" Branch in the town of Bratsk, Deputy of Head of Workshop No.1 of CHPP station.
5	Irina V.Glushich, OJSC "Ilim Group" Branch in the town of Bratsk, Lead Ecologist.
6	Vladimir T. Grishin, OJSC "Ilim Group", Lead H&S Specialist.
7	Valery A. Farukshin, JSC "Ilim Vostok", Lead Engineer of Investment and Production Direction.
8	Alexander V. Samorodov, CCGS, Director.
9	Ilya Goryashin, CCGS, specialist, PDD-writer.

7 DISCLAMER

This report contains the results of the determination of whether the project under consideration meets the relevant requirements of Article 6 of the Kyoto Protocol and the JI guidelines. The used determination procedure does not fall unde the verification procedure under the JISC, as defined in the JI guidelines, paragraphs 30–45. Instead, paragraph 23 of the JI guidelines apples to the determination based on which Bureau Veritas Certification Holding SAS issues, under the contractual arrangements with CCGS, an expert opinion on the project as per the RF Government Decree No. 332, dated 28 May 2007, “Procedure for approval and verification of status of projects carried out in accordance with Article 6 of the Kyoto Protocol to the United Nations Framework Convention on Climate Change”.

APPENDIX A: COMPANY JI APPENDIX A: COMPANY JI PROJECT DETERMINATION PROTOCOL

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

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
1. The project shall have the approval of the Parties involved.	Kyoto Protocol Article 6.1 (a)	CAR 01. The project has no approvals of the Parties involved. Verifiers' Note: JISC Glossary of JI terms/Version 01 defines the following: a) At least the written project approval(s) by the host Party(ies) should be provided to the AIE and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication in accordance with paragraph 34 of the JI guidelines; (b) At least one written project approval by a Party involved in the JI project, other than the host Party(ies), should be provided to the AIE and made	Table 2 Section A.5.

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest.	
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur.	Kyoto Protocol Article 6.1 (b)	OK	Table 2, Section B.2
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7.	Kyoto Protocol Article 6.1 (c)	OK	N/A
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3.	Kyoto Protocol Article 6.1 (d)	OK	N/A
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects.	Marrakech Accords, JI Modalities, §20	OK	The Russian national focal point is the Ministry of Economic Development. The Russian national guidelines and procedures are established by the RF Government Decree N 332 dated 28/05/07 and by RF Ministry of Economic Development and

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
			Trade Order N 444 dated 20/12/07.
6. The host Party shall be a Party to the Kyoto Protocol.	Marrakech Accords, JI Modalities, §21(a)/24	OK	Russia has ratified the Kyoto Protocol by Federal Law N 128-ФЗ dd. 04/11/04
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts.	Marrakech Accords, JI Modalities, §21(b)/24	OK	The Russian Federation's assigned amount has been calculated and recorded In the 4th National Communication dated 12/10/06.
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4.	Marrakech Accords, JI Modalities, §21(d)/24	OK	Russian Federation has established the GHG Registry by the RF Government Decree N 215-p dated 20/02/06.
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination.	Marrakech Accords, JI Modalities, §31	OK	Climate Change Global Services (CCGS) has submitted the PDD to Bureau Veritas Certification, which contains all

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
			information needed for determination.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments.	Marrakech Accords, JI Modalities, §32	OK	The PDD was made publicly available for comments on Bureau Veritas Rus site as from 28 May till 26 June 2009.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the host Party, an environmental impact assessment in accordance with procedures as required by the host Party shall be carried out.	Marrakech Accords, JI Modalities, §33(d)	OK	Table 2, Section F
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure.	Marrakech Accords, JI Modalities,	OK	Table 2, Section B.2

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
	Appendix B		
15. The project shall have an appropriate monitoring plan.	Marrakech Accords, JI Modalities, §33(c)	OK	Table 2, Section D
16. A project participant may be: (a) A Party involved in the JI project; or (b) A legal entity authorized by a Party involved to participate in the JI project.	JISC "Modalities of communication of Project Participants with the JISC" Version 01, Clause A.3	The Russian project participant will be authorised by the Host Party through the issuance of the approval for the project. Conclusion is pending a response on CAR 01. Refer to Verifiers' Note in 1 above.	Table 2, Section A

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of the project					
A.1 Title of the project					
A.1.1. Is the title of the project presented?	1,2	DR	The title of the project is: "Biomass wastes to energy at OJSC "Ilim Group" Branch in the town of Bratsk". The Sectoral Scope is Manufacturing industries (4) and Waste handling and disposal (13).		OK
A.1.2. Is the current version number of the document presented?	1,2	DR	The PDD Version 01 is the current one.		OK
A.1.3. Is the date when the document was completed presented?	1,2	DR	Verifier obtained PDD Version 01 dated 20 March 2009.		OK

A.2. Description of the project					
A.2.1. Is the purpose of the project included?	1,2	DR	The project is implemented on the site of OJSC “Ilim Group” Branch in the town of Bratsk. The project is aimed at efficient utilization of high-moisture biomass wastes for production of heat and electricity for auxiliary needs of OJSC “Ilim Group” Branch in the town of Bratsk. The project envisages complex modernization of the energy system of Bratsk Pulp and Paperboard Mill (BPPM) and switching of the boiler equipment to fluidized bed combustion (FBC) of bark and wood wastes (BWW) and wastewater sludge (WWS).		OK

A.2.2. Is it explained how the proposed project reduces greenhouse gas emissions?	1,2	DR I	It is stated in PDD Section A.2.2 that the pulp chips production yields large quantities of BWW. Also some quantity of BWW is supplied to BPPM from the neighbouring woodworking enterprises which do not have their own utilization capacities. WWS is generated at the biological treatment plant for the Mill's industrial effluents. Heat and electricity are produced at the Mill by the technological heat and power plant (THPP) consisting of three sites: CHPP-2, CHPP-3 and the boiler house interconnected by steam pipelines and power transmission lines. THPP uses residual fuel oil, BWW and black liquor as fuel. Prior to the project implementation BWW have been combusted in utilizing boilers No. 9 and No.10 of CHPP-2 and in utilizing boiler No.15 of the boiler house. It was possible to achieve stable burning of BWW only by using residual fuel oil for flame stabilization. Basically only relatively dry wood wastes (sawdust and wood sliver) were used, whereas high-moisture bark (moisture content up to 70%) was mostly disposed at the dump. WWS with even higher moisture content has never been utilized at all and the entire quantity of it is disposed at the dump.		OK

