



DETERMINATION REPORT

CLIMATE CHANGE GLOBAL SERVICES (CCGS)

**Determination Report on JI Project
“WASTE HEAT RECOVERY USING “ALFA LAVAL”
HEAT EXCHANGERS AT OJSC “ILIM GROUP”
BRANCH IN THE TOWN OF UST-ILIMSK, RUSSIAN
FEDERATION”**

BUREAU VERITAS CERTIFICATION

REPORT NO. RUSSIA/0030-2/2009, REV. 01



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 "Ilim Group" Branch in the town of Ust-Ilimsk, Russian Federation"

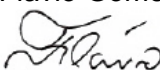



Date of first issue: 30/09/2009	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CCGS Ltd.	Client ref.: Mr. Egor Ershov

Summary:
 Bureau Veritas Certification has made the determination of the project "Waste heat recovery using "Alfa Laval" heat exchangers at OJSC "Ilim Group" Branch in the town of Ust-Ilimsk, 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/0030-2/2009	Subject Group: JI	
Project title: Waste heat recovery using "Alfa Laval" heat exchangers at OJSC "Ilim Group" Branch in the town of Ust-Ilimsk, Russian Federation		
Work carried out by: Flavio Gomes – Team leader, Lead verifier  Leonid Yaskin – Team member, verifier  George Klenov – Team member, verifier 		
Work verified by: Ivan Sokolov - Internal technical reviewer 		
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Indexing terms:

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

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Abbreviations

AIE	Accredited Independent Entity
BCD	Bleached-and-Cleaning Department
BL(S)	Baseline (Study)
BLBR	Black Liquor Recovery Boiler
BV	Bureau Veritas
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
CWD	Cooking-and Washing Department
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)
I	Interview
IE	Independent Entity
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate Return
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MoV	Means of Verification
NGO	Non Governmental Organization
NPV	Net Present Value
PDD	Project Design Document
PP	Project Participant
PPM	Pulp and Paper Mill
THPP	Technological heat and power plant
UI CHPP	Ust-Ilimsk Combined Heat and Power Plant
UI PPM	Ust-Ilimsk Pulp and Paperboard Mill
UI TPC	Ust-Ilimsk Timber Processing Complex
UNFCCC	United Nations Framework Convention for Climate Change



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1 Introduction

Climate Change Global Services, LLC has commissioned Bureau Veritas Certification to determine its JI project “Waste heat recovery using “Alfa Laval” heat exchangers at OJSC “Ilim Group” Branch in the town of Ust-Ilimsk, Russian Federation” (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 Ust-Ilimsk.

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.



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1.3 GHG Project Description

The project is implemented on the site of OJSC “Ilim Group” Branch in the town of Ust-Ilimsk (the former OJSC “Ust Ilimsk Timber Industry Complex”), Irkutsk Region, Russia.

Open Joint Stock Company “Ilim Group” (OJSC “Ilim Group”) was incorporated on September 27, 2006 in Saint-Petersburg. In 2007 OJSC “Kotlas PPM”, OJSC “Pulp and Paperboard Combinat”, OJSC “Bratskcomplexholding” and OJSC “Production Association “Ust-Ilimsk Timber Processing Complex”” (UI TPC) joined the Group through single share issue.

The strategic partner of OJSC “Ilim Group” 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 Branch of OJSC “Ilim Group” in Ust-Ilimsk is the former OJSC “Production Association “Ust-Ilimsk Timber Processing Complex” (further is referred as Mill). Construction of Ust-Ilimsk PPM began in 1973. To date the Mill’s capacity is 630 thousand tonnes of market pulp per year.

The principal product of Ust-Ilimsk Pulp and Paper Mill (UI PPM) is market bleached pulp. A large quantity of acid and alkaline waste streams with the temperature of about 60°C is produced in the pulp bleaching process. Prior to the project the heat of these waste streams had not been utilized. Bleaching waste streams are delivered for neutralization, mixed with cold water (in order to bring the temperature down to the permissible level of 40°C) and then to the waste water treatment plant in accordance with the design developed for the whole enterprise.

