VERIFICATION REPORT

CLIMATE CHANGE GLOBAL SERVICES (CCGS)

INITIAL AND FIRST PERIODIC VERIFICATION OF THE

"Evaporation System Modernization at OJSC "Ilim Group" Branch in Koryazhma"

MONITORING PERIOD:
1 JANUARY 2008 TO 31 DECEMBER 2009

BUREAU VERITAS CERTIFICATION

Bureau Veritas Certification Holding SAS

REPORT NO. RUSSIA/0049-2/2010, VERSION 2

VERIFICATION REPORT

Date of first issue: 18/03/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CCGS LLC	Client ref.: Vladimir Dyachkov

Summary:

Bureau Veritas Certification has been commissioned by Climate Change Global Services (CCGS LLC) to carry out, under JI track 1 procedure, the Initial and 1st periodic verification of the JI project “Evaporation System modernization at OJSC “Ilim Group” Branch in Koryazhma” (sectoral Manufacturing industries (4)), based on UNFCCC criteria for the JI, as well as criteria given to ensue consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification covers the period from January 1st 2008 to December 31st 2009. The verification is based on the consolidated Monitoring Report (MR), version 2.1 dated 17/05/2010, the Monitoring Plan as set out in the determined PDD version 1.2 dated 13/05/2009 (with some deviations from PDD justified in the MR), and supporting documents made available to Bureau Veritas Certification by the project participant.

The verification is carried out as a combined initial and 1st periodic verification. A risk-based approach has been followed to perform the verification. The first output of the verification process was the Draft Verification Reports 2008 and 2009 respectively. They contain the lists of Corrective Actions Requests and Forward Actions Requests (CAR and FAR), presented in Appendixes A, B, C. In the course of verification, 9 Corrective Action Requests (CAR) and 4 Forward Action Requests (FAR) were raised and successfully closed. On reported FAR (FAR 05) is left pending until the next periodic monitoring.

As a result of the initial verification, the Bureau Veritas Certification confirms that all operations of the project are implemented as planned and described in the PDD with justified deviations, the installed equipment runs reliably and is calibrated appropriately, the monitoring system is in place and functional. The project has been generating emission reductions. It is observed, however, that project did not receive approvals from the involved parties.

As the results of the periodic verification, the Bureau Veritas Certification confirms that the GHG emission reductions are calculated without material misstatement in conservative and appropriate manner. Bureau Veritas Certification herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as of 109 187 tCO_2 in the year 2008 and 125 623 tCO_2 in the year 2009.

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Project title: “Evaporation System modernization at OJSC “Ilim Group” Branch in Koryazhma”		
Work carried out by: George Klenov – Lead Verifier		
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Abbreviations

AIE	Accredited Independent Entity
BL	Black Liquior
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CCGS	Climate Change Global Services
CHP	Combined Heat and Power Station
CHPP	Combined Heat and Power Plant
CL	Clarification Request
CO_2	Carbon Dioxide
CPP	Cardboard and Paper Production
DR	Document Review
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ERU	Emission Reduction Unit
FAR	Forward Action Request
FVP	First Verification Protocol
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
OJSC	Open Joint Stock Company
PDD	Project Design Document
PP	Project Participant
PPM	Pulp and Paper Mill
RL	Red Liquior
SAS	Softwood Sulfate Pulp
SBPP	Sulfate bleached pulp production
tCO_2e	tonnes CO_2 equivalent
UNFCCC	United Nations Framework Convention for Climate Change
INV / FVP	Initial Verification Protocol / First Verification Protocol

1.1 INTRODUCTION

CCGS LLC, the Russian Federation has commissioned Bureau Veritas Certification to carry out the Initial and 1st periodic verification of the JI project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma" (hereafter called "the project").

This report summarizes the findings of the verification of the project, performed based on UNFCCC criteria, as well as criteria given to ensure consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

Initial and first periodic verification has been performed as one integrated activity. It consisted of a desk review of the project documents including PDD, monitoring plan, determination report, monitoring report and further documentation.

The verifiers have reviewed the GHG data collected for the period from January 1st 2008 to December 31st 2009.

1.2 Objective

The purpose of this verification is a combined Initial and 1st verification.

The objective of the initial verification is to verify that the project is implemented as planned and described in the PDD, to confirm that the monitoring system is in place and fully functional, and to assure that the project will generate verifiable emission reductions.

The objective of the periodic verifications is the review and ex post determination by the AIE of the GHG emission reductions. It includes the verification of the data given in the monitoring report by checking the monitoring records and the emissions reduction calculation.

1.3 Scope

The verification of this project is based on the Project Design Document version 1.2 dated 13/05/2009, the Monitoring Reports (covers the period of January 1st 2008 – December 31st 2009) version 2.0 dated 12/03/2010 and version 2.1 dated 17/05/2010, the monitoring plan as set out in the PDD with justified deviations, supporting documents made available to Bureau Veritas Certification, and information obtained through the on-site interviews and on-site assessment. The documents and information are reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

Bureau Veritas Certification, based on the recommendations in the Validation and Verification Manual (IETA/PCF), has employed a risk-based approach in the verification, focusing on the identification and reporting of significant risks and on reliability of project monitoring and generation of Emission Reductions Units (ERU).

The verification is not meant to provide any consulting towards the Client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.4 GHG Project Description (quoted by PDD Section A.2)

The project is aimed at modernization of the Mill's evaporation system, which is intended to reduce power consumption of the pulp production process, stabilize operation of the process equipment, mitigate negative environmental impacts and reduce greenhouse gases (GHG) emissions.

The pulp cooking process produces large quantities of spent liquor which contains wood dissolution products. Liquor is fed to the evaporator plant designed to remove excess water from spent liquor and to bring its concentration to at least 50% of dry matter, so that minerals could be further recovered and useful energy could be generated by firing liquor in liquor recovery boilers. Liquor evaporation process has very high requirements of steam, electricity and water and yields large quantities of contaminated condensate and malodorous gases.

Before the project implementation liquors have been evaporated by six evaporator plants characterized by low efficiency and lack of operation consistency. Average specific steam consumption was high; condensate and warm water were discharged into the sewerage system without recycling; harmful gases were emitted into the atmosphere. Significant proportion of liquors had to be evaporated at the plants, which were not fitted with concentrators (designed to increase dry matter content up to 65%). Therefore liquor recovery boilers had high losses caused by water evaporation from the liquor during combustion.

Deficient operation of the evaporation system resulted in lower level of liquor separation in the pulp washing process; thus a significant part of liquor solids was irretrievably lost. Another negative side effect was the high demand of chemicals for pulping.

This project envisaged construction of a new high-technology evaporator plant manufactured by "Andritz" with the evaporating capacity of 600 tonnes per hour and decommissioning of the two old "Ramen" evaporator plants with the design capacity of 140 tonnes per hour, each.

The new evaporator plant is a single-line six-stage plant consisting of seven evaporating units operating as per a six-stage scheme and on the principle of falling film formed across heat exchange surfaces manufactured from "lamellar" packages. Highly contaminated condensates are treated in a stripping column. Design concentration of dry residue after the evaporator plant is 53%, further evaporation to 65% is achieved in the existing "Ahlstrom" concentrators. Evaporating capacity of the evaporator plant can be freely regulated within the range of 20÷100%. Quick start and shutdown of the units is ensured by presence of small quantities of liquor in the units.

The equipment was mounted in full and put into test operation on 20.12.2007.

To this end in 2008 the company began cooperation with CCGS LLC, which acts as a consultant and a commercial agent of OJSC "Ilim Group". CCGS LLC is not a project participant, but is responsible for the Joint Implementation Project and for implementation of the monitoring plan.

1.5 METHODOLOGY

The verification of the project consisted of the following activities:

- On-site assessment held on 05/05/2009 – 07/05/2009 (combined with determination);
- Publication of the 1st Monitoring Report on the BV site;
- Desk review of the 1st Monitoring Report and supporting documents carried out on 30/10/2009 – 31/11/2009;
- Off-site assessment in form of interview with the project participant;
- Preparation of the Draft Verification Protocols v.1 (Appendixes A, B, C);
- Following communications with the project participant by phone and mails;
- Resolution of requests for corrective and forward actions;
- Preparation of the Verification Report v.1;
- Internal Technical Review of the Verification Report v.1;
- Issue of the final Verification Report v.2.

1.6 Verification Protocol

According to the Validation and Verification Manual (IETA/PCF) a verification protocol is used as part of the verification. The protocol represents, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements the study is expected to meet; and
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The verification protocol (IETA/PCF) consists of five tables. The different columns in these tables are described in Figure 1. Table 1 relates to Initial Verification, the rest to Periodic Verification.

The completed verification protocol is enclosed in Appendixes A-C to this report.

In the present Verification Report the IETA/PCF tables were handled as follows:

IETA/PCF tables	Tables in the present Verification Report
Table 1	Refer to Table 1 of Appendix A which relates with the Initial Verification.
Table 2	Is replaced by Table 1 of Appendix B which relates here to the First Periodic Verification.

Tables 3 and 4	Are combined in Table 2 which relates to Periodic Verification.
Table 5	Is replaced by Table 1 of Appendix C.

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification procedures.

Initial Verification Protocol Table 1 [If Applicable]			
Objective	**Reference**	**Comments**	**Conclusion (CARs/FARs)**
The requirements the project must meet	Gives reference to where the requirement is found.	Description of circumstances and further comments on the conclusion	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance of the stated requirements. Forward Action Request (FAR) indicates essential risks for further periodic verifications.

Periodic Verification Protocol Table 2: Data Management System/Controls		
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**
The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/control's ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table.	A score is assigned as follows: • Full - all best-practice expectations are implemented. • Partial - a proportion of the best practice expectations is implemented • Limited - this should be given if little or none of the system component is in place.	Description of circumstances and further commendation to the conclusion. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non compliance with stated requirements. The corrective action requests are numbered and presented to the client in the verification report. The Initial Verification has additional Forward Action Requests (FAR). FAR indicates essential risks for further periodic verifications.

