



BUREAU
VERITAS

DETERMINATION REPORT

ECF PROJECT LTD.

DETERMINATION OF THE
“TECHNICAL RE-EQUIPMENT OF CHELYABINSK
CHPP-3 WITH PUTTING INTO OPERATION OF A
COMBINED-CYCLE GAS PLANT”

REPORT No. RUSSIA/0061-2/2010, v.2

Bureau Veritas Certification
Holding SAS



BUREAU
VERITAS

CERTIFICATION

Reviewed

Александр

Init

BUREAU VERITAS CERTIFICATION

Date: 25/11/2010

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

Date of first issue: 22/11/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: ECF Project Ltd.	Client ref.: Mr. Gleb Anikin

Summary:

Bureau Veritas Certification was commissioned by ECF Project Ltd. to make the determination of the project "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant" on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI guidelines and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria. The owner of the project is Open Joint-Stock Company "Fortum" (OJSC "Fortum"). ECF Project Ltd. being PDD developer coordinated the project and the determination process on behalf of the project owner.

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

The first output of the determination process is a list of Corrective Actions Requests (CAR), presented in Appendix A, Table 5. Taking into account this output, the project proponent has revised its project design document.

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

Report No.: RUSSIA/0061-2/2010	Subject Group: JI	
Project title: "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"		
Work carried out by: Leonid Yaskin – Lead Verifier		
Work verified by: Ivan Sokolov - Internal Technical Reviewer		
Work approved by: Flavio Gomes – Operational Manager		
Date of this revision: 25/11/2010	Rev. No.: 2	Number of pages: 74

No distribution without permission from the Client or responsible organizational unit

Limited distribution

Unrestricted distribution

Determination Report on JI project
 "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

Abbreviations

AIE	Accredited Independent Entity
BLS	Baseline Study
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CCGP	Combined-Cycle Gas Plant
CHPP	Combined Heat and Power Plant
CO ₂	Carbon Dioxide
DDR	Draft Determination Report
DR	Document Review
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
GHG	Greenhouse House Gas(es)
I	Interview
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
IRCA	International Register of Certified Auditors
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MoV	Means of Verification
JSC	Joint Stock Company
MP	Monitoring Plan
NCSF	National Carbon Sequestration Foundation
OJSC	Open Joint Stock Company
NPV	Net Present Value
PCF	Prototype Carbon Fund (World Bank Carbon Finance Unit)
PDD	Project Design Document
PP	Project Participant
RF	Russian Federation
tCO _{2e}	Tonnes CO ₂ equivalent
UNFCCC	United Nations Framework Convention for Climate Change
URES	Unified Regional Electricity System

Determination Report on JI project
 "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

Table of Contents		Page
1	INTRODUCTION	5
1.1	Objective	5
1.2	Scope	5
1.3	GHG Project Description (quoted by PDD Section A.2)	5
1.4	Determination team	7
2	METHODOLOGY	8
2.1	Review of Documents	10
2.2	Follow-up Interviews	10
2.3	Resolution of Clarification and Corrective Action Requests	11
3	DETERMINATION FINDINGS.....	12
3.1	Project Design	12
3.2	Baseline and Additionality	14
3.3	Monitoring Plan	15
3.4	Calculation of GHG Emissions	16
3.5	Environmental Impacts	16
3.6	Comments by Local Stakeholders	17
4	COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS	17
5	DETERMINATION OPINION	17
6	REFERENCES	19
	Appendix A: Determination Protocol	20
	Appendix B: Determination Team's CV's	74

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

1 INTRODUCTION

ECF Project Ltd. has commissioned Bureau Veritas Certification to determine its JI project "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant", (hereafter called "the project") located in the eastern part of Chelyabinsk city, Chelyabinsk Region, Russian Federation. ECF Project Ltd. being PDD developer coordinated the project and the determination process on behalf of the project owner.