			The shortfall of heat and electricity at the Mill is covered by CHPP-6 of OJSC "Irkutskenergo" located in close vicinity to BPPM. The main fuel of CHPP-6 is lignite. In the absence of the project, the Branch management would have carried on with the existing practice of waste biomass handling, heat and electricity generation and purchase of energy from OJSC "Irkutskenergo" to bridge the shortfall. The project envisages complex modernization of the energy system of BPPM in three stages. The first stage: - reconstruction of E-75-40K boiler unit No.16 for BWW combustion without residual fuel oil firing (or any other fossil fuel) for fuel stabilization due to implementation of fluidized bed combustion technology designed by "INECO". The second stage: - reconstruction of E-75-40K boiler unit No.14 for BWW combustion without residual fuel oil firing for fuel stabilization with increase of steam output to 90 t/h due to implementation of fluidized bed combustion technology designed by "INECO". The third stage:		

			- installation of a new E-90-3.9-440DFT boiler unit No.15 designed for fluidized bed combustion of BWW and WWS without residual fuel oil firing for fuel stabilization using "Kvaerner Power" technologies (Finland); - modernization of BWW feed system of renewed utilizing boilers No.14, No.15 and No.16; - modernization of the thermal flow diagram of THPP. As a result of the project the following will be achieved: - practically all BWW generated on the territory of the Branch (including BPPM and neighbouring woodworking enterprises) will be utilized and BWW disposal at the dump will be almost completely avoided; - a significant proportion of WWS will be utilized with a respective reduction of WWS disposal at the dump; - in-house production of heat and electricity will increase; - residual fuel oil consumption in the Mill's fuel balance will reduce; - the system of energy supply of the production will be optimized, its reliability and cost-efficiency will be improved; - reduction of greenhouse gas (GHG) emissions by 278 thousand tonnes of		

			CO2e/year, on average. This Section also summarizes the history of the project (including its JI component).		
A.3. Project participants					
A.3.1. Are project participants and Party(ies) involved in the project listed?	1,2	DR	Party A is the Russian Federation.		OK
A.3.2. The data of the project participants is presented in tabular format?	1,2,3	DR	The data of the project participants is presented in the tabular format for Legal entity A1 only. Legal entity B1 is to be determined within 12 months upon approval of the project by the Russian Government. Refer to PDD Section A.3 and to Verifier's Note in 1 Table 1. Conclusion is pending a response on CAR 01.	Pending	
A.3.3. Is contact information provided in Annex 1 of the PDD?	1,2	DR	Refer to PDD Annex 1.		OK
A.3.4. Is it indicated, if it is the case, if the Party involved is a host Party?	1,2	DR	Russian Federation is indicated as a host Party in PDD Section A.4.1.1.		OK
A.4. Technical description of the project					
A.4.1. Location of the project activity					
A.4.1.1. Host Party(ies)	1,2	DR	The Russian Federation.		OK
A.4.1.2. Region/State/Province etc.	1,2	DR	The Irkutsk Region.		OK

A.4.1.3. City/Town/Community etc.	1,2	DR	The Town of Bratsk.		OK
A.4.1.4. Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	1,2	DR	PDD Section A.4.1.4 defines in detail the physical location, including information allowing the unique identification of the project. Geographical latitude: 56°07'09"N. Geographical longitude: 101°36'50"E. Time zone: GMT +8:00. This section exceeds one page. This is not in accordance with [2].	CAR 02	OK
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
A.4.2.1. Does the project design engineering reflect current good practices?	1, 10	DR	The project design engineering represents current good practices in using of the boilers with the technology of fluidized bed furnace (FBC) of biomass in the pulp and paper Mills.		OK
A.4.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1, 10	DR	The project uses the state-of-art technology. It envisages modernization of the two boilers E-75-40K and construction of a new high-technology boiler E-90-3,9-440ДТФ with the technology of FBC that allows to utilize practically all BWW and WWS with great moisture content generated on the territory of the Branch with a respective reduction of BWW and WWS disposal at the dump.		OK
A.4.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1	DR	The project technology is unlikely to be substituted by other or more efficient technologies within the project period.		OK

A.4.2.4. Does the project extensive initial training and maintenance efforts in order to work as presumed during the project period?	1	DR	This issue is reflected in PDD Section D.3.		OK
A.4.2.5. Does the project make provisions for meeting training and maintenance needs?	1	DR I	It is stated In PDD Section D.3 that the THPP personnel whose work will be connected with operation of the reconstructed boilers will undergo training organized by the equipment manufacturer. All maintenance personnel have the required qualification and valid permits to operate THPP's main equipment. Furthermore, in connection with the commissioning of the modernized boilers, the personnel underwent training in accordance with the personnel's job profile. The responsible for staff training is EHS Director. The actions required by the project including all relevant technical data and the implementation schedule have been implemented and described in PDD Sections A.2 and A.4.2.		OK
A.4.3. 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					
A.4.3.1. Is it stated how anthropogenic GHG emission	1,2,	DR	It is stated how anthropogenic GHG emission		

reductions are to be achieved? (This section should not exceed one page)	3, 4	I	reductions are to be achieved. Reduction of GHG emissions as a result of the project will be achieved due to the following: - reduction of the proportion of residual fuel oil in the Mill's fuel balance due to the realisation of fluidized bed combustion of biomass (by 35 thousand tCO2e/year on average); - reduction of lignite combustion at CHPP-6 due to increase of BPPM's own heat production (by 112 thousand tCO_2e/year on average); - reduction of biomass (BWW and WWS) disposal at the dump (by 142 thousand tCO2e/year on average). Alongside with the above mentioned, implementation of the project will lead to the growth of GHG emissions related to electricity consumption from the external power grid by 48 thousand tCO2e over the entire crediting period (2008-2012). This section exceeds one page. This is not in accordance with [2]. Please clarify or give the pertinent reference why are emissions of CH_4 and NO_2 from combustion of fossil fuel negligibly small as compared with CO_2 emissions.	CAR 03 CL 01	OK OK