Periodic Verification Protocol Table 3: GHG calculation procedures and management control testing		
Identification of potential reporting risk	**Identification, assessment and testing of management controls**	**Areas of residual risks**
Identify and list potential reporting risks based on an assessment of the emission factor calculation procedures, i.e. • the calculation methods, • raw data collection and sources of supporting documentation, • reports/databases/information systems from which data is obtained. Identify key source data. Examples of source data include metering records, process monitors, operational logs, laboratory/analytical data, accounting records, utility data and vendor data. Check appropriate calibration and maintenance of equipment, and assess the likely accuracy of data	Identify the key controls for each area with potential reporting risks. Assess the adequacy of the key controls and eventually test that the key controls are actually in operation. Internal controls include (not exhaustive): • Understanding of responsibilities and roles • Reporting, reviewing and formal management approval of data; • Procedures for ensuring data completeness, conformance with reporting guidelines, maintenance of data trails etc. • Controls to ensure the arithmetical accuracy of the GHG data generated and accounting records e.g. internal audits, and checking/ review	Identify areas of residual risks, i.e. areas of potential reporting risks where there are no adequate management controls to mitigate potential reporting risks Areas where data accuracy, completeness and consistency could be improved are highlighted.

supplied. Focus on those risks that impact the accuracy, completeness and consistency of the reported data. Risks are weakness in the GHG calculation systems and may include: • manual transfer of data/manual calculations, • unclear origins of data, • accuracy due to technological limitations, • lack of appropriate data protection measures? For example, protected calculation cells in spreadsheets and/or password restrictions.	procedures; • Controls over the computer information systems; • Review processes for identification and understanding of key process parameters and implementation of calibration maintenance regimes • Comparing and analysing the GHG data with previous periods, targets and benchmarks. When testing the specific internal controls, the following questions are considered: 1. Is the control designed properly to ensure that it would either prevent or detect and correct any significant misstatements? 2. To what extent have the internal controls been implemented according to their design; 3. To what extent have the internal controls (if existing) functioned properly (policies and procedures have been followed) throughout the period? 4. How does management assess the internal control as reliable?	

Periodic Verification Protocol Table 4: Detailed audit testing of residual risk areas and random testing		
Areas of residual risks	**Additional verification testing performed**	**Conclusions and Areas Requiring Improvement (including Forward Action Requests)**
List the residual areas of risks (Table 2 where detailed audit testing is necessary. In addition, other material areas may be selected for detailed audit testing.	The additional verification testing performed is described. Testing may include: 1. Sample cross checking of manual transfers of data 2. Recalculation 3. Spreadsheet 'walk through' to check links and equations 4. Inspection of calibration and maintenance records for key equipment • Check sampling analysis results • Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.	Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties should be highlighted. Errors and uncertainty can be due to a number of reasons: • Calculation errors. These may be due to inaccurate manual transposition, use of inappropriate emission factors or assumptions etc. • Lack of clarity in the monitoring plan. This could lead to inconsistent approaches to calculations or scope of reported data. • Technological limitations. There may be inherent uncertainties (error bands) associated with the methods used to measure emissions e.g. use of particular equipment such as meters. • Lack of source data. Data for some sources may not be cost effective or practical to collect. This may result in the use of default data which has been derived based on certain assumptions/conditions and which will therefore have varying applicability in different situations. The second two categories are explored with the site

		personnel, based on their knowledge and experience of the processes. High risk process parameters or source data (i.e. those with a significant influence on the reported data, such as meters) are reviewed for these uncertainties.

Periodic Verification Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	**Ref. to checklist question in tables 2/3**	**Summary of project owner response**	**Verification conclusion**
If the conclusions from the Verification 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 2, 3 and 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 verifier should be summarized in this section.	This section should summarize the verifier's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".

Figure 1 IETA/PCF Verification Protocol tables

1.7 Review of Documents

The preliminary and final 1st Monitoring Reports and supporting documentation submitted by the project participants as well as additional background documents related to the project design and baseline, i.e. country Law, Kyoto Protocol, JI implementation guidelines, Project Design Document were reviewed.

The verification findings presented in this report relate to the project as described in the PDD Version 1.2 dated 13/05/2009, preliminary and final 1st Monitoring Reports. Preliminary Monitoring Report has been submitted in two parts: first part for January 1st 2008 - 31st December 2008; second part - for January 1st 2009 - August 31st 2009. Final 1st Monitoring Report version 2.1 dated 17/05/2010 was issued for the period January 1st 2008 - 31st December 2009.

1.8 Follow-up Interviews

In the frame of Initial Verification, the Bureau Veritas Certification verifier conducted a visit to the project site on 05-07/05/2009. It was combined with project determination. On-site interviews with the project participant and inspection of the project and monitoring equipment were conducted to collect information needed for further verification of emission reduction. Representatives of OJSC "Ilim Group" Branch in Koryazhma" and CCGS LLC were interviewed (see References in Section 6).

In the frame of 1st Periodic Verifications, the Bureau Veritas Certification verifier conducted interviews with the CCGS LLC on 15/12/2009 (see References in Section 6).

The main topics of the interviews are summarized in Table 6.

1.9 Table 6 Interview topics

Interviewed organization	Date	Interview topics
CCGS LLC	15/12/2009	➢ Monitoring plan ➢ Roles and responsibilities for data collection ➢ Training to monitoring procedures ➢ Data to be collected ➢ Measurement equipment (inspection, characteristics, status) ➢ QC and QA procedures ➢ Evaporator Plants including plant manufactured by "Andritz" (visitation, parameters) ➢ Combined heat and power plant (visitation, parameters) ➢ Electricity supply ➢ Data logging ➢ Data archiving ➢ Environmental impact records ➢ EMS
		➢ Deviations from the monitoring plan ➢ Roles and responsibilities for data processing and reporting ➢ Requirements to competence ➢ Data management ➢ Use of calculation tools ➢ Emission calculations ➢ Monitoring report verification and validation ➢ QC and QA procedures ➢ IT management

1.10 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective actions, and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission calculation.

Findings established during the verification can either be seen as a non-fulfillment of criteria ensuring the proper implementation of the project or where a risk to deliver high quality ERUs is identified.

Corrective Action Requests (CAR) are issued, where:
i) there is a clear deviation concerning the implementation of the project as defined in 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.

Forward Action Requests (FAR) are issued, where:
iv) the actual status requires a special focus on this item for the next consecutive verification, or
v) an adjustment of the Methodological Procedure is recommended.

Clarification Request (CL) are issued, where:
vi) additional information is needed to fully clarify an issue.

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

2 VERIFICATION FINDINGS

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

1) Where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Clarification Request or Corrective Action Request or Forward Action Request, respectively, have been issued. The Clarification Requests as well as Corrective Action Requests and Forward Action Requests are referred, where applicable, in the following sections and are further documented in the Initial Verification Protocol and the First Periodic Verification Protocol in Appendix A. The verification of the project resulted in 9 Corrective Action Requests and 5 Forward Action Requests (they have been raised against preliminary Monitoring Report consisted of two parts. Consequently most of the CAR's and FAR's arisen for part one and part two coincide).

2) In the context of Forward Action Requests, risks have been identified, which may endanger the delivery of high quality ERUs in the future, i.e. by deviations from standard procedures as defined by the Monitoring Methodology. As a consequence, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions. Forward Action Requests are understood as recommendation for future project monitoring; they are stated, where

applicable, in the following sections and are further documented in the Initial Verification Protocol (Table 1 in Appendix A) and the First Periodic Verification Protocol (Tables 1 and 2 in Appendix B) . One Forward Action Request is left open till the next Periodic Verification.

3) The final verifier conclusions for verification subject are presented.

Requests for actions and clarifications from the Initial and Periodic Verification are presented in Appendixes A, B, C. Since that verification is combined, hence findings of Periodic Verification can be appropriately used for answering questions of Initial Verification Protocol.

3 INITIAL VERIFICATION FINDINGS

3.1.1 Remaining issues, CAR's, FAR's, CL's from previous verification

CAR 01 (pending approval by Host Party) from Determination Report remained open.

Please refer to the verifier's Note Part b) in Determination Report, Appendix A, Table 1, item 1: "JISC Glossary of JI terms/Version 01 defines the following:
(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 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".

So far there is no clarity as to how the above JISC requirement will be fulfilled under Track 1.

3.1.2 Project Implementation

The power plants constructed by the project are fully operational as was observed by the verifier at the site visit.

During the monitoring period, the following changes were made to the operational equipment. Since January 11th, 2009, red liquor is redirected to the evaporator plant "UkrNIIHimMash".

Red liquors had been evaporated at the new "Andritz" evaporator plant from its commissioning and until January 11th, 2009. Various evaporation modes and chemicals had been tried. Eventually it was concluded that co-evaporation of black and red liquors at the new evaporator plant was not possible, because it led to clogging up of distribution grids and, as a consequence, caused clogging up of heating surfaces (lamels) of evaporator plants, meanwhile the fresh steam consumption grew and the plant had to be shut down in order to clean the evaporator units. After shut down of sulfite viscose pulp production, some capacities became available for red liquors evaporation at separate plants of tube type. Currently red liquor is being evaporated at evaporator plant "UkrNIIHimMash".

So, since January 11th 2009 red liquor under the project scenario has been fed to the "UkrNIIHimMash" evaporator plant, just as under the baseline scenario. Therefore, from that moment on, the project and the baseline scenarios have merged together, and the effects

from evaporation of red liquors at the new evaporator plant are lost. In the future, if the same practice of red liquor evaporation is carried on, the monitoring of red liquor parameters will not be needed any longer.

Thus, the effects from red liquor evaporation at the new and more efficient "Andritz" evaporator plant (lower consumption of heat for liquid evaporation and higher output content of dry matter in liquors) can be rightfully taken into account only for the period from 1/01/2009 till 10/01/2009, which has been done.

The starting date of the crediting period did not change and remain 1st January 2008.

The Monitoring System is in place and operational. Monitoring of GHG emission reductions was carried out as per the Monitoring Plan with some deviations, which are described and justified by the CCGS in 1st MR Sections A.7 and D.2. For lack of measurement instruments the following deviations from the monitoring plan were permitted:

1. The monitoring plan given in the PDD provides that heat savings from the use of condensate and warm water generated at the new "Andritz" evaporator plant are determined by readings of respective measuring devices (flow meters and temperature sensors). And such savings are to be metered on an hourly basis. However, all necessary measuring devices were put into operation stage by stage only in mid-2009. Therefore while the measuring devices were still missing, the monitoring of GHG emission reductions in 2008 and partially in 2009 had to use design, statistical and calculated monthly data on flows and temperatures of these heat carriers with strictly complying of the principle of conservatism. As the measuring devices were gradually put into operation, the calculations began to use monthly average (for temperature sensors) and monthly (for flow meters) readings.