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

1.1 Objective

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

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

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document (PDD), the project's baseline study (BLS) and monitoring plan (MP) and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements for Joint Implementation (JI) projects, JI guidelines, in particular the verification procedure under the JI Supervisory Committee, JISC Guidance on criteria for baseline setting and monitoring, Guidelines for users of JI PDD Form, and associated interpretations. Bureau Veritas Certification has, based on the recommendations in the Validation and Verification Manual (IETA/PCF), employed a risk based approach in the determination process, focusing on the identification of significant risks for project implementation and generation of ERUs.

The determination is not meant to provide any consulting towards ECF Project Ltd. and OJSC "Fortum". However, stated requests for corrective actions may have provided input for improvement of the project design.

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

Purpose of the Project:

The purpose of the project is indicated as putting into operation of a combined-cycle gas plant unit at Chelyabinsk CHPP-3 site. Implementation of the project allows to reduce the

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

energy deficit in URES "Ural" and provide Chelyabinsk city with stable electricity and heat supply.

The new CCGP unit with power 220 MW includes following main equipment:

- Gas turbine GTE-160 produced by the company JSC «Silovie mashiny», «LMZ»;
- Steam turbine T-50/70-6.8/0.12, JSC «KTZ» Kaluga;
- Steam boiler P-134 of JSC «Engineering Company ZIOMAR».

Project Company:

OJSC "Fortum" is the Russian branch of the Finnish energy concern Fortum. The Company received the name in April 2009 as a result of the official renaming of the TGC-10".

OJSC "Fortum" is one of the leading manufacturers and suppliers of thermal and electrical energy in the Urals and Western Siberia. The total installed capacity of branches and affiliates of the company in electricity is around 2,800 MW and in thermal energy - 13 600 Gcal / h. Annual production of the company is 16 billion kWh of electricity and 22 million Gcal of thermal energy. As a result of large investment program, electricity will increase up to 2,300 MW.

Power plants of OJSC "Fortum" are located in the Urals and Western Siberia. The structure of the company currently consists of eight power plants. Five of them - in the Chelyabinsk region, three - in Tyumen. Electricity is supplied to the wholesale market. Thermal energy is realized on the local heat markets in cities where OJSC "Fortum" and its subsidiary - Ural Heat Distribution Company ", specializing in heat supply of various consumer groups.

The mission of the corporation Fortum according to its web site is «Our energy improves life for present and future generations».

Situation existing prior to the starting date of the project:

Prior to the project implementation Chelyabinsk CHPP-3 included following equipment: 2 unit PSU and 3 peak hot-water boiler. 100% of the fuel balance of the plant was natural gas. Installed power: Electric power of the plant - 360 MW, thermal power of the plant - 1092 Gcal/h

Natural gas is the main and back-up fuel for the existent power boilers, blocks of the combined cycle plants st. №1, 2 and water boilers.

Implementation of the project does not influence old equipment.

Baseline Scenario:

The baseline scenario is formulated as follows – If the project is not implemented (i.e. additional electricity will not be supplied to the grid) third parties which provide electricity to URES "Ural" and URES "Mid Volga" will cover the energy demand. The design amount of heat will be supplied by existing or new heat supply sources determined on the basis of investment programs of heat supply companies of city Chelyabinsk.

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

Project Scenario:

The project scenario includes construction of a new second generating unit at Chelyabinsk CHPP-3. The new unit has 220 MW electric and 146 Gcal/h heat capacity. The annual production will amount around 1711 ths. MWh and 625 ths. Gcal.

Natural gas is the main and back-up fuel. The annual fuel consumption is around 464.3 ths. tonnes of fuel equivalent.

The electricity generated by the project will be provided to the grid.

History of the Project:

"UES of Russia" (Unified Energy System of the Russian Federation) RJSC has started to get prepared for implementing the mechanisms of Kyoto Protocol long before its ratification in Russia. "UES of Russia" RJSC has made every effort to cooperate with the UNFCCC (United Nations Framework Convention on Climate Change). For those purposes, the Energy Carbon Fund was established in 2001.