The aim of the project is to improve recover low-grade heat of acid and alkaline waste streams from the pulp bleaching process at OJSC “Ilim Group” Branch in the town of Ust-Ilimsk.

The project envisages installation of four plate heat exchangers manufactured by Alfa Laval at two flows of acid and alkaline bleaching waste streams. This ensures recovering low-grade heat of these waste streams and returning part of heat back to the technological process. The cooling medium is water which is fed to the heat exchangers from the evaporator plant at 40°C. The water is heated up to 55°C by the heat of the waste streams and is further used for process needs in the Cooking-and-Washing (CWD), Bleaching-and-Cleaning (BCD) and in the Drying Departments. Thus, an additional water heating stage emerges due to which some of the heat carried by the bleaching waste streams is returned into the pulp production cycle, thus reducing the heating steam demand. The bleaching streams, in turn, are cooled down to the temperature of around 50°C, thereby reducing the consumption of fresh water required for diluting the waste streams before discharge.



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At the same time the installation of bleaching waste stream coolers affected the operation of the heat exchangers designed for black liquor cooling and for condensation of waste gas-vapour streams from digesters in the CWD. Since the water temperature at the inlet to the heat exchangers has increased from 40°C to 55°C, the heat-exchange surface area is no longer adequate for efficient and stable performance of the equipment. Therefore, the project also involves replacing twelve shell-and-tube and plate-type coolers for black liquor and condensers for waste gas-vapour streams from the 1st and the 2nd digesters. These are to be replaced with Alfa Laval heat-exchangers that can ensure the required heat flow at a higher inlet temperature of water.

Besides the installation of new heat exchangers caused the hydraulic resistance of water and waste streams to rise. Therefore the project implementation necessitated replacement of some pumps with more powerful ones.

The implementation of the project made it possible to:

- utilize low-grade heat by waste stream coolers of BCD;
- reduce heat supplies from UI CHPP (which is the marginal source) and fossil fuel (coal) combustion at this CHPP;
- reduce negative environmental impact;
- reduce GHG emissions by an average of 150 019 tCO₂e/year over the period 2008-2012.

The project implementation was associated with a number of serious technological, operational and financial barriers. Therefore, the decision to implement the project was made by the company management in view of the possibility to cover some costs and offset the project risks by selling GHG emission reductions in the international market.

The reduction of greenhouse gases (GHG) emissions due to the project is achieved by reduction of heat (steam) consumption for the Mill's process needs from the nearby Ust-Ilimsk combined heat and power plant (UI CHPP) with a proportional reduction of fossil fuel (coal) combustion thereat. UI CHPP is a part of OJSC “Irkutskenergo” and is the marginal source of energy for UI PPM.

From October 2005 till February 2007 four narrow channels plate heat exchangers of M30 type manufactured by Alfa Laval were put into operation in the BCD for cooling of acid and alkaline bleaching waste streams. However, in the course of operation the narrow channels heat exchangers got clogged with tar and lignin contained in bleaching waste streams (especially in alkaline streams). This necessitated carrying out frequent and labour-intensive cleanouts of the heat exchangers. Therefore it was necessary to alter the project and replace the narrow channels heat exchangers with wide-gap channels heat exchangers of WideGap 350S type by the same manufacturer. By the end of 2008 wide-gap channels heat exchangers had been put into operation at both alkaline waste stream flows. The narrow channels exchangers installed at the acid waste stream flows are planned to be replaced in 2010.

As of today the total volume of investments into equipment procurement alone has amounted to over RUR 90 million. In addition, in 2010 it is planned to spend another



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RUR 20 million on procurement of wide-gap channels heat exchangers for acid waste streams.

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 Ust-Ilimsk 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

Ivan Sokolov
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) off-site assessment at the Meeting with PDD developer (August 6th 2009) and on-line collaboration with UI PPM representatives;
- 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.