2. Monthly volumes of warm water produced at "Andritz" evaporator plant and then used in production process were determined by flow meter readings over the entire monitoring period from January 2008 till December 2009.

3. Water temperatures at the inlet to and at the outlet from the new "Andritz" evaporator plant for the period January 2008 – April 2009 were assumed equal to the highest and correspondingly to the lowest value (which is a conservative solution in terms of GHG emission reductions) within a range of values that includes design data and monthly average readings recorded by measuring devices in May – December 2009. Starting in May and correspondingly in April 2009 these temperatures have been measured by measuring devices and average monthly readings have been used in calculations.

4. Monthly volumes of relatively clean condensate produced at the new "Andritz" evaporator plant and then used in production process were calculated for the entire monitoring period from January 2008 till August 2009 using liquor evaporation data. The calculations used monthly-minimum values of evaporated water quantity which are recorded every week. This, in its turn, resulted in a minimum value of condensate production, and therefore also in a minimum GHG emission reduction effect from

using condensate (the method for calculation of relatively clean condensate is described in more details in 1st MR Section D.2). Beginning from September 2009 volumes of reused relatively clean condensate have been measured by a flow meter and monthly average readings of this flow meter have been used in calculations. When estimated and actual volumes of relatively clean condensate supplied to production during the flow meter operation period (September – December 2009) were compared, it was found that estimated values are lower by 6.7-15.9 %. Therefore the decision to calculate relatively clean condensate volumes using liquor evaporation data is justified and conservative.

5. Monthly volumes of treated condensate produced at the new "Andritz" evaporator plant and then used in production process from January 2008 till August 2009 were initially calculated using a methodology similar to the one used for calculation of relatively clean condensate. However after installation of a flow meter it turned out that not all of the produced treated condensate is supplied to production process. Between 45 490 and 111 450 m^3 of treated condensate are utilized per month, which accounts for between 31.3 % and 56.5 % of the produced quantity. Following the principle of conservatism, the lowest value 45 490 m^3 per month, was finally assumed for the period January 2008 – August 2009 in the calculations. Starting in September 2009 the volumes of reused treated condensate have been measured by a flow meter and monthly average readings of this meter have been used in calculations.

6. Temperature of relatively clean condensate for the period January 2008 – July 2009 was assumed equal to the lowest value (which is a conservative solution in terms of GHG emission reductions) within a range of values that includes design data and monthly average readings recorded by instruments in August – December 2009. Starting in August 2009 this temperature has been measured by an instrument and the monthly average readings of this instrument have been used in calculations.

7. Temperature of treated condensate for the period January 2008 – April 2009 was assumed equal to the lowest value (which is a conservative solution in terms of GHG emission reductions) within a range of values that includes design data and monthly average readings recorded by instruments in May – December 2009. Starting in May 2009 this temperature has been measured by an instrument and monthly average readings of this instrument have been used in calculations.

All deviations from the monitoring plan were taken into account and described in 1st MR Section A.7 and Section D2 and in the calculation model.

The verifier found this deviation fully justified and conservative and appropriate to the project conditions.

Outstanding issues related to the Project Implementation, PP's response and BV Certification's conclusion are described in Appendix A Table 1 (refer CAR 01 and FAR 01) and Appendix B Table 1 (CAR 02).

3.1.3 Internal and External Data

Internal and external data required for calculation of emission reductions are presented in 1st MR Section B.2 and, where deviation from PDD Monitoring Plan is introduced, in 1st MR Section D.2. The monitored values (measured, estimated, and calculated) are presented in 1st MR, Annexes 3, 7 - 11.

The monitoring included measurements of the following parameters

- for project emission:
  - consumptions of natural gas by the utilizing boiler and by flare,
  - weighted average net calorific value of natural gas;
- for baseline emission (total 26 parameters):
  - volume of pulp, ,
  - heavy fuel oil consumption,
  - net calorfic values of RL&BL&fuel oil,
  - heat production and consumption,
  - quantity of RL&BL,
  - volumes and temperatures of warm water&condensates;
- for leakage emission
  - electricity consumptions and supply.

The default ex ante data included: CO_2 emission factor for natural gas (refer to 2006 IPCC V.2 Ch.1); CO_2 emission factor for grid electricity (refer to [4] in MR) and others factors are justified in the PDD (overall 11 factors and constants).

The verifier checked the appropriateness of default external and internal data, the state of monitoring equipment, the calibration procedures, data control, and assessed the qualification of personnel.

Outstanding issues related to Internal and External Data, PP's responses and BV Certification's conclusions are described in Appendix B Table 1 (refer CAR 03, CAR 04, CAR 05, CAR 06, CAR07, FAR 02).

3.1.4 Environmental Indicators

Monitoring of environmental impacts of PPM is carried out in accordance with environmental legislation requirements, as envisaged in the PDD Monitoring Plan. Under the project the old run-down equipment was replaced by new modern equipment purchased from "Andritz", which provides for more complete and efficient evaporation of liquors. The existing environmental management system ensures monitoring of pollution. The environmental monitoring shows that in 2008 and 2009 years the pollutant emission reduced against the pre-investment level. Information on pollutant emission reductions is outlined in 1st MR Section C3.

3.1.5 Management and Operational System

The Management and Operational System supporting GHG emission monitoring is a part of the company's Environmental Management System certified to ISO 14001. Section C.2 of the 1st MR provide sufficient information about the elements of the system related to assigning roles, responsibilities and authorities for implementation and maintenance of monitoring procedures including control of data. The verifier confirms a high effectiveness of this management system. The personnel responsible for monitoring are trained in an appropriate manner. The system has a potential for further improvement as follows from the FARs issued.

Outstanding issues related to Management and Operation System, PP's responses and BV Certification's conclusions are described in Appendix B Table 1 (refer FAR 03, FAR 04, FAR 05).

FAR 05 is left open till the next Monitoring Report.

3.2 Periodic Verification Findings

3.2.1 Completeness of Monitoring

The monitoring of the project is complete, effective and reliable and generally in accordance with monitoring plan contained in the determined PDD, with deviations justified in the 1st MR.

Due to lack of measuring devices the values of some parameters for the period January 2008 – mid 2009 were chosen as more conservative within a range of values that includes design data and monthly average readings recorded by measuring devices in April (May) – December 2009. Starting mid 2009 these parameters have been measured by measuring devices and average monthly readings have been used in calculations (more details see above Section 3.1.2).

All relevant emission sources are covered by the monitoring plan and the boundaries of the project are defined correctly and transparently. Now all pertinent parameters were monitored and determined as prescribed. The collected data were stored during the whole monitoring period. The monitoring methodologies and sustaining records were sufficient to enable verification of emission reductions. During the verification process, no significant lacks of evidence were detected. The reporting procedures, which were described in the final MR and examined during the on-site visit, were found to reflect the ones defined by the monitoring plan.

3.2.2 Accuracy of Emission Reductions Calculation

In spite of the use of the justified methodology, there was made some adjustments to the measured values in order to ensure conservative emission reduction calculation during period January 2008 – mid 2009 (see above Section 3.1.2). All used data including those

determined for the period January 2008 – mid 2009 was of a high quality to assure accurate calculation.

It is evidenced that from the mid 2009 the whole monitoring system was fully operational during the entire monitoring period. The calibration results ensure the correct functionality of all the necessary equipment available in the "Ilim Group" Branch in Koryazhma. The verifier received access to all relevant documentation needed to verify the emission reduction calculation. All used information was traceable and appropriately archived.

The verifier confirms that emission reduction calculations have been performed according to the monitoring plan and to the calculation methodology reported in the final version of the 1st MR in accordance with the PDD and justified deviations. The verifier checked the transfer of monitored data sets to spreadsheets used by PP, correctness of the formulae versus the PDD, programming of formulae and connections, as well as calculations of emission reductions. No inaccuracies in calculations were detected by the verifiers. Finally, our own calculations have shown the same results as given in the final Monitoring Report.

3.2.3 Quality of Evidence to Determine Emission Reductions

The evidences that were obtained by the verifier in order to provide confidence in the provided emission reduction calculation, such as

- 2008 and 2009 "Ilim Group" Branch in Koryazhma Guidelines on Monitoring Plan in place
- The "Ilim Group" Branch in Koryazhma internal orders on JI project implementation and GHG emission monitoring
- Duly maintained installation and operation of duly calibrated equipment
- The present-day metrological control
- Automatic data acquisition system
- Reliable IT
- Procedures for protection and back up of electronic and paper data
- QC and QA procedures
- Clear allocation of responsibilities and authorities
- Competence and commitments of personnel
- Use of excel spreadsheets
- Implementation of data traceability
- Check of transfer of formulas and algorithms into excel
- A detail review for adequacy of any excel spreadsheet
- Collation of spot manual calculations with excel results
- Verification of data handling by Head of the THPP Evaporator Department
- Check for consistency and adequacy of calculations and data in the final MR
- Validation of the final MR by the Director of the Project Implementation Department of CCGS LLC
- Appropriate archiving system
- IPCC data
- Energy audit data

are observed as consistent and to high quality. All used parameters were of sufficient and appropriate quality to assure an accurate monitoring.

3.2.4 Management System and Quality Assurance

To ensure quality of project operation and monitoring an efficient Management and Operation System is developed and maintained as discussed as a part of the Initial Verification in Section 3.1.5 above.

4 PROJECT SCORECARD

Risk Areas		Conclusions			Summary of findings and comments
		Baseline Emissions	Project Emissions	Calculated Emission Reductions	
Completeness	Source coverage/ boundary definition	✓	✓	✓	All relevant sources are covered by the monitoring plan and the boundaries of the project are defined correctly and transparently.
Accuracy	Physical Measurement and Analysis	✓	✓	✓	State-of-the-art technology is applied in an appropriate manner. Appropriate back-up solutions are provided.
	Data calculations	✓	✓	✓	Emission reductions are calculated correctly.
	Data management & reporting	✓	✓	✓	Data management and reporting were found to be satisfying. Potential for improvement is indicated by open FAR 05.
Consistency	Changes in the project	✓	✓	✓	Results are consistent with underlying raw data.

5 VERIFICATION STATEMENT

Bureau Veritas Certification was commissioned by CCGS LLC to carry out, under JI track 1 procedure, the initial and 1st periodic verification of the JI project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma" (sectoral scopes 4), based on UNFCCC criteria for the JI, as well as criteria given to ensue consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria. The verification covers the period from January 1st 2008 to December 31st 2009.