In 2007, the Energy Carbon Fund estimated whether it is possible to implement the project "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant".

On 24th August 2006 the Investment Commission of RAO "UES of Russia" approved the plan-timetable of realizing the investment project on construction of CCGT at Chelyabinsk CHPP-3

On March 12, 2008 the Shareholders Agreement to realize the investment program was signed between RAO "UES of Russia", OAO "SO UES" and Fortum Russia BV.

On March 20, 2008 the CJSC "Intertekhelektro" was chosen as the general subcontractor of constructing the power unit CCGT-220 at Chelyabinsk CHPP-3 .

On September 25, 2008 Fortum, the Russian Territorial Generating Company No. 10 (TGC-10) and ECF Project Ltd. (subsidiary of Energy Carbon Fund) had signed an agreement according to which Fortum would purchase approximately 1.5 million tones of emission reduction units (ERU) from TGC-10.

The purchase agreement is based on the Memorandum of Understanding between Fortum and United Energy Systems of Russia (RAO UES) in 2006, and it is the biggest of its kind ever made in Russia.

1.4 Determination team

The determination team consists of the following personnel:

Leonid Yaskin

Bureau Veritas Certification – Team Leader, Lead Verifier

Ivan Sokolov

Bureau Veritas Certification – Internal Technical Reviewer

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

2 METHODOLOGY

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

The determination consisted of the following three phases:

- i) desk review of the project design document and the baseline and monitoring plan;
- ii) site visit and interviews with project owner and PDD developer on 08/07/2010;
- iii) resolution of outstanding issues with ECF Project Ltd. (ref. to Appendix A Table 5 with CAR's and CL's) and the issuance of the determination report and opinion.

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

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

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

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

The completed determination protocol is enclosed in Appendix A to this report. It consists of four tables. Table 3 for "Baseline and Monitoring Methodologies" is omitted because the project participants established JI specific approach that is in accordance with appendix B of the JI Guidelines and because the questions regarding the used approach are presented in Table 2. Additionally Table 6 "List of inadequacies" was added to describe minor inadequacies which do not influence understanding of the project, formulae and calculations.

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

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

Determination Protocol Table 2: Requirements checklist

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

Determination Protocol Table 3: Baseline and Monitoring Methodologies

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

Determination Protocol Table 4: Legal requirements

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

Determination Report on JI project

“Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant”

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

Figure 1 Determination protocol tables

2.1 Review of Documents

ECF Project Ltd. provided Bureau Veritas Certification (BVC) on 22/04/2010 the Project Design Document (PDD) Version 01 dated 06/07/2009 together with supporting documentation including calculation of GHG emission and investment analysis.

The completeness check made by BVC revealed some deviations of the PDD from the JISC format. Therefore, ECF Project Ltd. was requested to remake the PDD in conformity to JI PDD Form. BVC received the finally remade PDD Version 02 dated 21/04/2010. This version of PDD was made publicly available for public comments on Bureau Veritas Certification RUS website from 22 April 2010 till 21 May 2010.

PDD Version 02 and supporting documentation as well as additional background documents related to the project design, baseline, and monitoring plan, such as Kyoto Protocol, host Country laws and regulations, JI guidelines, JISC Guidance on criteria for baseline setting and monitoring, and Guidelines for users of the JI PDD Form were reviewed.

The final deliverable of the document review was the Draft Determination Report (DDR) Version 2 dated 19/11/2010 with 35 CAR's and 3 CL's.

PDD developer ECF Project Ltd. issued iteratively five batches of responses to BVC requests which were eventually embedded in the amended PDD Version 6 dated 18/11/2010. This PDD together with the Determination Report rev.1 was provided to ITR for review. ITR issued requests for correction of PDD which were responded in the amended PDD Version 07 dated 25/11/2010.

The determination findings presented in this Determination Report Version 1 and Appendix A relate to the project as described in the PDD Version 01 (initial) and Version 06 (final).