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Determination Protocol Table 1: Mandatory Requirements

Requirement	Reference	Conclusion	Cross reference
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), 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.



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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



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2.1 Review of Documents

CCGS has submitted to Bureau Veritas Certification on 23/07/2009 the Project Design Document (PDD) Version 1.0 dated 23/07/2009. The PDD 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 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 was submitted to CCGS on 06 September 2009. The determination findings presented in this DDR versions relate to the project as described in the original PDD version 1.0 dated 23/07/2009 and version 1.1 dated 18/09/2009.

CCGS has submitted to Bureau Veritas Certification on 20/09/2009 the completed PDD, version 1.1, dated 18/09/2009 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 Meeting with PDD developer on 6 August 2009. On-line interviews with project participants were conducted as well to confirm selected information and to resolve the issues of concern identified in the document review. Representatives of OJSC “Ilim Group” and CCGS which were interviewed are listed in References, Section 6. The main topics of the interviews held are summarized in Table 1. Additional evidences have been collected during surveillance audit of the Management system against ISO 9001, ISO 14001 and OHSAS 18001 standards requirements.



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Table 1 Interview topics

Interviewed organization	Interview topics
OJSC "Ilim Group" and OJSC "Ilim Group" Branch in the town of Ust-Ilimsk	<ul style="list-style-type: none"> ➤ OJSC "Ilim Group" Branch in the town of Bratsk pulp production programme ➤ Project management organisation ➤ Environmental Impact Assessment ➤ Project monitoring responsibilities ➤ Monitoring equipments ➤ Quality control and quality assurance procedures
CCGS	<ul style="list-style-type: none"> ➤ Technical project documentation ➤ Evidence and records on boiler reconstruction and its operation ➤ Baseline and Project scenarios ➤ Monitoring plan ➤ Barrier (technological and financial) analysis ➤ Additionality justification ➤ Common practice analysis ➤ Estimation of the methane emissions from the dump ➤ Estimation of the leakage ➤ 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 DDR, version 01, summarising Bureau Veritas Certification's findings, was submitted to the project participants on 06/09/2009. The findings identified have been thirteen Corrective Action Requests and one Clarification Request. Based on the findings of the Draft Determination Report, CCGS made necessary amendments and corrections



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to the PDD Version 1.0 and, eventually, the Version 1.1 dated 18/09/2009 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 30/09/2009. 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 heat supplies from UI CHPP (which is the marginal source) and fossil fuel (coal) combustion at this CHPP.

The project uses the state-of-art technology. It envisages installation of four heat exchangers manufactured by Alfa Laval at two flows of acid and alkaline bleaching waste streams and replacing of twelve heat exchangers in the Cooking-and Washing Department (CWD). The project design engineering represents current good practices in using of the wide-gap channels plate and spiral Alfa Laval heat exchangers that have higher efficiency and are capable of ensuring the required heat flow at a higher water temperature.

The outcomes of project activity will be the following effects:

- mitigation of adverse environmental impacts; and



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- average reduction of GHG emissions by 148 254 tCO₂e/year over the period 2008-2012. Total estimated emission reductions will equal 741 271 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 Ust-Ilimsk made a decision on implementation of this project on 25/02/2005 (the date of contract with OJSC “Alfa Laval Potok” for supply of the first heat exchangers). Their commissioning as the first project stage was completed on July 2007, final stage is planning to be completed up to 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, CAR 05, CAR 08).

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 without undertaking any measures aimed at utilization of low-grade heat of bleaching waste streams. The temperature of waste streams is reduced before their discharge by mixing them with fresh water only. The shortfall of heat is covered in full by supplies from Ust-Ilimsk CHPP. The heat exchangers of the CWD wouldn’t need to be replaced since they could ensure the required heat flow at a lower inlet temperature of water. The technical condition of these heat exchangers allowed to operate them in the previous mode for a number of years yet, provided that scheduled maintenance is carried out. This scenario is less risky and does not require significant investment.