The verification is carried out as a combined initial and 1st periodic verification. A risk-based approach has been followed to perform the verification. In the course of verification, 9 Corrective Action Requests and 5 Forward Action Requests were raised and successfully closed. One reported CAR (CAR 01 from Determination Report) and FAR (FAR 04) are left pending.

The verification is based on the Monitoring Report (covers January 1st 2008 – December 31st 2009), the Monitoring Plan as set out in the determined PDD, Version 1.2 dated 13/05/2009, with justified deviations, and supporting documents made available to Bureau Veritas Certification by the CCGS and project participant.

As a result of the initial verification, the Bureau Veritas Certification confirms that all operations of the project are implemented as planned and described in the PDD, the installed equipment runs reliably and is calibrated appropriately, the monitoring system is in place and functional. The project has been generating emission reductions. It is observed, however, that project did not receive approvals from the involved parties.

As the results of the 1st periodic verification, the Bureau Veritas Certification confirms that the GHG emission reductions are calculated without material misstatement in conservative and appropriate manner. Bureau Veritas Certification herewith confirms that the project has achieved emission reductions as of 109 187 tCO2e in 2008 and 125 623 tCO2e in 2009.

Bureau Veritas Certification
19/05/2010

George Klenov - Lead Verifier

Bureau Veritas Certification
Holding SAS

BUREAU VERITAS
CERTIFICATION
Reviewed
Init
Date: 19/05/2010

REFERENCES

Reviewed documents (including documents obtained at the site visit on 05-07/05/2009 and after interview on 15/12/2009)

1	Monitoring Report on emission of green house gases for JI project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma", part 1, Monitoring period 01.01.2008 – 31.12.2008, v.1.0, CCGS, Arkhangelsk, dated 27/10/2009.
2	Monitoring Report on emission of green house gases for JI project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma", part 2, Monitoring period 01.01.2009 – 31.08.2009, v.1.0, CCGS, Arkhangelsk, dated 03/11/2009.
3	Monitoring Report on emission of green house gases for JI project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma", Monitoring period 01.01.2008 – 31.12.2009, v.1.0, CCGS, Arkhangelsk, dated 17/02/2010.
4	Monitoring Report on emission of green house gases for JI project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma", Monitoring period 01.01.2008 – 31.12.2009, v.2.0, CCGS, Arkhangelsk, dated 12/03/2010.
5	Monitoring Report on emission of green house gases for JI project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma", Monitoring period 01.01.2008 – 31.12.2009, v.2.1, CCGS LLC, Arkhangelsk, dated 17/05/2010.
6	Annex 1 to Monitoring Report "Substantiation of a mass fraction of the treated condensate in total evaporated water quantity".
7	Annex 2 to Monitoring Report "The provisions for quality control procedure in relation to preparation of project design documents and monitoring reports for greenhouse gas emission reduction projects at CCGS LLC".
8	Annex 3 to Monitoring Report "Characteristics of CHPP-1 steam turbines".
9	Annex 4 to Monitoring Report "Calculation model of GHG emission reductions in Koryazhma for 2008" (separate Excel-file).
10	Annex 5 to Monitoring Report "Calculation model of GHG emission reductions in Koryazhma for 2009" (separate Excel-file).
11	"Design technical data of the evaporator plant", Varkaus, dated 21/10/2005.
12	Report "ETHPS Performance" for 2008, 2009 (separate PDF files).
13	Report "Monthly Heat Balance" for 2008, 2009 (separate PDF files).
14	Report "Monthly Electricity Balance" for 2008, 2009 (separate PDF files).
15	PDD "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma", Version 1.2, dated 13/05/2009.
16	BVC Determination Report on the JI Project "Evaporation System modernization at OJSC "Ilim Group" Branch in Koryazhma", v.0.1, dated 18/05/2009.
17	"Person (s) responsible for the monitoring of GHG emission reductions", Order No. FU/1381 of 03/12/2009, OJSC "Ilim Group" Branch in Koryazhma.

18	**"**Person (s) responsible for the monitoring of GHG emission reductions", Order No. FU/512-A of 04/12/2007, OJSC "Ilim Group" Branch in Koryazhma
19	Normative on specific fuel rate in powertrains. OJSC "Ilim Group" Branch in Koryazhma, 30/12/2008.
20	Accreditation Certificate of OJSC "Ilim Group" Branch in Koryazhma, analytical laboratory, expires on 03/10/2010.
21	Permits for Air Emissions # 53 dated 14/06/2007 and # 242 dated 24/11/2008 granted to OJSC "Ilim Group" Branch in Koryazhma by Territorial Direction of Rostekhnadzor.

Persons interviewed on 05-07/05/2009:

1	Nikolay A. Volov, OJSC "Ilim Group" Branch in Koryazhma, Senior technologist of energotechnological heat-and power station PL "Power"
2	Aleksey A. Bersenevskiy, OJSC "Ilim Group" Branch in Koryazhma, Chief of energotechnological heat-and power station PL "Power"
3	Nikolay G. Isaev, OJSC "Ilim Group" Brabch in Koryazhma, Consultant on technical reconstruction - economist
4	Vyacheslav A. Panin, OJSC "Ilim Group" Branch in Koryazhma, Head of ETHP station
5	Mikhail M. Vorontsov, OJSC "Ilim Group" Branch in Koryazhma, Head of evaporator plant
6	Vasiliy P. Ponomarev, OJSC "Ilim Group" Branch in Koryazhma, Head of SAS-1 pulp cooking workshop
7	Alexander V. Samorodov, CCGS, Director
8	Dmitry Potashev, CCGS, specialist, PDD-writer

Persons interviewed on 15/12/2009:

1	Andrey Andreev – OJSC "Ilim Group"s Central Office in Saint-Petersburg, Director for Environment and Industrial Safety.
2	Vladimir Dyachkov – CCGS, Director of Project Implementation Department
3	Evdeniy Zhuravskiy – CCGS, Specialist of Project Implementation Department

6 DISCLAIMER

This report contains the results of the determination of whether the ensuing reductions of anthropogenic emissions by sources reported by the project participant meet the relevant requirements of Article 6 of the Kyoto Protocol and the JI guidelines. The used procedure does not fall under the Verification Procedure under the JISC, as defined in the JI guidelines. Instead, paragraph 23 of the JI guidelines apples to the verification with a reservation that the project approvals by the host Party involved are pending. Based on this verification, Bureau Veritas Certification Holding SAS issues, under the contractual arrangements with CCGS LLC, an expert opinion on the emission reductions as per the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".

APPENDIX A: COMPANY JI PROJECT INITIAL VERIFICATION PROTOCOL

Table 1 Initial Verification Protocol

Objective	Reference	Comments	Conclusion (CARs/FARs)
1. Opening Session			
1.1. Introduction to audits	N/A	The intention and the target of the audit were illustrated to the participants of the audit. Participants at the audit were the following persons: **Verifier**: George Klenov - Lead Verifier, Bureau Veritas Certification Rus. **Interviewed persons**: – Vladimir Dyachkov – Director of the Project Implementation Department, CCGS LLC; – Alexander Samorodov – Director of Project Preparation Department, CCGS LLC. – Andrey Andreev – Director for Labour Protection, Fire Safety and Environment (OJSC "Ilim Group", Central Office in St.Petersburg).	OK
1.2. Clarification of access to data archives, records, plans, drawings etc.	N/A	The verifier received the open access to all relevant plans, data, records, drawings and equipment.	OK
1.3. Contractors for equipment and installation works *Who has installed the equipment? Who was*	/4, 15/	The new evaporating plant is manufactured and installed by "Andritz Oy". Project has been implemented as defined in the PDD and the implementation is evidenced by statements of work completion.	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
contracted for planning etc.?			
1.4. Actual status of installation works *Project installation should be finished at time of initial verification in so far as the project should be ready to generate emission reductions afterwards.*	/4,15/	Actual status of installation works is in compliance with the project activities (see PDD). Commissioning of equipment has been finished on December 2007. However, all necessary measuring devices were put into operation stage by stage only in mid-2009. Therefore while the measuring devices were still missing, the monitoring of GHG emission reductions in 2008 and partially in 2009 had to use design, statistical and calculated monthly data on flows and temperatures of heat carriers with strictly complying of the principle of conservatism. As the measuring devices were gradually put into operation, the calculations began to use monthly average (for temperature sensors) and monthly (for flow meters) readings.	OK
2. Open issues indicated in validation report			
2.1. Missing steps to final approval *Especially in projects which are not yet registered at JISC, there might be some outstanding issues which should have been indicated by the validation report*	/16/	The project did not receive the host Party's approval.	CAR 01 in [16]
3. Implementation of the project			