2.2 Follow-up Interviews

Bureau Veritas Certification Lead Verifier Grigory Berdin conducted a site visit to the project site on 08/07/2010. On-site interviews with the project participant and ECF Project Ltd.

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

were conducted to confirm the selected information and to resolve issues identified in the document review. The interview topics are listed in Table 7. The interviewed persons are listed in Section 6 References.

Table 7 Interview topics

Date/ Site/ Inter-viewed organization	Interview topics
08/07/2010 OJSC "Fortum" production office, Chelyabinsk city, Chelyabinsk CHPP-3 site <u>Sites:</u> OJSC "Fortum" production office, Chelyabinsk city, Chelyabinsk CHPP-3 site <u>Organisations:</u> OJSC "Fortum" ECF Project Ltd.	<ol style="list-style-type: none"> 1. History of the project. 2. Starting date of the project (the date on which the implementation or construction or real action of the project has begun). 3. Substantiation of the operational lifetime of the project. 4. Substantiation that the project could not occur as the baseline scenario. 5. Distinctions of the project activity from similar activities. 6. Technical design document. 7. Verification of specific fuels consumption coefficients for project and baseline scenario; 8. IRR and NPV of the project as per the feasibility study and technical design in comparison with investment analysis in PDD. Capital costs and breakdown of operational costs of the project. 9. Operational and management structure. Responsibilities, roles, authorities (for verification stage). 10. Expertise of Environmental Impact Assessment Documentation. 11. Permits for air emissions at the construction and exploitation phases. 12. Public hearings, if any. 13. Training programme for the staff. 14. Pending issues.

2.3 Resolution of Clarification and Corrective Action Requests

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

Corrective Actions Requests (CAR) are issued, where:

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

Clarification Requests (CL) are issued where:

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

Determination Report on JI project
"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

DDR Version 2 summarising Bureau Veritas Certification's findings of the desk document review reported 35 CAR's and 3 CL's. The amendments made by ECF Project Ltd. to the PDD and summarised in PDD Version 06 dated 18/11/2010 satisfactorily addressed the verifier's requests. As a result, the Determination Report Version 1 was issued on 22/11/2010 and sent, together with the final PDD Version 06 to BVC Internal Technical Reviewer (ITR) for review.

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

3 DETERMINATION FINDINGS

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

- i) the findings from the desk review of the original project design document and the findings from interviews during the conference call are summarized. A more detailed record of these findings can be found in the Appendix A Determination Protocol.
- ii) where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the determination protocol criteria or the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The Clarification and Corrective Action Requests are stated in the in Appendix A Determination Protocol.
- iii) where Clarification and Corrective Action Requests have been issued, the response by the project participants to resolve these requests is summarized in Appendix A Table 5.
- iv) the conclusions of the determination are presented consecutively.

3.1 Project Design

The purpose of the project is putting into operation of a 220 MW combined-cycle gas plant unit at Chelyabinsk CHPP-3 site to increase the reliability and quality of the heat and electricity supply of the residential and industrial sectors of Chelyabinsk using modern technology.

The power generating unit of the combined cycle plant 220 MW as a part of Chelyabinsk CHPP-3 is done by the gas rejection scheme of the gas-turbine unit to the power boiler and intended for production of electric and heat power. Combination of steam-turbine and gas-turbine units, united by the common technological cycle, allows for the reduction of heat loss and exhaust gases of gas-turbine units, use of turbine gases as a heated oxidizing substance while burning the fuel in the steam boiler, obtaining additional heat and electric power by means of partial replacement of regeneration of the steam turbine plants which will result in increasing the efficiency output of the power plant.

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

The new unit has 220 MW electric and 146 Gcal/h heat capacity. The annual production will amount around 1711.5 ths. MWh and 625 ths. Gcal.

Natural gas is the main and back-up fuel. The annual fuel consumption is around 646 ths. tonnes of fuel equivalent.