The baseline is the technically feasible scenario and it does not violate Russian legal requirements.

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 of JI project were identified: 1- continuation of the current situation; 2- Project activity without JI mechanism; 3- Installation of heat exchangers



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only in the BCD without replacement of heat exchangers in the CWD. These scenarios are not in contradiction with the mandatory legislation and regulations. Each alternative was reviewed.

First alternative does not required any modifications of the process scheme, it is simplest one and does not face any technological barriers. The second alternative requires large capital investments and it encounters a number of serious technological, operational and financial barriers. In particular the financial barriers are connected with the high initial capital expenditure (about RUR 110 million). Alternative 3 faces significant technological and financial barriers and has been excluded from further consideration.

Common practice analysis showed that UI PPM implemented a unique set of technical solutions for low-grade waste heat utilization. The uniqueness of the project is that this is the first in Russia experience of implementation of such a large-scale replacement of heat exchangers.

According to Alfa Laval’s data, the heat exchangers installed on the flows of acid and alkaline bleaching waste streams are unique in their size and thermal capacity in the pulp and paper industry of Russia and CIS countries alike.

The alternative analysis, technological and barrier analysis and common practice analysis have demonstrated that the proposed project activity is not attractive without the revenue from the sale of emission reduction units (ERUs). Accordingly, the Alternatives 1 was taken as the baseline.

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 06, CAR 07, CAR 09, CAR 10, CL 01).

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 Meeting with PDD developer, on-line interviews and surveillance audit of the Company Management System 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).

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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 PDD version 1.0 and 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 at UI CHPP.

The principal GHG released during combustion of fossil fuel is CO₂. Emissions of CH₄ and N₂O from combustion of fossil fuel are negligibly small as compared with CO₂ emissions and were neglected in development of this project.

The key factors that characterize the project scenario are:

- the volumes of pulp production by the Mill;
- heat utilization by the waste streams coolers of the BCD;
- increase in electricity consumption by pump drives for circulation of heat-transfer liquids through the heat exchangers;
- reduction of heat production by UI CHPP boilers as a result of the project;
- reduction of coal consumption at UI CHPP as a result of the project;
- reduction of heat-consumption-based electricity supply from UI CHPP as a result of the project;
- GHG emission factors.

Each factor is considered in detail in the PDD.

The baseline scenario is business as usual within the framework of the existing standards and rules. 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 the same as for project.

The calculated value of project emission reduction over the crediting period 2008 – 2012 is 741 271 tCO₂e. Annual average emission reduction is 148 254 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.

In accordance with the Russian legislation there are no requirements to the development of any environmental measures, such as Maximum Permissible Emissions, Maximum Permissible Concentrations or Environmental Impact Assessment.



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The installation of the heat exchangers for acid and alkaline waste streams has led to reduction of fossil fuel (coal) combustion at UI CHPP, and hence to reduction of pollutants and GHG emissions into the atmosphere.

The quantity, rate of recurrence and content of pollutants in the waste streams from the BCD meet the requirements of the Process Procedure for Pulp Bleaching and Sorting Process. The quality of the industrial waste streams is subject to laboratory control. The consumption of fresh water for diluting the bleaching waste streams before feeding them for neutralisation has reduced as a result of the project.

Furthermore, the disposal of coal ash to the ash disposal site reduces as well.

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 and CAR 13).

3.6 Comments by Local Stakeholders

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

The public of the town was informed about the planned implementation of the project through the local mass media: in the plant’s newspaper “Vestnik Ulinskogo LPK”, e.g. in issue No.85 dated November 2, 2005.

This publication has not given rise to any public comments. No comments from the town’s community were received.

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 28.07.2009 and invited comments within 26.08.2009 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 “Waste heat recovery using “Alfa Laval” heat exchangers at OJSC “Ilim Group” Branch in the town of Ust-Ilimsk, Russian Federation”. 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.