A.4.3.2. Is it provided the estimation of emission reductions over the crediting period?	1,2	DR	Total estimated emission reductions equal 1 390 949 tCO2e over 5 year crediting period starting in 2008.		OK
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	1,2	DR	The estimated annual reduction in the years 2008 -2012 of the crediting period is provided in tCO2e (ref to PDD Section A.4.3.1). The annual average of estimated emission reductions over the crediting period is 278 190 tCO2e/year.This estimation is not in conformance with calculations followed from A.4.3.1 (See Table 2) that leads to 277 000 tCO2e/year.	CAR 04	OK
A.4.3.4. Is the data from questions A.4.3.2 and A.4.3.3 above presented in tabular format?	1, 2	DR	The data is presented in due tabular format.		OK
A.5. Project approval by the Parties involved					
A.5.1. Are written project approvals by the Parties involved attached?	1,2	DR	The written project approvals by the Parties are to be provided after the determination of the PDD. Conclusion is pending a response on CAR 01.	Pending	
B. Baseline					
B.1. Description and justification of the baseline chosen					

B.1.1. Is the chosen baseline described?	1,2, 4	DR I	The baseline envisages continuation of the existing practice of firing bark and wood wastes generated within BTIC in the utilizing boilers of CHPP-2 and the boiler house. The biomass wastes that are not utilized will be disposed at the dump. The shortfall of heat and electricity will be supplied from CHPP-6 and from the external power grid.		OK

B.1.2. Is it justified the choice of the applicable baseline for the project category?	1,2, 4	DR I	Following Clause 20 (b) of JISC "Guidance for baseline setting and monitoring" [4] the project participant has established a methodology in accordance with appendix B of the JI guidelines. The baseline is the most economically and technically feasible scenario and it does not violate Russian legal requirements.		OK
B.1.3. Is it described how the methodology is applied in the context of the project?	1,2, 3,4	DR	The description of how the methodology is applied in the context is given in PDD Section B.1. The following main factors influencing upon GHG emissions in the baseline and the project scenarios were considered in sufficient detail: - combustion of BWW and WWS; - heat production; - fossil fuel combustion; - heat supply; - electricity supply.		OK
B.1.4. Are the basic assumptions of the baseline methodology in the context of the project activity presented (See Annex 2)?	1,2, 3,4	DR	The basic assumptions of the baseline methodology in the context of the project activity are presented in PDD Section B.1 and Annex 2. The baseline scenario is business as usual within the framework of the existing standards and rules which do not prohibit combustion of BWW by BPPM in the existing boilers using residual fuel oil (or any other		

			fossil fuel) for flame stabilization nor are there any restrictions as to biomass disposal at dump. The baseline scenario is reasonably conservative and is by far less expensive than the project activity. It should be also noted that there are no GHG emission caps in Russia for individual companies and according to projections such are not expected at least until 2012. The key factors that determine GHG emissions under the baseline scenario are as follows: - heat production; - heat supply; - fossil fuel combustion; - electricity supply; - electricity consumption from the external power grid; - BWW and WWS disposal at the dump. Each factor is considered in detail in the PDD. The key information and data used to establish the baseline are provided in the prescribed tabular form [Ref. 2, page 12]. For estimations estimation, some parameters (e.g. $SFC^{m}_{RFO,9(10)(15)}$, $SHS^{m}_{THPP,BL}$, $SFC_{RFO,9(10)(15)}$, $SEC_{HG,CHPP2,BL}$, $SHS_{THPP,BL}$, $\chi_{CHPP2,BL}$, etc.) were assumed approximately	CAR 05	OK

			equal to their average values over the last three years of equipment operation (2006-2007). The yearly values are not always presented (as for other process parameters) what does not allow assessing the uncertainty and conservatism of this data.		
B.1.5. Is all literature and sources clearly referenced?	1,2	DR	Relevant literature and sources are referenced through the text of PDD.		OK
B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project					

B.2.1. Is the proposed project activity additional?	1,2, 4,5	DR	The alternatives analysis, investment and sensitivity analysis, barrier (technological, operational and financial) analysis and common practice analysis have demonstrated that the proposed project activity is not financially attractive and not economically or financially feasible, without the revenue from the sale of emission reduction units (ERUs). This analysis has been done for each of three project stages. The following Alternatives to the stages 1 and 2 of JI project were identified: 1- continuation of the current situation; 2 - Installation of new boilers running on fossil fuel; 3 - Project activity without JI mechanism. For stage 3 the following four alternatives were identified: 3.1 -Continuation of the current situation; 3.2 - Decommissioning of CHPP-2 boiler equipment, increase of energy purchase from the outside; 3.3 - Installation of new boilers running on fossil fuel; 3.4 - The project activity without JI mechanism. Each alternative was reviewed. The investment analysis and sensitivity analysis, which were undertaken to evaluate Alternatives 2 and 3 for stage 2 and Alternatives 3 and 4 for stage 3, are not transparent since input data for operational	CAR 06	OK

			costs and revenues/losses are not provided. This does not enable the verifier to check if the project is additional. According to Ref. [6] Cl.2(e), "information used to determine whether reductions in anthropogenic emissions by sources are additional…shall not be considered as proprietary or confidential". Common practice analysis showed that Bratsk Pulp and Paper Mill implemented a unique set of technical solutions for modernization of its boilers using state-of-the-art technologies. Considerable quantities of high moisture bark are generally stockpiled at a dump because it is very difficult to burn it and much fossil fuel is consumed for flame stabilization. Moisture content of WWS is even higher and its calorific value is lower than those of BWW. Generally, WWS is not considered as fuel at all. WWS from wastewater treatment plants are traditionally stockpiled in special dumps (lagoons) for liquid wastes. Disposal of bark and WWS at dumps is permitted by Russian environmental regulations. The uniqueness of the project is that this is the first in Russia experience of switching E-75-40K boilers designed for lignin combustion in a low-temperature swirl to fluidized bed		

			combustion of BWW without using residual fuel oil for flame stabilization. Baikal and Syktyvkar PPMs reconstructed their KM-75-40 boilers that were originally designed for bed firing of wood wastes. BWW and WWS mixture is successfully fired in fluidized bed boilers for the purpose of energy production only by one enterprise in Russia – Arkhangelsk PPM. Other distinguishing features are described in A.2.2 above. Based on the visits to other Russian pulp and paper mills held in 2006-2008, the verifiers confirm that the stage 2 and 3 of the project is not a common practice. Common practice analysis is incomplete as to the justification of essential distinction between the proposed project activity at the stage 3 and the similar activities. Other JI project activities (PDD page 45) are not to be included in this analysis as per ref.[2].	CAR 07	OK
B.2.2. Is the baseline scenario described?	1,2	DR	The baseline scenario is described in sufficient detail in PDD Sections B.1 and B.2.		OK