The new unit will provide electricity to the grid. Implementation of the project allows to reduce the energy deficit in URES "Ural" and provide Chelyabinsk city with stable electricity and heat supply.

The new CCGP unit with power 220 MW includes following main equipment:

- Gas turbine GTE-160, Produced by JSC «Silovie mashiny» «LMZ». The gas turbine unit of high capacity with single shaft, cold drive and annular combustion chamber runs on gas fuel;
- Steam boiler P-134, produced by Produced by JSC «Engineering Company ZIOMAR». Power generating steam boiler is intended for operation as a part of combined cycle plant with gas turbine GTE-160 produced by JSC «Silovie mashiny» «LMZ». The boiler with natural circulation, single-drum, gas-proof for operating under pressurization;
- Steam-turbine T-50/70-6.8/0.12, produced by JSC Produced by JSC «KTZ» Kaluga. Steam-turbine district heating plant T-50/70-6.8/0.12 is intended for operation as a part of steam gas power generating unit CCGT-220. The turbine represents tandem twin-cylinder unit consisted of single-flow cylinder with high pressure and double-flow cylinder with low pressure.

The project is the greenfield state-of-the-art facility which positively influences the environment.

Reduction of GHG emissions will occur due to substitution of the electrical energy produced by the existing thermal power plants of the region and neighboring energy systems, where the emissions level per one unit of generated electrical energy is higher, as compared to the electrical energy generated by the new unit of Chelyabinsk CHPP-3.

Construction of the new power unit started in January 2008 and it is planned for commissioning on December 2010. The project technology is unlikely to be substituted by other or more efficient technologies within the project period.

The project is expected to provide the reduction of GHG emissions by 763,795 tCO₂e over the crediting period 2011-2012.

The identified areas of concern as to Project Design, PP's response and BV Certification's conclusion are described in Appendix A Table 5 (refer to CAR 01 – CAR 05 and CL 01).

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

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

The identified areas of concern as to Project Duration / Crediting Period, PP's response and BV Certification's conclusion are described in Appendix A Table 5 (refer to CAR 16 – CAR 18).

3.2 Baseline and Additionality

A JI specific approach regarding baseline setting and additionality demonstration and assessment has been developed in accordance with JISC Guidance on criteria for baseline setting and monitoring (Version 02). In accordance with paragraph 24 of this Guidance, the baseline is identified by listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one.

Four alternative scenarios were considered for the project activity:

- Alternative 1: The proposed project not developed as a JI project;
- Alternative 2: The electricity to be generated by project is provided by the other existing plants of URES "Ural" and URES "Mid Volga" . The heat to be generated by project is provided by newly constructed boilers and by increasing the load on the existing boiler equipment heating network of the city of Chelyabinsk as well as by existing heat equipment of Chelyabinsk CHPP-1, Chelyabinsk CHPP-2, Chelyabinsk CHPP-3 and Chelyabinsk CHPP;
- Alternative 3: The electricity to be generated by project is provided by the other new energy units of URES "Ural" and URES "Mid Volga". The heat to be generated by project is provided by newly constructed boilers and by increasing the load on the existing boiler equipment heating network of the city of Chelyabinsk as well as by existing heat equipment of Chelyabinsk CHPP-1, Chelyabinsk CHPP-2, Chelyabinsk CHPP-3 and Chelyabinsk CHPP;
- Alternative 4: The electricity to be generated by project is provided by the other existing plants and the other new energy units of URES "Ural" and URES "Mid Volga". The heat to be generated by project is provided by newly constructed boilers and by increasing the load on the existing boiler equipment heating network of the city of Chelyabinsk as well as by existing heat equipment of Chelyabinsk CHPP-1, Chelyabinsk CHPP-2, Chelyabinsk CHPP-3 and Chelyabinsk CHPP.

After the assessment and screening of the Alternatives, only Alternative 4 was left as reasonable and feasible As a result, Alternative 4 it was selected as the plausible scenario thus representing the baseline.