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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 iv) opinion.

The review of the project design documentation, the subsequent follow-up interviews, and the resolution of the Corrective Action Requests and Clarification Request 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 18/09/2009 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



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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 Ust-Ilimsk" Integrate Management System to ISO 9001, ISO 14001 and OHSAS 18001 25 – 28 august 2009.
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	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 "Cooling of acid and alkaline streams at bleached pulp production lines", JSC "Ust-Ilim design and Technology Bureau", 2009, "General Explanatory Note", cl.1 "Production technology" and cl.3 "Environmental Protection".
2	Application for design "Cooling of alkaline streams", JSC "Branch in the town of Ust-Ilim", 2007.
3	Application for design "Cooling of acid streams", JSC "Branch in the town of Ust-Ilim", 2008.
4	Task for design No.10446 (Project 07-001-06), OJSC "Production Association "Ust-Ilimsk Timber Processing Complex"", dd.13.03.2006.
5	Task for design No.10460 (Project 07-001-06), OJSC "Production Association "Ust-Ilimsk Timber Processing Complex"", dd.14.03.2006.
6	Contract "Facilities for cooling acid streams" between OJSC "Ilim Pamp EKSIM" and JSC "Alfa Laval Potok", No.105-06-62, dd.15.04.2005.
7	Technical solution approved by Technical director, dd. 18.12.2006.



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8	General Explanatory Note “The calculation of heat-and-material balances for BCD, CWB and Drying Departments», OJSC “Sibgiprobum”, #51138, Irkutsk, 2006.
9	Certificate of Quality for Heat Exchanger “M30-FM”, No.30105-39042, installed 2006.
10	Certificate of Quality for Heat Exchanger “M30-FM”, No.30105-26683, installed 2005.
11	Permit, issued by Gosgortekhnadzor No.PPC 04-9220 dd.11.07.2003.
12	Certificate of Quality for Heat Exchanger “WideGap350S-FM/TL35-SFM”, No.30106-15351, installed 2008.
13	Specification on Plate Wide Gap Yeat Exchanger Type 350S.
14	Instruction No.И ТЭО 20030-16 “Technical exploitation of the heat exchanger No.51.117A and 52.117A”, Ust-Ilimsk, approved 04.02.2008.
15	Act of Acceptance “Replacing of the heat exchanger 32.698 by spiral Alfa Laval type 1H-L-2T in accordance with Design No.11006-TX, OJSC “Ilim Group” Branch in the town of Ust-Ilim”, dd.01.12.2008.
16	Certificate (Passport) No. ДДШ2-822-000 ПС “Thermoresistance ТСП 9201”, etc.
17	Calibration records and tags concerning testing equipment.
18	Reporting data on production parameters and steam consumption at OJSC “Ilim Group” Branch in the town of Bratsk.
19	Production Report on December 2008, OJSC “Ilim Group” Branch in the town of Ust-Ilimsk”, dd.13/01/2009.
20	Protocol of Intention between local non-profit organization “Environmental Investment Center” and OJSC “Production Association “Ust-Ilimsk Timber Processing Complex”” regarding implementation of project aimed, 2000.
21	Administration decree “Realization of the project of cooling of acid and alkaline streams at bleached pulp production lines”, OJSC “Production Association “Ust-Ilimsk Timber Processing Complex””, dd.02/12/2004, #252-a.

All these documents have been available for auditors.

Persons interviewed:

1	Andrey N. Andreev, OJSC “Ilim Group”, EHS Director.
2	Alexander V. Samorodov, CCGS, Director.
3	Ilya Goryashin, CCGS, specialist, PDD-writer.
4	Egor Ershov, CCGS, specialist, PDD-writer.

7 DISCLAIMER

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 under the verification procedure under the JISC, as defined in the JI guidelines, paragraphs 30–45. Instead, paragraph 23 of the JI guidelines applies 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”.