B.2.3. Is the project scenario described?	1,2, 1,2,3 12, 13	DR I	The project scenario is described in sufficient detail in PDD Sections B.1 and B.2. The project scenario envisages the following: 1. Combustion of BWW and WWS in reconstructed utilizing boilers No.14 and No.16 of E-75-40K type and in the new utilizing boiler No.15 of E-90-3.9-440DFT type. The old boiler units No.10 of KM-75-40 type and No.15 of E-75-40K type were decommissioned in mid-2006. The boiler No.9 of KM-75-40 type, the last one of the surviving utilizing boilers of the old type, is planned to be decommissioned in the second quarter of 2009. 2. Heat production (in the form of steam) in the reconstructed utilizing boilers No.14 and No.16 of E-75-40K type and in the new utilizing boiler No.15 of E-90-3.9-440DFT type. Heat production by boiler No.10 of KM-75-40 type and by boiler No.15 of E-75-40K type was stopped in mid-2006. Heat production by boiler No.9 of KM-75-40 type will continue until it is decommissioned which is planned for the second quarter of 2009. 3. Residual fuel oil is combusted in the utilizing boilers for lighting them up. An additional small amount of residual fuel oil will be fired in boilers No.14 and No.16 to meet		

			the required steam demand (similar to the way it has been in the previous years of THPP operation). In boiler No.9 residual fuel oil will be used constantly for flame stabilization to ensure self-sustaining combustion of wood wastes. 4. The heat produced by the utilizing boilers is used for electricity generation and for auxiliary needs of THPP, is partially lost in the interplant steam pipelines and supplied to end-users within BTIC. Until modernization of the thermal flow diagram of the THPP is carried out, all steam produced by boilers in the boiler house, less the auxiliary needs, will be supplied to end-users directly via the THPP's network of steam pipelines. As soon as the thermal flow diagram modernization is completed, the steam produced by boilers in the boiler house will be in the first place fed to the CHPP-2's turbines for electricity generation and then supplied to end-users. Refer to CAR 05 concerning $SHS_{THPP,PJ}$ and $\chi_{CHPP2,BL}$ (p.21,23). Conclusion is pending a response on CAR 05. 5. Electricity generation by the turbines of CHPP-2 on the basis of heat produced by the	Pending	OK

			utilizing boilers. Until modernization of the thermal flow diagram of THPP is carried out, electricity will be generated at CHPP-2 by using the heat of the steam produced by boiler No.9. As soon as the thermal flow diagram modernization is completed, electricity will be generated at CHPP-2 by using the heat of the steam supplied via a new live steam pipeline from the boiler house. The schedule of the project realization for stage 3 has been changed under financial circumstances and the boiler #15 will not start to work from the second half of the year 2009 (see Additional Agreement dd.27.05.09 to the Contract #017-831-07, refer [12]). This shall be taken into account in the estimations of the total emission reduction during the crediting period.	CAR 08	OK

B.2.4. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	1,2	DR I	The quantitative analysis is presented in PDD Section B.1. The baseline was chosen by analyzing a number of alternatives (See PDD Section B.2) that would make it possible for the enterprise to get the same quantity of heat and electricity that is generated through increase in BWW combustion volume and efficiency resulting from the project.		OK
B.2.5. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1,2,4	DR	Refer to PDD Sections B.1 and B.2. The project activity without registration under JI mechanism is not a likely baseline scenario due to the existing investment, financial, and operational barriers to the project implementation. It is shown by the investment analysis that the project activity is not economically and financially feasible without the revenue from the sale of emission reductions units (ERUs).		OK
B.2.6. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	1,2, 12	DR	National Policies and circumstances as well as financial circumstances relevant to the baseline of the proposed project activity are summarised in PDD Section B.2 (pp. 35-45).		OK
B.3. Description of how the definition of the project boundary is applied to the project activity					
B.3.1. Are the project's spatial (geographical) boundaries clearly defined?	1,2	DR	The project's spatial (geographical) bundaries clearly defined. Refer to PDD Figures B.3.1 and Table B.3-1. Emission		OK

			sources included in and excluded from the consideration are listed and analyzed.		
B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline					
B.4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?	1,2	DR	The date of the baseline setting is presented as February 1 2009.		OK
B.4.2. Is the contact information provided?	1,2	DR	LLC “CCGS”. Contact persons: Ilya Goryashin E-mail: i.goryashin@ccgs.ru		OK
B.4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	It is not indicated that LLC “CCGS” is not the project participant listed in Annex 1 of PDD.	CAR 09	OK
C. Duration of the small-scale project and crediting period					
C.1. Starting date of the project					

C.1.1. Is the project's starting date clearly defined?	1,2,3	DR	This is April, 2000, relates to the first stage of reconstruction . Implementation of the first stage began on 28 April 2000 with reconstruction of E-75-40K boiler No.16. On this date, subcontracted assembly workers have arrived and started activities of replacement of main boiler elements (vapor and water tube system and boiler burners). Instructions to the subcontractor dated 28 April 2000 were shown to the verifier (GK). The project's starting date (a particular day) is not defined.	CAR 10	OK
C.2. Expected operational lifetime of the project					
C.2.1. Is the project's operational lifetime clearly defined in years and months?	1,2	DR	15 years / 180 months.		OK
C.3. Length of the crediting period					
C.3.1. Is the length of the crediting period specified in years and months?	1,2	DR	5 years / 60 months (from January 1, 2008 till December 31, 2012).		OK
D. Monitoring Plan					

D.1. Description of monitoring plan chosen					
D.1.1. Is the monitoring plan defined?	1,2, 4	DR	The monitoring plan is defined on the basis of CCGS's approach in accordance with the specifics of the project and requirements of *Decision 9/CMP.1*, *Appendix B* without using any approved methodologies. Collection of data required for estimation of GHG emission reductions is performed to high industry standard and the best practice of fuel and energy monitoring and environmental impact assessment.		OK
D.1.2. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.	1,2, 4	DR	The monitoring endpoints, measured parameters and formulae used are identified (ref. to PDD Sections D.1.1.1-D.1.1.4).		OK
D.1.3. Data to be collected in order to monitor emissions from the project, and how these data will be archived.	1,2, 4	DR	Data to be collected and the approach to archiving them are presented in sufficient scope in the PDD Section D. 1.1.1.		OK
D.1.4. Description of the formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2	DR	Refer to PDD Section D.1.1.2, Formulae (D.1-1) - (D.1-3). Detailed and transparent description of the formulae is given. The formulae were checked and found correct.		OK
D.1.5. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived.	1,2	DR	Data to be collected and the approach to collecting and archiving them are presented in sufficient scope in PDD Section D.1.1.3.		OK