Technological data and parameters that define the baseline were determined during the site visit.

The "Tool for the demonstration and assessment of additionality" (version 05.2) approved by the CDM Executive Board was used in order to prove the project additionality. Upon the proof of the additionality, the following series of steps is stipulated by the tool:

1. Identification of alternatives to the project activity consistent with current laws and regulations;

Determination Report on JI project

“Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant”

2. Investment analysis (including the sensitivity analysis);
3. Barrier analysis;
4. Common practice analysis.

To assess the project's additionality the steps one, two and four were implemented accordingly. Step 3 – barrier analysis is omitted, according to the tool it is not mandatory if the step 2 is implemented.

In Section B.2, it is demonstrated that the project without JI registration is not a plausible baseline scenario since it does not meet the benchmark for profitability. A supporting spreadsheet containing all assumptions and calculations was made available to the verifier.

Common practice analysis demonstrates that at the time of decision-making Combined-Cycle Gas Plant technologies were not widespread throughout Russian Federation.

The identified areas of concern as to Baseline and Additionality, PP's responses and BV Certification's conclusions are described in Appendix A Table 5 (refer to CAR 06 – CAR 15, CAR 31-33 and CL 02).

3.3 Monitoring Plan

A JI specific approach regarding monitoring has been developed in accordance with the JISC Guidance on criteria for baseline setting and monitoring (Version 02).

Option 1 – “Monitoring of the emissions in the project scenario and the baseline scenario” was chosen. All categories of data to be collected in order to monitor GHG emission reductions from the project are described in required details.

All categories of data to be collected in order to monitor GHG emissions from the project and determine the baseline GHG emissions are described in required details. The parameters which are monitored throughout the crediting period include natural gas consumption, electricity output, heat output and net caloric value of natural gas. The baseline grid emission factor is calculated and fixed ex ante (Annex 2). Natural gas emission factor is taken from 2006 IPCC v.2 ch.1. Formulae for estimation of GHG emissions and calculation of grid emission factor are clearly described.

The monitoring approach explicitly and clearly distinguishes:

- a) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination regarding the PDD; and
- b) Data and parameters that are monitored throughout the crediting period.

All categories of data to be collected in order to monitor GHG emission reductions from the project are described in required details.

Determination Report on JI project
"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

Leakages were excluded for the purposes of simplification and conservatism. It is proven in PDD that under the baseline scenario leakages are higher in comparison with the project scenario thus their exclusion is conservative.

Operational and management structure that OJSC "Fortum" implements to monitor emission reduction is clearly described in the PDD. Monitoring related quality control and quality assurance procedures are outlined subject to checking at the verification phase.

The identified areas of concern as to Monitoring Plan, PP's responses and BV Certification's conclusions are described in Appendix A Table 5 (refer to CAR 19-25, CAR 34 and CAR 35).

3.4 Calculation of GHG Emissions

Formulae used for calculation of GHG emissions are presented in PDD Section B, Section D and in Annex 2. Input data for calculations and the calculations are presented in the comprehensive excel spreadsheet, which was made available to the verifier. The final calculations are observed as accurate. The results are summarized in Section E.

The calculated amount of project emission reduction over the crediting period 2011 - 2012 is 763,795 tCO₂e. The annual average emission reduction is 381,898 tCO₂e.

The identified areas of concern as to calculation of GHG emissions, PP's responses and BV Certification's conclusions are described in Appendix A Table 5 (refer to CAR 26-28 and CL 03).

3.5 Environmental Impacts

Verifiers studied environmental impacts assessment during the site visit. It was observed that OJSC "Fortum" had granted positive conclusions from the regional office of Glavgo-sexpertiza. OJSC "Fortum" also granted permissions on emission of pollutants into the atmosphere.

The project related environmental documents are in compliance with the state environmental and sanitary-epidemiological standards. The State Ecological Examination of the project did not identify any non-compliance issues with regards to the Russian Federation legislation and normative documents relating to the environmental protection. The project complies with all environmental laws, and emissions are well within legal limits.