Objective	Reference	Comments	Conclusion (CARs/FARs)
This part is covering the essential checks during the on-site inspection at the project's site, which is indispensably for an initial verification			
3.1. Physical components *Check the installation of all required facilities and equipment as described by the PDD.*	/15/	The installation was checked on site, all facilities correspond with PDD.	OK
3.2. Project boundaries *Check whether the project boundaries are still in compliance with the ones indicated by the PDD.*	/15/	Yes, the project boundaries are as defined in the PDD.	OK
3.3. Emission reduction achieved *Compare the value of emission reduction achieved with that estimated in PDD and explain the difference if any*	/4, 15/	Estimated amount of emission reductions are 157 152 tCO_2e in 2008 and 172 955 tCO_2e in 2009 whereas the amounts achieved are 109 187 tCO_2e and 125 623 tCO_2e. This issue will be addressed in the 1st Periodic verification protocol.	OK
3.4. Monitoring and metering systems *Check whether the required metering systems have been installed. The meters have to*	/1-4/	The metering system is installed and it was inspected on site. It is in compliance with national law and power industry regulations. The installations have the measuring devices such as temperature sensors and flow meters as well as density, pressure, weight, concentration and electricity meters to monitor parameters related to project. All measuring devices are included in	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
comply with appropriate quality standards applicable for the used technology.		the structured periodic calibration plans. The procedures for the measuring devices control have been documented. The measuring devices are calibrated during scheduled shutdowns of the equipment. If necessary the removed measuring instrument is replaced with a gauged back up instrument. Operation of the equipment without measuring devices is not allowed.	
3.5. Data uncertainty *How will data uncertainty be determined for later calculations of emission reductions? Is this in compliance with monitoring and metering equipment?*	/1-4/	All measuring devices correspond to the regulatory requirements on accuracy of measuring equipment and measurement deviations that is calculated and certified. This ensures the level of uncertainty of the data required by technology.	OK
3.6. Calibration and quality assurance *Check how monitoring and metering systems are subject to calibration and quality assurance routines* *a) with installation* *b) during future operation*	/1-4/	The measuring equipment is part of detailed calibration plan. The strict control is maintained over the calibration process. The measurements are carried out by measuring equipment calibrated in accordance with the Federal Law №102 "About Unity of Measurements". Calibration records of the measuring devices have been verified at site. All the measuring devices have been found to be calibrated regularly as per determined calibration plan. Responsibility for maintenance of metering equipment is established, documented and communicated.	OK
3.7. Data acquisition and data processing systems *Check the eligibility of used systems.*	/1--14/	Please refer to 3.4 above. The data required for calculation of GHG emission reductions have been collected and recorded in accordance with the schemes of monitoring points. The readings of the instruments used for monitoring of GHG emission reductions are recorded and transmitted to the Automated Process Control	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		System (APCS). The data shall be kept in the Mill's archives in electronic and paper form for at least two years after the end of the crediting period or after the last issue of ERUs.	
3.8. Reporting procedures *Check how reports with relevance for the later determination of emission reductions will be generated*	/4/	Detailed reporting procedures are described in the 1st MR. The Monitoring Plan defines the responsibilities to consolidate the data required for emission reduction calculations. Calculations are transparent and restricted to entering annually the production data into a predefined Excel spreadsheet. At CCGS LLC the procedure for verification of the monitoring reports are laid down in "The provisions for quality control procedure in relation to preparation of project design documents and monitoring reports for greenhouse gas emission reduction projects" (see annex 6 to 1st MR).	OK
3.9. Documented instructions *Check whether the personnel performing tasks with sensitivity for the monitoring of emission reductions have access and knowledge of documented instructions, forming a part of the project's management system.*	/4/	The personal in charge of monitoring and reporting tasks are the managers and lead specialists of OJSC "Ilim Group" Brabch in Koryazhma. Refer to list of Persons interviewed (nos.1-6).	OK
3.10. Qualification and training *Check whether the personnel performing tasks with sensitivity for the monitoring of emission*	/4/	All personnel of the evaporation plant have passed certification in accordance with the requirements of Rostechnadzor. Furthermore, in connection with the commissioning of the evaporator plant, the personnel passed training within the framework of the contract with the equipment supplier, "ANDRITZ OY", in accordance with the personnel's job	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
reductions has the appropriate competences, capabilities and qualifications to ensure the required data quality.		content. Check-out of the equipment required for primary monitoring data collection and personnel training were carried out on September 17-19, 2008; October 29-30, 2008; January 19-22, 2009 and October 6-8, 2009 by CCGS LLC together with the management of OJSC "Ilim Group" Branch in Koryazhma.	
3.11. Responsibilities *Check whether all tasks required to gather data and prepare a monitoring report with the necessary quality have been allocated to responsible employees.*	/4/	**CAR 01**. There is no objective evidence that roles and responsibilities of the "Ilim Group" Branch in Koryazhma functions concerning of the GHG data collection, recording and transmitting are documented and communicated.	CAR 01
3.12. Troubleshooting procedures *Check whether there are possibilities of redundant data monitoring in case of having problems with the used monitoring equipment. Such procedures may reduce risks for the buyers of emission reductions (e.g. the Client)*	/4/	Procedures exists to react in the case incorrect data appear or equipment failure. These procedures include the troubleshooting tips.	OK
4. Internal Data *Identifying the internal GHG data sources and ways in which the data have been collected,*			

Objective	Reference	Comments	Conclusion (CARs/FARs)
calculated, processed, aggregated and stored should be part of initial verification to assess accuracy and reliability of the internal GHG data.			
4.1. Type and sources of internal data *Acquire information on type and source of internal GHG data, which is used in calculations of emission reductions. E.g.." continuous direct measurements", "site-specific correlations", "periodic direct measurements", "use of models" and/or "use of default emissions factors".*	/4-14/	Internal data to be monitored throughout the crediting period (twenty nine parameters) are represented in the 1st MR Tables B.2.1, B.2.2., B.2.3, B.2.4.	OK
4.2. Data collection *How is data collected and processed? What are the means of quantifying emissions from the different data sources?*	/4/	The processing of the data is performed according to the Monitoring Plan and described in 1st MR Section C.2., The procedure for collection and recording of data required for calculation of GHG emission reductions is described in 1st MR Table C.2.1. The information collected at the enterprise is transferred to the Central Office, namely to the Director for Labour Protection, Fire Safety and Environment, who in his turn transfers it to the Director of the Project Implementation Department of CCGS LLC. All information is transferred by e-mail. CCGS specialist (Director of the Project Implementation Department of CCGS LLC, or, on his instructions, other Specialist of the Project Implementation	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
		Department who was not directly involved in preparation of this project monitoring report) shall calculate GHG emission reductions using the provided data and director of project implementation department shall draw up a monitoring report at the end of each reporting year (in accordance with procedure, see 1st MR Annex 2).	
4.3. Quality assurance *Does internal data collection underlie sufficient quality assurance routines?*	/4/	The internal control of data by second independent persons is on sufficient level as specified in the 1st MR Section C.1 "Quality control and quality assurance procedures undertaken for data monitored".	OK
4.4. Significance and reporting risks *Assess the significance and reporting risks related to the different internal data sources. Potential reporting risks may be related to the calculation methods, accuracy of data sources and data collection and/or the information systems from which data is obtained. The significance of and risks associated with the data source indicate the level of verification effort required at a later stage.*	/4/	All records are maintained and stored in the paper and electronic forms. More of parameters are recorded by operators on a daily basis in daily reports, which are then summarized in monthly and annual reports. The rest of value data are recorded in the logs and then transferred to the APCS where they are stored for at least one year, and then the data are sent to the Mill's electronic archive. The data are shown on the displays of all computers with the required software installed. Therefore the risks of misstatement are low.	OK
5. External Data *Especially for data of baseline*			

Objective	Reference	Comments	Conclusion (CARs/FARs)
emissions there might be the necessity to include external data sources. The access to such data and a proof of data quality should be part of initial verification. If it is deemed to be necessary, an entity delivering such data should be audited.			
5.1. Type and sources of external data *Acquire information on type and source of external data, which is used in calculations of emission reductions.*	/15/	The main external data used are constant parameters (in total eleven). All such parameters are obtained from duly referenced technical sources (see PDD Ref. [R3], [R4], [R8-R11] as well as 1st MR Ref. [R4-R7], [R9-R10] and calculation spreadsheets "Monitoring Model 2008" and "Monitoring Model 2009" that contain the values of external parameters). For instance, one of main from them is CO_2 emission factor for electricity consumed from the grid. Its values were taken from "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.	OK
5.2. Access to external data *How is data transferred? How can reproducibility of data set be ensured?*	N/A	Not applicable.	OK
5.3. Quality assurance *Does external data underlie any quality assurance routines?*	N/A	Not applicable.	OK
5.4. Data uncertainty	N/A	Not applicable.	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
Is it possible to assess the data uncertainty of external data? Are such routines included in reporting procedures?			
5.5. Emergency procedures *Are there any procedures, which will be applicable if there is no access to relevant external data?*	N/A	Not applicable.	OK
6. Environmental and Social Indicators *A Monitoring Plan may comprise environmental and/or social indicators, which could be necessary to monitor for the success of the project activity.*			
6.1. Implementation of measures *A project activity may demand for the installation of measures (e.g. filtering systems or compensation areas), which are exceeding the local legal requirements. A check of the implementation or realization of such measures should be part*	/6/	Commissioning of the new evaporator plant makes it possible to completely avoid emissions of harmful substances in the process of liquor evaporation. Stabilization of operation of other evaporator plants by redistribution of liquor streams and load reduction will help to minimize overall emissions from all evaporator plants operated by the Mill. The environmental monitoring shows (see 1st MR Tables C.3.1 - C.3.6) that in 2008 and 2009 the pollutant emissions reduced against the pre-investment level. Reduction of pollutant emissions from the evaporator plants amounted to 418 tonnes in 2008 and 420 tonnes in 2009. Social impact of the project is not identified.	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
of the initial verification.			
6.2. Monitoring equipment *Check where necessary whether the required metering systems have been installed. The meters have to comply with appropriate quality standards applicable for the used technology.*	N/A	The industrial environmental monitoring covers the following: - Analytical control of compliance with the prescribed pollutant emission standards in accordance with the laboratory control charts; - Monitoring of the impact of waste disposal sites on underground and surface waters, atmospheric air and soil; - Control of pollution content in the atmospheric air on the border of the sanitary protection zone, etc.	OK
6.3. Quality assurance procedures *What quality assurance procedures will be applied for such data?*	N/A	Quality, environment and industrial safety management systems at Koryazhma Branch comply with the international standards ISO 9001, ISO 14001 and OHSAS 18001.	
6.4. External data *Check the quality, reproducibility and uncertainty of external data.*	N/A	Not applicable. Refer to 6.1-6.3 above	
7. Management and Operational System *In order to ensure a successful operation of a Client project and the credibility and verifiability of the ERs achieved, the project must have a well-defined*			

Objective	Reference	Comments	Conclusion (CARs/FARs)
management and operational system.			
7.1. Documentation *The system should be documented by manuals and instructions for all procedures and routines with relevance to the quality of emission reductions. The accessibility of such documentations to persons working on the project has to be secured.*	/4, 15/	The company management and operational system for GHG emission monitoring and reporting is described in the 1st MR Sections C.1 and C.2. The procedures provide the scope of application, definition of primary data, requirements to and responsibilities for data collection, recording, storage, protection, transfer, consolidation, processing, reporting. The procedures were prepared by the personal concerned that is well informed and qualified for performing the monitoring and reporting tasks.	OK
7.2. Qualification and training *The system should describe the requirements on qualification and the need of training programs for all persons working on the emission reduction project. Performed training programs and certificates should be archived by the system.*	/4/	Please refer to 3.10 and 7.1 above.	OK
7.3. Allocation of responsibilities *The allocation of responsibilities should be documented in written*	/4/	Please refer to 3.11 and 7.1 above. Besides, the following request has to be considered. **FAR 01**. There is no evidence that specific tasks and responsibilities of the OJSC "Ilim Group" Branch in Koryazhma leading specialist who provide strict	FAR 01

Objective	Reference	Comments	Conclusion (CARs/FARs)
manner.		control over timely and complete collection of primary data are documented and communicated.	
7.4. Emergency procedures *The system should contain procedures, which provide emergency concepts in case of unexpected problems with data access and/or data quality.*	N/A	The emergency procedures with respect to operation controls and control of records are available in the documentation of the QHSE Management System.	OK
7.5. Data archiving *The system should provide routines for the archiving of all data, which is required for verifying the project's performance in the context of consecutive verifications.*	/4/	Requirements for data archiving are defined in the 1st MR. Data are archived in the physical and electronic forms and then stored electronically.	OK
7.6. Monitoring report *The system includes procedures for the calculation of emission reductions and the preparation of the monitoring report.*	/4/	Procedures for the calculation of emission reductions and the preparation of the monitoring report are defined in the 1st MR (see Annex 2).	OK
7.7. Internal audits and management review *The system includes internal control procedures, which allow the identification and solution of*	N/A	At "Ilim Group" Branch in Koryazhma, responsibility of the person for the internal control is set forth in Order No. FU/1381A of 03/02/2009 (see 1st MR Annex 5). At CCGS LLC, the procedure for verification of the monitoring reports are laid down in "The provisions for quality control procedure in relation to preparation	OK

Objective	Reference	Comments	Conclusion (CARs/FARs)
problems at an early stage.		of project design documents and monitoring reports for greenhouse gas emission reduction projects" (see 1st MR annex 6). 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.	