D.1.6. Description of the formulae used to estimate baseline emissions (for each gas, source etc, emissions in units of CO2 equivalent).	1,2, 8,13	DR	Refer to PDD Section D.1.1.4, Formulae (D.1-4) - (D.1-41). Detailed and transparent description of the formulae is given. The submitted formulae were checked and found correct. The baseline emissions of CH4 from decomposition of an additional quantity of BWW and WWS at the dump during the year are determined using the model developed by "BTG biomass technology group B.V." "Calculation of CO2-equivalent emission reductions from biomass prevented from stockpiling or taken from stockpiles (Refer [13]). Formulae for this model are not presented what does not allow assessing the correctness of calculations fulfilled. There is also a lack of transparency as to the use of the WWS biomass decomposition factor *k* in the numerical estimation of methane emission reductions by the model from [13] equal to its value 0,047 from [13] for non-WWS type of biomass.	CAR 11	OK
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be consistent with those in section E)	1,2	DR	Not applicable.		OK
D.1.8. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived.	1,2	DR	Not applicable.		OK
D.1.9. Description of the formulae used to calculate	1,2	DR	Not applicable.		OK

emission reductions from the project (for each gas, source etc; emissions/emission reductions in units of CO2 equivalent).					
D.1.10. If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project.	1,2, 4	DR	Refer to PDD Section B.3. The leakages are considered as a result of consumption of diesel fuel by motor transport for delivery of additional BWW from the outside suppliers. As shown in this Section the resulting value of annual leakage emissions will not exceed 0.3% of the annual GHG emission reductions. In accordance with JISC "Guidance on criteria for baseline setting and monitoring", version 01, part A, clause 11(iii) this amount can be assumed equal to zero.		OK
D.1.11. Description of the formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2	DR	Refer to PDD Section B.3. Detailed and transparent description of the calculations is given.		OK
D.1.12. Description of the formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2	DR	These are the formulae (D.1-42) – (D.1-50) for reduction of carbon dioxide emissions from combustion of residual fuel oil in the utilizing boilers, lignite in CHPP-6 boilers, fossil fuel at grid power plants and the reduction of methane emissions in units of CO2 equivalent from BWW and WWS decomposition at the dump.		OK
D.1.13. Is information on the collection and archiving of information on the environmental impacts of the project provided?	1,2, 7,11	DR	The environmental monitoring at OJSC "ILIM Group" is carried out in accordance with environmental legislative requirements of the Russian Federation. The company		OK

			periodically monitors its emission parameters, according to the schedule of environmental impact monitoring, which was confirmed during the certification audit of the Mill QHSE Management System to ISO 9001 and ISO 14001 made by Bureau Veritas Certification auditors on 17-21 November 2008. Supporting documentation is in possession of the verifiers. Refer to PDD Section D.1.5.		
D.1.14. s reference to the relevant host Party regulation(s) provided?	1,2	DR	Refer to PDD Section D.1.5 and Section E.		OK
D.1.15. If not applicable, is it stated so?	1,2	DR	Refer to D.1.14, Table 2.		OK
D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored					
D.2.1. Are there quality control and quality assurance procedures to be used in the monitoring of the measured data established?	1,2,7	DR	The company has quality control and quality assurance procedures. OJSC “Ilim Group” Branch in the town of Bratsk” maintains the QHSE Management System certified to ISO 9001, ISO 14001 and OHSAS 18001. Supporting documentation is in possession of the verifiers. The particular QC and QA procedures are outlined in PDD Section D.2.		OK

D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan					
D.3.1. Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project	1,2	DR	Refer to PDD Section D.3. CCGS specialists are responsible for calculation of the GHG emission reductions based on the provided data and for drawing up a monitoring report at the end of each reporting year.		OK
D.4. Name of person(s)/entity(ies) establishing the monitoring plan					
D.4.1. Is the contact information provided?	1,2	DR	LLC “CCGS” Contact persons: Ilya Goryashin E-mail: i.goryashin@ccgs.ru		OK
D.4.2. s the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	Conclusion is pending a response to CAR 08.	Pending	OK
E. Estimation of greenhouse gases emission reductions					
E.1. Estimated project emissions					
E.1.1. Are described the formulae used to estimate anthropogenic emissions by source of GHGs due to the project?	1,2, 8	DR	These are Formulae (E.1-1) and (E.1-2) presented in PDD Section E.1. The formulae were checked and found correct. Also refer to formulae (D.1-1) and (D.1-3).		OK

E.1.2. Is there a description of calculation of GHG project emissions in accordance with the formula specified in for the applicable project category?	1,2, 8	DR	GHG project emissions are calculated by formulae (E.1-2) with the use of data from Table B.1-4 (mass residual fuel consumption in the utilizing boilers) and the default value of CO_2 emission factor for natural gas from [8].		OK
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1,2	DR	The electricity consumption for auxiliary needs of CHPP-2 under the project during the year y is assumed constant and equal to the minimum value over the last three years of the plant operation. This approach is reaonable enough since as soon as heat is no longer produced at CHPP-2, which is planned for the second quarter of 2009, electricity consumption for auxiliary needs of the plant will drop. Refer to CAR 05 concerning $SFC_{RFO,9(10)(15)}$, $SHS_{THPP,PJ}$ and $\chi_{CHPP2,PJ}$. Conclusion is pending a response to CAR 05.	Pending	OK
E.2. stimated leakage					
E.2.1. Are described the formulae used to estimate leakage due to the project activity where required?	1,2, 4	DR	Leakage is analysed in PDD Section B3 and found negligible.		OK
E.2.2. Is there a description of calculation of leakage in accordance with the formula specified in for the applicable project category?	1,2	DR	Refer to Table 2 Section E.2.1 and PDD Section B.3.		OK
E.2.3. Have conservative assumptions been used to calculate leakage?	1,2, 4, 14	DR	The maximum total consumption of diesel fuel for additional supplies of BWW to BPPM from the outside is considered.		OK