The identified areas of concern as to Environmental Impacts, PP's response and BV Certification's conclusion is described in Appendix A Table 5 (refer to CAR 29).



Determination Report on JI project
"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

3.6 Comments by Local Stakeholders

No comments of concern were received from local stakeholders.

The identified areas of concern as to Comments by Local Stakeholders, PP's response and BV Certification's conclusion is described in Appendix A Table 5 (refer to CAR 30).

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

PDD Version 02 dated 21/04/2010 was made publicly available for public comments on Bureau Veritas Certification RUS website from 22 April 2010 till 21 May 2010. No comments have been received.

5 DETERMINATION OPINION

Bureau Veritas Certification has been engaged by ECF Project Ltd. to perform a determination of the JI project "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant" owned by OJSC "Fortum". The determination was performed on the basis of UNFCCC criteria for JI projects, in particular the verification procedures under the JI Supervisory Committee, as well as host country criteria and the criteria given to provide for consistent project operations, monitoring and reporting.

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

The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) project site visit and follow-up interviews with the project participant and PDD developer; iii) the issuance of the determination report and opinion.

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

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



Determination Report on JI project

“Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant”

The determination revealed two pending issues related to the current determination stage of the project: the issue of the written approval of the project and the authorization of the project participant by the host Party (Russian Federation). If the written approval and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 06 dated 18 November 2010 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

Bureau Veritas Certification thus recommends this project for the formal approval by the RF Ministry for Economic Development as the JI project in accordance with the RF Government Decree # 843 dated 28/10/2009 and the Order of the RF Ministry for Economic Development # 485 dated 23/11/2009.

Bureau Veritas Certification Holding SAS
25 November 2010



Леонид Яшкин - Ведущий верификатор

Флавио Гомес – Операционный Менеджер



Determination Report on JI project
 "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

6 REFERENCES

Reviewed document or type of Information available before the site visit

1.	PDD "Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant" Version 2, dated 21 April 2010.
2.	Guidelines for Users of the Joint Implementation Project Design Document Form. Version 04, JISC.
3.	JI Guidelines. Annex to decision 9/CMP.1.
4.	JISC Guidance on criteria for baseline setting and monitoring. Version 02.
5.	Methodological Tool "Combined tool to identify the baseline scenario and demonstrate additionality". Version 02.2
6.	Methodological Tool "Tool to calculate the emission factor for an electricity system", Version 02
7.	Excel spreadsheet with emission reductions calculating and investment analysis.
8.	2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 2, Energy (http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.htm).
9.	General scheme for allocation of power objects up to 2020, approved by the RF government order # 215-p dated 22/02/2008.

Reviewed document or type of Information obtained at the site visit

1.	Project Design of Chelyabinsk CHPP-3 reconstruction
2.	Permission on construction
3.	Positive conclusion by Glavgosexpertiza
4.	Permission on pollutant emissions into the atmosphere
5.	Positive sanitary and epidemiological inspection report
6.	Project of maximum allowable emissions into the atmosphere
7.	Permissions on emissions and their limits
8.	Implementation schedule
9.	Protocol of investment decision making
10.	Passports for the gas and steam turbines and for the boiler
11.	Contracts on equipment purchasing for the gas and steam turbines and for the boiler
12.	Measurement devices passports

Determination Report on JI project

"Technical re-equipment of Chelyabinsk CHPP-3 with putting into operation of a combined-cycle gas plant"

Persons interviewed:

1.	Tkachenko Evgenia – OJSC "Fortum", JI Manager
2.	Kuznetzova Olga - OJSC "Fortum", Chief engineer, industrial safety and ecology, local JI Manager
3.	Skornyakov Rafail Chelyabinsk CHPP-3 Chief of capital building department
4.	Putivceva Elena – Chelyabinsk CHPP-3 Leading ecology engineer
5.	Alexey Sorokin – ECF Project Ltd., JI consultant