APPENDIX B: COMPANY PERIODIC VERIFICATION PROTOCOL

Table 1 Data management system/controls (01/01/2008 – 31/12/2009)

Expectations for GHG data management system/controls	Scores	Verifiers Comments (including *Forward Action Requests*)
A. Defined organisational structure, responsibilities and competencies		
A.1. Position and roles Position and role of each person in the GHG data management process is clearly defined and implemented, from raw data generation to submission of the final data. Accountability of senior management	Partial	Roles and responsibilities of relevant functions (for personnel of OJSC "Ilim Group" Branch in Koryazhma, OJSC "Ilim Group" Central office in Saint-Petersburg and CCGS LLC) in the GHG data management process are defined by the Orders No. FU/512-A dd.04/12/2007 and No. FU/1381 dd.13/12/2009 and described in the 1st Monitoring Report (1st MR) Tables C.2.2 and C.2.3 and Fig.C.2.1. The 1st Monitoring Report Version 1.0 (part 1dated 27/10/2009 for the monitoring period from 01/01/2008 to 31/12/2008 and part 2 dated 03/11/2009 for the monitoring period from 01/01/2009 to 31/08/2009) includes the responsibilities for distribution of primary

must also be demonstrated.		data collection and storage as it is shown in the Table C.2.3 and Table B.2.1-B.2.3. All works related to primary data collection and storage are carried out as a part of the Mill's routine activities and would have been carried out in any event, irrespective of the GHG emission reduction monitoring activities. The roles and responsibilities of top management are also described in the 1st MR, Table C.2.2. Also please refer to CAR 01.
A.2. Responsibilities Specific monitoring and reporting tasks and responsibilities are included in job descriptions or special instructions for employees.	Partial	General and specific monitoring and reporting tasks and responsibilities of relevant functions on OJSC "Ilim Group" Branch in Koryazhma level are specified by the 1st MR. Director of the Project Implementation Department of CCGS LLC is defined as person responsible for calculation of the emission reduction and issuing the 1st MR. Also he shall to arrange and hold a training sessions for the Mill's personnel regarding collection of the data required for the GHG emissions monitoring under the project. The management of "Ilim Group" Central Office in Saint-Petersburg provides the liaison between OJSC "Ilim Group" Branch in Koryazhma and CCGS LLC and strict control over timely and complete collection of primary data in OJSC "Ilim Group" Branch in Koryazhma.
A.3. Competencies needed Competencies needed for each aspect of the GHG determination process are analysed. Personnel competencies are assessed and training programme implemented as required.	Full	The competencies for each step of the GHG monitoring process have been checked. All personnel of the evaporation plant have undergone certification in accordance with the requirements of Rostekhnadzor. Furthermore, in connection with the commissioning of the evaporator plant, the personnel passed training within the framework of the contract with the equipment supplier, "ANDRITZ OY", in accordance with the personnel's job content. At least twice per year CCGS LLC together with the management of OJSC "Ilim Group" Branch in Koryazhma shall arrange and hold training sessions for the Mill's personnel regarding collection of data required for the GHG emissions monitoring under the project. The Director of Project Implementation Department of CCGS LLC shall draw up the monitoring report and support in GHG emission reduction verification.

B. Conformance with monitoring methodology		
B.1. Reporting procedures Reporting procedures should reflect the monitoring methodology content. Where deviations from the monitoring plan occur, the impact of this on the data is estimated and the reasons justified.	Partial	There were some intended deviations from the PDD monitoring plan due to lack of measuring instruments. The impacts of most of them are estimated from the standpoint of conservatism and justified. However, the following requests have to be considered with regard to the calculations by the established monitoring methodology. **CAR 02.** The second deviation ("The temperatures of condensates were assumed according to design characteristics") in the part 1 of the 1st MR and sixth deviation ("The baseline heat consumption for heating of water for process needs, which under the project is compensated by reuse of warm water and condensates from the new evaporator plant, were determined on a monthly basis (according to the monitoring plan – every hour)") in the part 2 of the 1st MR have not been justified. **CAR 03**. There are no references for factors $\chi = 0.6902$ used in the formula on page 34 and γ=0.25 used in the formula on page 35. **CAR 04**. 1st MR lacks data on monitoring of input ($\varphi_{CHP-2,RL,input,j,y}$, $\varphi_{BL,CPP,input,j,y}$) and output ($\varphi_{CHP-2,RL,output,j,y}$, $\varphi_{BL,CPP,output,j,y}$) dryness of RL and BL. **CAR 05.** In accordance with PDD, in the formula for $HC_{TC,BL,y}$ (1st MR page 32) the index "**I**" has to refer to hourly base calculations, not monthly. (Only for part 1 of the 1st MR).
B.2. Necessary Changes Necessary changes to the monitoring methodology are identified and changes are integrated in local procedures as necessary.	Partial	The monitoring methodology had been retained and re-described in the 1st MR without changes but raw data has been added in terms of weekly measurements of input and output values of red (RL) and black liquor (BL) dryness. These values of undetermined origin are contained in the calculation spreadsheets. **CAR 06**. Please check the conservatism of the used assumption about design values of

		the temperatures of condensates and the minimum values of the parameters $\alpha^{EWQ}_{RL,PJ,j,y}$ $\alpha^{EWQ}_{BL,CPP,PJ,j,y}$ and $\alpha^{EWQ}_{BL,SBPP,PJ,j,y}$ determined in the 1st MR on the weekly base for each month (1st MR pages 34-35) instead of every hour according to monitoring plan in the PDD. **FAR 02.** The monitoring methodology shall be amended taking into account the necessity to measure, collect and archive the data of red and black liquor's dryness and the above mentioned loss of effects from evaporation of red liquors at the new evaporator plant. Also please refer to CAR 02, CAR 04, FAR 01.
C. Application of GHG determination methods		
C.1. Methods used There are documented description of the methods used to determine GHG emissions and justification for the chosen methods. If applicable, procedures for capturing emissions from non-routine or exceptional events are in place and implemented.	Partial	The used monitoring methodology formalized in terms of the electronic tool was properly documented in 1st MR and closely followed. The tool was made available to the verifier at the determination stage, so it was easy to check the calculations reported in 1st MR. A response to CAR 04 may cause the necessity of making a minor amendment to the calculation procedure.
C.2. Information/process flow An information/process flow diagram, describing the entire process from raw data to reported totals is developed.	Full	1st MR contains the monitoring procedures (see Table C.2.1) and data transfer scheme (Fig.C.2.1), describing the entire process from raw data to reported totals.
C.3. Data transfer Where data is transferred between or within systems/spreadsheets, the method of transfer (automatic/manual)	Partial	Data transfer between or within different areas of responsibilities on the "Ilim Group" Branch in Koryazhma level is highlighted in the 1st MR. Manual transfer was occurred both in OJSC "Ilim Group" Central Office (responsible: Director for Environment and Industrial Safety) and CCGS LLC (responsible: Director of Project Implementation

is highlighted – automatic links/updates are implemented where possible. All assumptions and the references to original data sources are documented. Manual transfer has occurred.		Department). However, the request has to be considered as follows. **CAR 07.** Please describe the data transfer between "Ilim Group" Branch in Koryazhma and "Ilim Group" Central Office in Saint-Petersburg and CCGS as well as within CCGS, if any, and provide the objective evidence of documentation and communication the roles and responsibilities.
C.4. Data trails Requirements for documented data trails are defined and implemented and all documentation are physically available.	Partial	Requirements for documented data trials are implemented in general as defined in PDD Section D.3. All data dispatches can be traced by date, department, name of person. However, CAR 04, FAR 01, FAR 02 are to be considered.
D. Identification and maintenance of key process parameters		
D.1. Identification of key parameters The key physical process parameters that are critical for the determination of emission factors are identified.	Partial	The key physical parameters are identified except for those stated in CAR 03 and CAR 04.
D.2. Calibration/maintenance Appropriate calibration/maintenance requirements are determined.	Full	The calibration documents and electric energy measuring devices have been checked and found in conformity to calibration and verification requirements.
E. GHG calculations		
E.1. Use of estimates and default data Where estimates or default data are used, these are validated and periodically evaluated to ensure their	Partial	**CAR 08**. Please provide the evidence of validation of the 2008 & 2009 data for Mill's energy technological heat and power station (ETHPS Performance). Also please refer to CAR 03. **CAR 09.** There is no any explanation for deviation of the monitored GHG emission reductions from the ones calculated in the PDD.