E.3. The sum of E.1 and E.2.					
E.3.1. Does the sum of E.1. and E.2. represent the small-scale project activity emissions?	1,2	DR	The project falls under category of large scale projects. The sum of E1 and E2 represents the project emissions. Refer to PDD Table E.1-1.		
E.4. Estimated baseline emissions					
E.4.1. Are described the formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category?	1,2	DR, I	These are Formulae (E.4-1) - (E.4-4) presented in PDD Section E.4. The formulae were checked and found correct. Also refer to PDD Formulae (D.1-4) – (D.1-41).		OK
E.4.2. Is there a description of calculation of GHG baseline emissions in accordance with the formula specified for the applicable project category?	1,2, 9,13	DR, I	GHG project emissions are calculated by Formulae (E.4-1) with the use of Formulae (D.1-4) – (D.1-41), the default values of CO_2 electricity grid emission factor (from [9]) and the model of numerical estimations of methane emissions from anaerobic decomposition of BWW and WWS disposed at the dump (from [13]).		OK
E.4.3. Have conservative assumptions been used to calculate baseline GHG emissions?	1, 2, 13	DR	The following conservative assumptions have been used to calculate baseline GHG emissions: 1. In distributing heat production between boilers No.9 and No.10 of CHPP-2 it was assumed that boiler No.9 produces the maximum quantity of heat, because the rate of flame stabilization by residual fuel oil in boiler No.9 is lower than in boiler No.10 (see PDD page 25).		OK

			2. BWW supplies for combustion from the outside are assumed equal to zero (see PDD page 29). 3. Some emission sources are reasonably excluded (see PDD Table B.3-1). 4. The value of 50% for BWW organic carbon content (dry basis) was adopted instead of the default value 53.6% (refer [13] and PDD page 76).		

E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
E.5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	1,2	DR	The values of GHG emission reductions (the difference between E4 and E3) are presented in PDD Table E.5-1.		OK
E.6. Table providing values obtained when applying formulae above					
E.6.1. Is there a table providing values of total CO2 abated?	1,2	DR	The presented Table E.6 provides the yearly and total values of project emissions, leakages, baseline emissions and emission reductions for the crediting period.		OK
F. Environmental Impacts					
F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party					
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?	1,2, 11, 1-6	DR, I	Analysis of the environmental impacts and environment protection solutions are given in the project documentation for boilers reconstruction and installation (refer to PDD, References [R1], [R2], [R3] on page 80). It was checked during site-visit on 8-9 June 2009. References to State Expertise opinion and Rostekhnadzor Permissions for Emissions are not given.	CAR 12	OK

F.1.2. Are there any host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1,2, 4,5, 7,8	DR	Under the RF Urban Development Code N 190-ФЗ, the capital construction can start under an authority's permission. The latter is granted if there is a positive conclusion of the State Expertise on the project documentation, which shall contain the results of EIA. All the boilers were commissioned by an acceptance committee and have the necessary Permissions for Emissions (ref. to [4, 5, 7, 8[).		OK
F.1.3. Are the requirements of the National Focal Point being met?	1,2, 11	DR I	The requirements of the National Focal Point to present the EIA should be met before the submission of the project to the Coordination Centre of National Focal Point.		OK
F.1.4. Will the project create any adverse environmental effects?	1,2 1-6	DR I	The project leads to reduction of pollutant emissions, solid wastes generation, residual fuel oil consumption and GHG emissions.		OK
F.1.5. Are transboundary environmental impacts considered in the analysis?	1,2	DR I	The project activity has no transboundary environmental impacts.		OK
F.1.6. Have identified environmental impacts been addressed in the project design?	1,2	DR	Refer to F.1.1		OK
G. Stakeholders' comments					
G.1. Information on stakeholders' comments on the project, as appropriate					
G.1.1. Is there a list of stakeholders from whom comments on the project have been received?	1,2, 6	DR	It is stated in the PDD Section G1 that comments on behalf of local and federal authorities were received in the form of positive opinions regarding the project activity		

			from the state expertises and permits for the project implementation. The town's community was informed about the planned implementation of the project through the local mass media. There is no a list of stakeholders from whom comments on the project have been received.	CAR 13	OK
G.1.2. The nature of comments is provided?	1,2	DR	Please describe nature of the stakeholders' comments and whether and how the comments have been addressed.	CAR 14	OK
G.1.3. Has due account been taken of any stakeholder comments received?	1,2	DR	Conclusion is pending a response on CARs 13, 14.	Pending	OK

Table 4 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. **Legal requirements**					
1.1. Is the project activity environmentally licensed by the competent authority?	1	DR, I	Conclusion is pending a response to CAR 12.	Pending	OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	1	DR, I	Please refer to 1.1 above.		OK
1.3. Is the project in line with relevant legislation and plans in the host country?	1	DR, I	Yes, the project is in line with relevant legislation and plans in the host country.		OK

Table 5 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
CAR 01 The project has no approvals of the Parties involved.	1 Table 1	N/A	Conclusion is pending. The approval should be obtained following the determination of the project.
CAR 02 This section exceeds one page. This is not in accordance with [2].	A.4.1.4	The corresponding section of the PDD is corrected accordingly (See pp. 4-5).	This CL is closed based on the pertinent correction made to the PDD.
CAR 03 This section exceeds one page. This is not in accordance with [2].	A.4.3.1	The corresponding section of the PDD is corrected accordingly (See pp. 13-14).	This CL is closed based on the pertinent correction made to the PDD.
CAR 04 The annual average of estimated emission reductions over the crediting period is 278 190 tCO2e/year. This estimation is not in conformance with calculations followed from A.4.3.1 (See Table 2) that leads to 277 000 tCO2e/year.	A.4.3.2	The estimation of annual average emission reductions over the crediting period (277 000 tCO_2e/year) was deleted from Section A.4.3 of the PDD. (See corrections in the PDD, p. 13).	This CAR is closed based on the adequate correction made to the PDD.
CAR 05	B.1.4	In baseline GHG emissions estimations, in	This CAR is closed based on the

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
For emission estimations, some parameters (e.g. $SFC^{m}_{RFO,9(10)(15)}$, $SHS^{m}_{THPP,BL}$, $SFC_{RFO,9(10)(15)}$, $SEC_{HG,CHPP2,BL}$, $SHS_{THPP,BL}$, $\chi_{CHPP2,BL}$, etc.) were assumed approximately equal to their average values over the last three years of equipment operation (2006-2007). The yearly values are not always presented (as for other process parameters) what does not allow assessing the uncertainty of this data.		order to be more conservative, the estimated values of the key parameters were replaced with maximum or minimum values over 2001-2007 depending on which is more conservative in each individual case: – Maximum quantity of heat that can be produced by boiler No.9 during the year is assumed equal to the maximum value over 2001-2007 (HG_9^{max} = 1 125 026 GJ). (See corrections in the PDD, pp. 29, 55). – Maximum quantity of heat that can be produced by boiler No.10 during the year is assumed equal to the maximum value over 2001-2007 (HG_{10}^{max} = 614 488 GJ). (See corrections in the PDD, p. 30). – Maximum quantity of heat that can be produced by boiler No.15 during the year is assumed equal to the maximum value over 2001-2007 (HG_{15}^{max} = 1 339 346 GJ). (See corrections in the PDD, p. 30). – Factor of heat supply from THPP under the baseline scenario is assumed equal to the	adequate correction made to the PDD.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		maximum value over 2001-2007 ($SHS_{THPP,BL}$ = 0.705). (See corrections in the PDD, pp. 30, 58). – Specific residual fuel oil consumption for generation of 1 GJ of heat in boiler No.9 is assumed equal to the minimum value over 2001-2007 ($SFC_{RFO,9}$ = 0.0347 GJ/GJ). (See corrections in the PDD, pp. 31, 55). – Specific residual fuel oil consumption for generation of 1 GJ of heat in boiler No.10 is assumed equal to the minimum value over 2001-2007 ($SFC_{RFO,10}$ = 0.3672 GJ/GJ). (See corrections in the PDD, pp. 32, 55). – Specific residual fuel oil consumption for generation of 1 GJ of heat in boiler No.15 is assumed equal to the minimum value over 2001-2007 ($SFC_{RFO,15}$ = 0.2810 GJ/GJ). (See corrections in the PDD, pp. 32, 56). – Factor of heat-production-based electricity generation at CHPP-2 under the baseline scenario is assumed equal to the maximum	

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		value over 2001-2007 ($\chi_{CHPP2,BL}$ = = 0.0372 MWh/GJ). (See corrections in the PDD, pp. 32, 59). – Specific electricity consumption for production of 1 GJ of heat at CHPP-2 under the baseline scenario is assumed equal to the minimum value over 2001-2007 ($SEC_{HG,CHPP2,BL}$ = 0.0141 MWh/GJ). (See corrections in the PDD, pp. 32, 60). – Maximum quantity of BWW that can be fired in boiler No.9 during the year is assumed equal to the maximum value over 2001-2007 ($FC^{m,\max}_{BWW,9}$ = 189 830 GJ). (See corrections in the PDD, p. 33). – Maximum quantity of BWW that can be fired in boiler No.10 during the year is assumed equal to the maximum value over 2001-2007 ($FC^{m,\max}_{BWW,10}$ = 60 003 GJ). (See corrections in the PDD, p. 34). – Maximum quantity of BWW that can be fired in boiler No.15 during the year is assumed	

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		equal to the maximum value over 2001-2007 ($FC^{m,\max}_{BWW,15}$ = 130 230 GJ). (See corrections in the PDD, p. 34). Three years average (2005-2007) values of the key parameters were used for the project scenario, exact values of these parameters shall be determined in the course of monitoring (See p. 16). The table with actual specific performance parameters of BPPM's energy system over 2001-2007 was added in the Annex 2-1 of the PDD (See p. 86). Moreover, corresponding corrections were made on pp. 14, 39, 42, 78, 79, 87 and 88.	
CAR 06 The investment analysis and sensitivity analysis which were undertaken to evaluate Alternatives 2 and 3 for stage 2 and 3.4 for stage 3 are not transparent since input data for operational costs and revenues/losses are not provided. This does not enable the verifier to determine if the project is	B.2.1	Information and data on the investment analysis of alternatives were attached in Annexes 2-5 and 2-6 of the PDD. In Section B.2 the corresponding references to the Annexes were made (See pp. 39, 42, 91-95).	This CAR is closed based on the adequate correction made in the PDD.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
additional. According to Ref. [6] Cl.2(e), "information used to determine whether reductions in anthropogenic emissions by sources are additional…shall not be considered as proprietary or confidential".			
CAR 07 Common practice analysis is incomplete as to the justification of essential distinction between the proposed project activity at the stage 3 and the similar activities. Other JI project activities (PDD page 45) are not to be included in this analysis as per ref.[2].	B.2.1	There are no examples of any projects in Russia which would be similar to the third stage of this project and would be implemented as common commercial practice. There is only one example of fluidized bed technology being employed for combustion of BWW and WWS mixture – that is Arkhangelsk PPM Project. The technologies employed in that case are identical to the technologies employed in the new boiler E-90-3.9-440DFT No.15 which is installed under the third stage of the Bratsk Project. However it is important to underline that Arkhangelsk PPM Project was implemented using the Joint Implementation mechanism. To date the project was successfully determinated and the approval of the Russian Government is pending. References to other JI projects were deleted from the PDD (See p. 44).	This CAR is closed based on the adequate correction and pertinent information added to the PDD.
CAR 08	B.2.3	The total emission reductions during the credit	This CAR is closed based on the