ongoing appropriateness and accuracy, particularly following changes to circumstances, equipment etc. The validation and periodic evaluation of this is documented.		
E.2. Guidance on checks and reviews Guidance is provided on when, where and how checks and reviews are to be carried out, and what evidence needs to be documented. This includes spot checks by a second person not performing the calculations over manual data transfers, changes in assumptions and the overall reliability of the calculation processes.	Partial	CCGS specialist (director of the project implementation department) calculate GHG emission reductions using the provided data and draw up a monitoring report at the end of each reporting year. In case any doubt regarding the accuracy of the input data arises, those are checked and revised by the Director for Labour Protection, Fire Safety and Environment of OJSC "Ilim Group" Branch. It is stated in the 1st MR that the preliminary version of the monitoring report is submitted to the management of OJSC "Ilim Group" Branch in Koryazhma for review. **FAR 03**. No evidence is available as to internal spot checks and reviews of the calculation results by a second person as well as his/her responsibility is determined, documented and communicated.
E.3. Internal verification Internal verifications include the GHG data management systems to ensure consistent application of calculation methods.	Partial	**FAR 04.** No guidance or procedure is available as to the verification of the calculated GHG emission reductions.
E.4. Internal validation Data reported from internal departments should be validated visibly (by signature or electronically) by an employee who is able to assess the accuracy and completeness of the data. Supporting information on the data limitations, problems should also	Partial	Operational data on Mill's performance is logged daily by the operator into special electronic or paper forms. These forms are printed out, validated by foreman' signature and filed. The reported information is signed by persons appointed in accordance with 1st MR. Also please refer to CAR 08.

be included in the data trail.		
E.5. Data protection measures Data protection measures for databases/spreadsheets should be in place (access restrictions and editor rights).	Full	Electronic databases and calculation spreadsheets are protected by access restrictions and editor rights in the frame of the Environmental Management System (EMS) certified to ISO 14001.
E.6. IT systems IT systems used for GHG monitoring and reporting should be tested and documented.	Full	Data collection and results reporting are based on standard Microsoft Windows tools. The supporting IT systems are maintained on the basis OJSC "Ilim Group" procedures.

Table 2 GHG calculation procedures and management control testing / Detailed audit and random testing of residual risk areas

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvements (including Forward Action Requests)
The following potential risks were identified and divided and structured according to possible areas of occurrence.	*The following measures were implemented in order to minimize the corresponding risks.*	*Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of verification*	*Additional verification testing performed is described. Testing may include: sample cross checking of manual transfers of data; recalculation; spreadsheet 'walk throughs' to check links and equations; inspection of calibration and maintenance records*	*Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.*

			for key equipment; check sampling analysis results; discussions with process engineers who have detailed knowledge of process uncertainty and error bands.	
I Raw data generation				
• Installation of new monitoring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Replacement of equipment	• All installed measuring devices are to high level pulp and paper industry standard • All installed electric energy measuring devices are to high power industry standard • Overall responsibility is assigned to the metrologist function • Only skilled and trained personnel is allowed to operate the relevant equipment and take metering records • Regular visual inspections of equipment • Immediate replacement of dysfunctional	• Inadequate replacement of metering equipment • Change of personnel • Undetected measurement errors	• On-site assessment • Evaluation of changes occurred throughout the reporting year • Checking of personnel replacement • Plausibility checks • Inspection of calibration and maintenance records for key equipment • Inspection of metering records	All interviewed staff showed competence based on training and experience. Human mistakes in measurements are unlikely. No significant uncertainties or errors regarding the raw data generation were observed in the course of verification.

	equipment •Stand-by equipment is available •Maintenance of certified EMS •Accredited laboratory makes some important measurements •Internal checks of technological discipline			
II Raw data collection				
•Metering records •Process monitors •Operational logs •Calibration and maintenance data •Laboratory analysis •Manuals and other vendor data •Accounting records •Accuracy of data supplied	•Exclusively installation and operation of duly calibrated equipment •Proper maintenance of data and document control procedure •Implementation of data traceability checking •A responsibilities for the raw data collection are established in the MR •Proper validation of data by an appointed person (foreman) •Appropriate archiving system defined by the Quality Management	•Human mistakes in measurements •Unintended use of old data that has been revised •Incomplete records and documentation •Ex-post corrections of accounting records •Big amounts of information •Human mistakes in data processing •Manual data collection mistakes can only be minimized	•On-site interviews with the personnel in charge •Inspection of meters calibration and maintenance records •The seals and passports for the key monitoring equipment were inspected •On-site evaluation of the monitoring routines and practices •On-site review of records and documents •Cross-checking of accounting records •Plausibility checks to	All interviewed staff showed competence based on training and experience. Human mistakes in measurements seem unlikely. No significant uncertainties or errors regarding the raw data collection were observed in the course of verification.

	System •Implementation of certified EMS •Regular inspections from OJSC "Ilim Group".		verify the information from different sources Discussions with process engineers who have detailed knowledge of process uncertainty & error ranges	
III Data aggregation				
•APCS system •IT systems •Spread sheet programming •Manual data transmission •Data protection •Responsibilities •Problems caused by updating, upgrading or change of applied software	•Maintenance of APCS •Clear allocation of responsibilities •Training to MP procedures •Use of internally verified software model •Limited access to IT systems •Corporate procedures for protection and back up of electronic and paper data •Verification of data handling by the experienced technologist and power engineer	•Manual data transfer mistakes can only be minimized •Unintended change of spread sheet programming of data calculation or data base entries	•On-site discussions with the personnel in charge •Sample cross checking of the information of the data base and the meter reading log •All data which was used in the calculation sheets was explicitly checked for consistency and adequacy •The default data for reduction of heat output (by CHPP-1 boilers) was checked	All interviewed staff showed competence based on training and experience. Human mistakes in data aggregation seem unlikely. No significant uncertainties or errors regarding the data aggregation were observed in the course of verification.
IV Calculation parameters				
•Data sources	•All parameters and data to be used are defined	•Danger of overestimating of	•Danger of misestimating emissions reductions due	No significant uncertainties or errors

•Uncertainties	in the validated monitoring plan	baseline emissions due to fuel (natural gas) consumption •Danger of misestimating of emissions reductions due to instability and/or uncertainty of the reduction of electricity supply to the grid as a result of the project implementation •Danger of misestimating of the calculation CO_2 emission factor for grid electricity	to instability and/or uncertainty of the net calorific values of RL, BL and natural gas can only be minimized. •Conservative estimations of emission reductions in 2008&2009 are ensured •The requests are issued during verification to mitigate the risks. Refer to CAR 04, CAR 06, FAR 02 in Table 1.	regarding the calculation of parameters were observed in the course of verification.
V Calculation methods				
•Calculation approach •Applied formulae •Implemented IT Systems •Data storage •Consistency in following the monitoring plan •Control of electronic data	•Validated methodology and electronic tool for calculation of emission reduction •Use of standard software •Implementation of data traceability •Check of transfer of formulas and algorithms into excel •A detail review of each	•The use of the electronic calculation tool requires further assessment •Manual data transfer mistakes can only be minimized •The danger of miscalculation can only be minimized •Uncontrolled copies of spreadsheets can be	•Conservative estimations of emission reductions are ensured •Uncertainties due to unstable of the net calorific values of RL, BL and natural gas can only be minimized. •On-site discussions with the user of the electronic tool •On-site assessment of	No significant uncertainties or errors regarding the calculation methods were observed in the course of verification

	excel spreadsheet • Collation of spot manual calculations with excel results • Appropriate IT and archiving system • An experienced leading specialist is appointed for processing of operational data and calculation of emission reductions	mixed with the controlled ones	control of calculation spreadsheets • Off-site check of all equation and algorithms used in spreadsheets • Random-wise manual and electronic recalculations	
VI Monitoring reporting				
• Data transfer to/by the author of the monitoring report • Issuance of the monitoring report • Verification and validation of the monitoring report	• An experienced leading specialist is appointed for preparation of the 1st MR. • Monitoring reporting was prepared by specialist of CCGS LLC, verified by Chief of Technical Development Department of "Ilim Group" Branch in Koryazhma and validated by CCGS's Director of Project Implementation Department. • Use of predefined	• The danger of the manual data transfer can only be minimized	• Cross checking of the information of the monitoring report and the original data was made available at the project visit. • The requests are issued during verification to mitigate the risks. Refer to CAR 07, FAR 03 in the Table 1 of FPV.	No significant uncertainties or errors regarding the monitoring reporting were observed in the course of verification. Human mistakes in monitoring reporting seem unlikely.

	tables in the monitoring report so that interfaces are minimized • Report is checked for adequacy • Signs of control are in evidence			
VII Management system				
• Inadequacy of management system • Flaws of management system	• EMS documented procedures are in place including those for training, control of documentation, and monitoring • Personnel shows competence and commitments	• Lack of structured internal audits and reviews of JI project operation may lead to inadequate track of certain critical issues on project performance and GHG emission data	• OJSC "Ilim Group" established JI Working Group, which carries out periodic on-site assessment of the project operation. • Personal is skilled and committed	**FAR 05**: Records of the on-site assessment reports should be annexed to monitoring reports to assure project performance. No significant flaws regarding the management system were observed in the course of verification.

APPENDIX C: RESOLUTION OF CORRECTIVE AND FORWARD ACTION REQUESTS

Initial Verification Protocol (INV) and First Periodic Verification Protocols (FPV)

Table 1: Resolution of Corrective Action and Forward Action (01/01/2008 – 31/12/2009)

Corrective Action, Forward Action and clarification Requests by verifier	Ref. to checklist question in tables of INV and FPV	Summary of project owner response	Verification team conclusion
CAR 01. There is no objective evidence that roles and responsibilities of the "Ilim Group" functions concerning of the GHG data collection, recording and transmitting are documented and communicated.	INV 3.11	The roles and responsibilities of technicians and engineers of "Ilim Group"' Branch in Koryazhma related to GHG data collection, checkout, recording and transfer are recorded in Order No.FK/512-A of 04.12.2007.This Order is given in Annex 4 in the second version of the monitoring report. See also response to CAR 07.	Conclusion on Response This CAR is closed based on the adequate correction made to the 1st MR.
CAR 02. The second deviation ("The temperatures of condensates were assumed according to design characteristics") in the part 1 of the 1st MR and sixth deviation ("The baseline heat consumption for heating of water for process needs, which under the project is compensated by reuse of warm water and condensates from the new evaporator plant, were determined on a monthly basis (according to the monitoring plan – every hour)") in the part 2 of the 1st MR have not been justified.	FPV B.1	Temperatures of condensates were assumed at the level of project values due to lack of measuring instruments. In the second version of the monitoring report the condensate temperatures are assumed equal to the lowest value within a range of values that includes monthly average readings recorded by instruments in May – December 2009 and design data. This approach appears to be reasonably conservative. The monitoring plan given in the PDD	Conclusion on Response This CAR is closed based on the proper explanations and adequate correction made to the 1st MR.

		provides that heat savings from the use of condensate and warm water generated at the new "Andritz" evaporator plant are determined by readings of respective instruments (flow meters and temperature sensors). And such savings are to be metered on an hourly basis. However, all necessary instruments were put into operation stage by stage only in mid-2009. Therefore while the instruments were still missing, the monitoring of GHG emission reductions in 2008 and partially in 2009 had to use design, statistical and calculated monthly data on flows and temperatures of these heat carriers with strictly complying of the principle of conservatism. As the instruments were gradually put into operation, the calculations began to use monthly average (for temperature sensors) and monthly (for flow meters) readings. Heat savings from use of warm water and condensates will be monitored on an hourly basis, as it was planned in the PDD, starting in 2010.	
CAR 03. There are no references for factors $\chi = 0.6902$ used in the formula on page 34 and γ=0.25 used in the formula on page 35.	FPV B.1	The justification of factor $\chi = 0.6902$, which describes the mass fraction of treated condensate in the total quantity of evaporated water, is given in Annex 1 in the second version of the monitoring report. The factor γ=0.25, which corrects for the	<u>Conclusion on Response</u> This CAR is closed based on the proper explanations and adequate correction made to the 1st MR.

		fraction of treated condensate supplied to the production process, was assumed according the actual data for May 2009 (The flow meter was installed in early May 2009, in June it broke down and was recommissioned in August). In accordance with the instrument readings about 25% of treated condensate produced at the evaporator plant is used to cover the Mill's own demand. In the second version of the monitoring report monthly consumptions of treated condensate are assumed equal to the lowest value within a range of values that includes monthly average readings recorded by instruments in September – December 2009. This approach appears to be more justified and reasonably conservative.	
CAR 04. 1st MR lacks data on monitoring of input ($\varphi_{CHP-2,RL,input,j,y}$, $\varphi_{BL,CPP,input,j,y}$) and output ($\varphi_{CHP-2,RL,output,j,y}$, $\varphi_{BL,CPP,output,j,y}$) dryness of RL and BL.	FPV B.1	Primary data on input and output dryness of liquors signed by the person responsible for their collection, recording and transfer are given in Annex 3 of the second version of the monitoring report.	Conclusion on Response This CAR is closed based on the adequate correction made to the 1st MR.
CAR 05. In accordance with PDD in the formula for $HC_{TC,BL,y}$ (1st MR page 32) the index ***i*** has to refer to hourly base calculations, not monthly.	FPV B.1	The monitoring plan in the PDD assumes that the Automatic Process Control System every hour automatically calculates the heat of utilized condensate by the formula for $HC_{TC,BL,y}$ (1st MR page 32), using readings of the existing instruments. But all required	Conclusion on Response This CAR is closed based on the proper explanations and adequate correction made to the 1st MR.

		instruments were commissioned in full only in the end of 2009. Therefore monthly data had to be used. Heat savings from use of condensates will be monitored on an hourly basis, as it was planned in the PDD, starting in 2010. See also responses to CAR 02 and CAR 03.	
CAR 06. Please check the conservatism of the used assumption about design values of the temperatures of condensates and the minimum values of the parameters $\alpha^{EWQ}_{RL,PJ,j,y}$ $\alpha^{EWQ}_{BL,CPP,PJ,j,y}$ and $\alpha^{EWQ}_{BL,SBPP,PJ,j,y}$ determined in the MR on the weekly base for each month (MR pages 34-35) instead of every hour according to monitoring plan in the PDD.	FPV B.2	The conservatism of parameters $\alpha^{EWQ}_{RL,PJ,j,y}$ $\alpha^{EWQ}_{BL,CPP,PJ,j,y}$ and $\alpha^{EWQ}_{BL,SBPP,PJ,j,y}$, is demonstrated by the fact that they are calculated using monthly-minimum values of evaporated water quantity that are recorded every week. This, in its turn, gave minimum generated condensate quantity and therefore minimum GHG emission reduction effect due to condensate utilization. Regarding conservatism of condensate temperatures see response to CAR 02.	
CAR 07. Please describe the data transfer between "Ilim Group" Branch in Koryazhma and "Ilim Group" Central Office in Saint-Petersburg and CCGS as well as within CCGS, if any, and provide the objective evidence of documentation and communication the roles and responsibilities.	FPV C.3	The initial request for input data for GHG emission reduction monitoring is sent by the Director of the Project Implementation Department of CCGS LLC to "Ilim Group" Central Office in Saint-Petersburg, to the Director for labour protection, fire safety and environment, who in his turn issues instructions to collect data at a given enterprise. At each enterprise where JI projects are implemented there are persons	<u>Conclusion on Response</u> This CAR is closed based on the proper additions made to the 1st MR.

		(working group) responsible for collection, checkout, recording and transfer of GHG monitoring data. The responsibilities of these persons are recorded in respective orders. For "Ilim Group" Branch in Koryazhma the responsibility of such persons are recorded in Order No.FK/512-A of 04.12.2007 (The document is enclosed in Annex 4 of the second version of the monitoring report). The information collected at the enterprise is transferred to the Central Office to the Director for labour protection, fire safety and environment, who, in his turn, transfers it to the Director of the Project Implementation Department of CCGS LLC. All information is transferred by e-mail. The Project Implementation Department of CCGS LLC on the basis of the data received prepares a GHG emission reduction monitoring report and submits it for additional cross-check to the Project Development Department of CCGS LLC. After resolution of all comments made by the Project Development Department, the monitoring report is submitted for checkout to the enterprise where the project is implemented. The procedure for checkout of monitoring reports within CCGS LLC is laid down in "The provisions for quality control procedure	

		in relation to preparation of project design documents and monitoring reports for greenhouse gas emission reduction projects at CCGS LLC" The document is enclosed in Annex 6 of the second version of the monitoring report. At "Ilim Group" Branch in Koryazhma the responsibility for checkout of GHG emission reduction calculations is assigned by the Order No. FK/1381 of 03.12.2009. The document is enclosed in Annex 5 of the second version of the monitoring report. After checkouts and required corrections, the Director of the Project Implementation Department of CCGS LLC informs the Director for labour protection, fire safety and environment of "Ilim Group" Central Office in Saint-Petersburg about the preliminary monitoring results, and if there are no objections on his part, the Director General of CCGS LLC takes the final decision to submit the monitoring report to the independent auditor for verification.	
CAR 08. Please provide the evidence of validation of the year 2008 data for Mill's energy technological heat and power station (ETHPS Performance).	FPV E.1	The "ETHPS Performance" reporting forms are filled in and signed by the person responsible for collection, checkout and transfer of primary monitoring data. The role and responsibility of this person is recorded in Order No.FK/512-A of 04.12.2007. This document is enclosed in Annex 5 of the second version of the monitoring report.	Conclusion on Response This CAR is closed based on the proper addition made to the 1st MR.

CAR 09. There is no any explanation for deviation of the monitored GHG emission reductions from the ones calculated in the PDD.	FVP E.1	The reasons why GHG reductions are lower than those projected in the PDD are the following: - In the PDD it is assumed that all treated condensate produced at the new "Andritz" evaporator plant is entirely used for the production needs and in actual fact only part is utilized; - actual warm water turned out to be lower than the projected level.	Conclusion on Response This CAR is closed based on the proper explanations and adequate correction made to the 1st MR.
FAR 01. There is no evidence that specific tasks and responsibilities of the OJSC "Ilim Group" Branch in Koryazhma leading specialist who provide strict control over timely and complete collection of primary data are documented and communicated.	INV A.2	The tasks and responsibilities of the leading specialists at "Ilim Group" Branch in Koryazhma related to collection, checkout and transfer of monitoring data are recorded in Order No.FK/512-A of 04.12.2007. The order is enclosed in Annex 4 of the second version of the monitoring report.	Conclusion on Response This FAR is closed based on the proper addition made to the 1st MR.
FAR 02. The monitoring methodology shall be amended taking into account the necessity to measure, collect and archive the data of red and black liquor's dryness.	FPV C.3	The procedure for measurement, collection and archival of liquor dryness data are given in the second version of the monitoring report.	Conclusion on Response This FAR is closed based on the proper addition made to the 1st MR.
FAR 03. No evidence is available as to internal spot checks and reviews of the calculation results by a second person.	FPV E.2	Internal checkout of primary data and obtained results at "Ilim Group" Branch in Koryazhma was carried out by the Head of the ETHPS Evaporation Department, M.M.Vorontzov. The authorities of the Head of the ETHPS Evaporation Department, M.M.Vorontzov, related to checkout of GHG emission	Conclusion on Response This FAR is closed based on the proper addition made to the 1st MR.

		reductions calculation are officially confirmed by Order No.FK/1381 of 03.12.2009. This order is enclosed in Annex 5 of the second version of the monitoring report.	
FAR 04. No guidance or procedure is available as to the verification of the calculated GHG emission reductions.	FPV E.3	The monitoring report is checked out by the Director of the Project Implementation Department of CCGS LLC or, on his instructions, by other specialist of this Department who is not directly related to preparation of this report. Additional cross-check is carried out by the Director of the Project Development Department of CCGS LLC or, on his instructions, by other specialist of this Department. The Quality Control Procedure is laid down in detail in "The provisions for quality control procedure in relation to preparation of project design documents and monitoring reports for greenhouse gas emission reduction projects at CCGS LLC". The document is enclosed in Annex 6 of the second version of the monitoring report.	Conclusion on Response This FAR is closed based on the proper addition made to the 1st MR.
FAR 05: Records of the on-site assessment reports should be annexed to monitoring reports to assure project performance.	FPV Table 2, VII	This will be taken into account in the next monitoring reports.	It is accepted. FAR is pending.

APPENDIX D: VERIFICATION TEAM's CV

George Klenov, Professor, Doctor of Science (engineer electromechanic, phisicist)
Lead Verifier
Bureau Veritas Certification Rus - Lead Auditor, Lead Tutor, Lead 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 and was/is involved in the determination of over 10 JI projects.

Leonid Yaskin, PhD (thermal engineering)
Internal Technical Reviewer
Bureau Veritas Certification Rus General Director, Climate Change Local Manager, Lead Auditor, IRCA Lead Tutor, Lead 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 Krzhizhanovsky 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 has 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 Joint Implementation and was/is involved in the determination of over 50 JI projects.