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The schedule of the project realization for stage 3 has been changed under financial circumstances and the boiler #15 will not start to work from the second half of the year 2009 (see Additional Agreement dd.27.05.09 to the Contract #017-831-07, refer [12]). This shall be taken into account in the estimations of the total emission reduction during credit period.		period were recalculated. In accordance with the reference [12] all construction and installation works under the project are planned to be completed by the 1st of March 2010. The required investments in the 3rd stage of the project have grown to EUR 24.6 million. Sections of the PDD are corrected accordingly (See pp. 3, 10, 14-22, 74, 78-79, 87-90).	adequate correction made to the PDD.
CAR 09 It is not indicated that LLC "CCGS" is not the project participant listed in Annex 1 of PDD.	B.4.3	The indication that LLC "CCGS" is not the project participant listed in Annex 1 of PDD is added to the respective section of the PDD (See p. 47).	This CAR is closed based on the adequate addition made to the PDD.
CAR 10 The project's starting date (a particular day) is not defined.	C.1.1	The starting date of the project (a particular day) is the 28th of April, 2000. This date was added in the PDD.	This CAR is closed based on the adequate addition made to the PDD.
CAR 11 The baseline emissions of CH4 from decomposition of an additional quantity of BWW and WWS at the dump during the year	D.1.6	The formulae used for calculation of the baseline emissions of CH_4 from decomposition of an additional quantity of BWW and WWS at the dump during the year *y*, with description of the values used in these formulae were added	This CAR is closed based on the pertinent information added to the PDD.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
are determined using the model developed by "BTG biomass technology group B.V." "Calculation of CO2-equivalent emission reductions from biomass prevented from stockpiling or taken from stockpiles (Refer [13]). Formulae for this model are not presented what does not allow assessing the correctness of calculations fulfilled. There is also a lack of transparency as to the use of the WWS biomass decomposition factor *k* in the numerical estimation of methane emission reductions by the model from [13] equal to its value 0,047 from [13] for non-WWS type of biomass.		to the PDD (See pp. 61-64, 76-78). The decomposition factor *k* for WWS was assumed at 0.185 in accordance with 2006 IPCC (See pp. 64, 77, 82, 90). Moreover, corresponding corrections were made on pp. 14, 53-54, 65-66, 69, 72, 79 and 89.	
CAR 12 References to State Expertise opinion and Rostekhnadzor Permissions for Emissions are not given.	F.1.1	References to State Expertise opinion and Rostekhnadzor Permissions for Emissions were added in the PDD (See p. 80).	This CAR is closed based on the pertinent information added to the PDD.
CAR 13 There is no a list of stakeholders from whom comments on the project have been received.	G.1.1	The list of stakeholders from whom comments on the project have been received was added in the PDD (See p. 81).	This CAR is closed based on the pertinent information added to the PDD.
CAR 14	G.1.2	The nature of the stakeholders' comments was	This CAR is closed based on the

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
Please describe nature of the stakeholders' comments and whether and how the comments have been addressed.		described in the PDD (See p. 81).	pertinent information added to the PDD.
CL 01 Please clarify or give the pertinent reference why are emissions of CH_4 and NO_2 from combustion of fossil fuel negligibly small as compared with CO_2 emissions.	A.4.3.1	According to IPCC 2006 emission factors for stationary combustion of fossil fuel are as follows: 1. For residual fuel oil combustion: $EF_{CO2,RFO}$ = 77 400 kg CO_2/TJ. $EF_{N2O,RFO}$ = 0.6 kg N_2O/TJ. $EF_{CH4,RFO}$ = 3 kg CH_4/TJ. 2. For lignite combustion: $EF_{CO2,lignite}$ = 101 000 kg CO_2/TJ. $EF_{N2O,lignite}$ = 1.5 kg N_2O/TJ. $EF_{CH4,lignite}$ = 1 kg CH_4/TJ. Share of CH_4 and NO_2 emissions in terms of CO_2 equivalent in the total amount of GHG will be: 1. For residual fuel oil: N_2O	This CL is closed based on the given clarification.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		(0.6*310)/(0.6*310+3*21+77400) = 0.0024; CH_4 (3*21)/(0.6*310+3*21+77400) = 0.0008. 2. For lignite: N_2O (1.5*310)/(1.5*310+1*21+101000) = 0.0046; CH_4 (1*21)/(1.5*310+1*21+101000) = 0.0002. Thus emissions of CH_4 and NO_2 from combustion of fossil fuel are negligibly small as compared with CO_2 emissions.	

Appendix B: Verifiers CV's

Mr. Flavio Gomes:
Lead Verifier
Bureau Veritas Certification Holding SAS – Global Manager for Climate Change

Flavio Gomes is a Chemical and Safety Engineer graduated from «UNICAMP – Universidade Estadual de Campinas», with a MSc title in Civil Engineer (Sanitation). He spent four years at RIPASA Pulp and Paper as Environmental Process Engineer. He is, since 2006 the Global Manager for Climate Change. Previously and since 1997, he was senior consultant for Bureau Veritas Consulting in fields of Environment, Health, Safety, Social Accountability and Sustainability audit and management systems. He also acted as Clean Development Mechanism verifier, and Social/Environmental Report auditor, in the name of Bureau Veritas Certification. Flavio is pursuing his PhD on Energy Management at the Imperial College – London.

Leonid Yaskin, PhD (thermal engineering)
Verifier.
Bureau Veritas Certification Rus General Director- Lead Auditor, Lead Tutor, Verifier

He has over 30 years of experience in heat and power R&D, engineering, and management, environmental science and investment analysis of projects. He worked in Krrzhizhanovsky Power Engineering Institute, All-Russian Teploelectroproject Institute, JSC Energoperspectiva. He worked for 8 years on behalf of European Commission as a monitor of Technical Assistance Projects. He is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). He performed over 250 audits since 2002. Also he is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered OHSAS 18001 Lead Auditor Training Course. He is an Assuror of Social Reports. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of 11 JI projects.

George Klenov, Professor, Doctor of Science (engineer electromechanic, phisicist)
Verifier.
Bureau Veritas Certification Rus - Lead Auditor, Lead Tutor, Verifier

He has over 30 years of experience in Low Frequency Electromagnetic Fields of ocean, atmosphere and ships R&D, engineering, and management, environmental science. He worked in Krylov's Research Centre, Saint-Petersburg. At the same time he worked for 15 years as professor of physics at the Marine Technical University. He has published two books, more then one hundred papers in the different scientific journals. Now he is a Lead auditor of Bureau Veritas Certification for Quality Management Systems, Environmental Management System, Occupational Health and Safety Management System. He performed over 400 audits since 1998. Also he is a Lead Tutor of the IRCA registered ISO 9001 QMS Lead Auditor Training Course. He is an Assuror of Social Reports. He has undergone intensive training on Clean Development Mechanism /Joint Implementation in September 2008, Istanbul and March 2009, Moscow.

Ashok Mammen - PhD (Oils & Lubricants).
Internal Technical Reviewer
Bureau Veritas Certification – ITR, Lead verifier, Lead auditor

He has over 20 years of experience in chemical and petrochemical field. Dr. Mammen is a lead auditor for environment, safety and quality management systems and a lead verifier for GHG projects. He has been involved in the validation and verification processes of more than 60 CDM/JI and other GHG projects.