DETERMINATION REPORT

ECF PROJECT LTD.

DETERMINATION OF THE
"Reconstruction of the Nevsky branch Hydro Power Plants"

BUREAU VERITAS CERTIFICATION

REPORT NO. RUSSIA/0047-2/2010, V.1

Determination Report on JI project
"Reconstruction of the Nevsky branch Hydro Power Plants"

Date of first issue:	Organizational unit:
29/06/2010	Bureau Veritas Certification Holding SAS
Client:	Client ref.:
ECF Project Ltd.	Mr. Gleb Anikin

Summary:

Bureau Veritas Certification was commissioned by ECF Project Ltd. to make the determination of the project "Reconstruction of the Nevsky branch Hydro Power Plants" 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 JSC "TGC-1". 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.:	Subject Group:
RUSSIA/0047-2/2010	JI

Project title:
"Reconstruction of the Nevsky branch Hydro Power Plants"

Work carried out by:
Leonid Yaskin – Lead Verifier
Grigory Berdin – Verifier

Work verified by:
Ivan Sokolov - Internal Technical Reviewer

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Indexing terms:

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

Abbreviations

AIE	Accredited Independent Entity
BLS	Baseline Study
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CO_2	Carbon Dioxide
DDR	Draft Determination Report
DR	Document Review
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
GHG	Greenhouse House Gas(es)
HPP	Hydro Power Plant
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
JSC	Joint Stock Company
MoV	Means of Verification
MP	Monitoring Plan
NCSF	National Carbon Sequestration Foundation
PCF	Prototype Carbon Fund (World Bank Carbon Finance Unit)
PDD	Project Design Document
PP	Project Participant
RF	Russian Federation
SCF	Stiching Carbon Finance
tCO2e	Tonnes CO2 equivalent
TPP	Thermal power plant
UES	Unified Energy System
URES	United Regional Electricity System
UNFCCC	United Nations Framework Convention for Climate Change

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1 INTRODUCTION

ECF Project Ltd. has commissioned Bureau Veritas Certification to determine its JI project "Reconstruction of the Nevsky branch Hydro Power Plants" (hereafter called "the project") located near Svetogorsk town, Leningrad 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 the 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 JSC "TGC-1". 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 the reconstruction of Svetogorskaya and Lesogorskaya HydroPower Plants (HPPs). The reconstruction of 8 power units and upgrade of auxiliary equipment allow to increase the efficiency of the installed turbines and thus to increase electric capacity of the plants. The additional electricity generated by reconstructed HPPs will substitute electricity from the grid.
The project also includes repairing of a bridge on Svetogorskaya HPP dam and repairing of the unpaved road to Lesogorsk settlement.

Project Company:
TGC-1 is the leading producer and supplier of electricity and heat power in the North-West region of Russia and the third largest territorial generating company in Russia in terms of installed capacity. It operates 55 electric generating stations in four regions of Russia – the City of St Petersburg, Republic of Karelia, Leningrad Region and Murmansk Region. The company's generation assets include thermal, hydroelectric, diesel and co-generation power plants and it has a heating network of 975,4 km. TGC-1 has installed electric generation capacity of 6,275.45 MW and heat production capacity of 14,548 Gcal per hour. The electricity produced by it is primarily sold on the domestic wholesale market with a portion also exported to neighboring Finland and Norway. The company is a strategic supplier of heat power to St. Petersburg, Petrozavodsk, Murmansk, Kirovsk and Apatity.
The state registration of the company took place March 25, 2005. TGC-1 began operating on October 1, 2005.
Since November 1, 2006 (following completion of the merger of Peterburgskaya Generating Company, Kolskaya Generating Company, Apatitskaya Generating Company and Karelenergogeneration with JSC "TGC-1"), the inter-regional production assets of TGC-1 have been under common control.
Shares of TGC-1 are traded on the quotation lists "B" on the RTS stock exchange and on the quotation list "A1" on the MICEX stock exchange.
Major Shareholders: Gazprom energoholding 51.79%, Fortum Power and Heat OY 25.66 %, other shareholders 22.55%
The Svetogorskaya HPP and the Lesogorskaya HPP started operations in 1937 and 1947 respectively. These HPPs are part of the cascade of the Vuoksinskiye HPPs, including four HPPs constructed by Finland in 1920-1950 (Imatra and Tainionkoski HPPs are located further up on the Vuoksa river).

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 will cover the energy demand. The energy companies within the same regional energy system (URES "North-West") can increase electricity generation at the existing capacities by delaying decommissioning of outdated capacity and/or installing new energy units.

Project Scenario:

The project activity includes the reconstruction of two hydropower plants (HPPs) of the Nevskiy Branch HPPs that are part of the Consolidated Energy Systems (CES) of North-West in Russia. The two HPPs are the Svetogorskaya HPP and the Lesogorskaya HPP. The owner is an open joint stock company (JSC) Territorial Generating Company #1 (TGC-1).

At each site 4 turbine wheels are replaced under the project. In addition, following auxiliary equipment is upgraded:

- regulators of turbine speed;
- oil pressure installations;
- generators;
- generator excitation system (switch from rotating to thyristor system);
- generator relay protection (automated start-up and shut-down of HPP unit);
- compressors;
- indoor switchgear -110 kV (pressure switch, disconnect switch and wires);
- power transformers 10/110 kV;
- flow passages (intake screen, fast-falling gates, gate lifting mechanisms).

The reconstruction of four HPP units at the Lesogorskaya HPP allows to increase the electric capacity from 23.5 MW to 29.5MW and the reconstruction of four HPP units at the Svetogorskaya HPP allows to increase the electric capacity from 23.5 MW to 30.5 MW).

The project also includes repairing of a bridge on Svetogorskaya HPP dam and repair of the unpaved road to Lesogorskaya settlement.

Reconstruction of HPPs provides the following benefits:

- Improvement of power supply and decreasing the power flow among CES North-West and other CES of Russia;
- Decreasing the pollutant emissions due to prevention of fossil fuel use for power generation (Reduction of NOX, SO2 and VOC);
- Creating additional employment;
- Promoting regional economical development.

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 2006, the Energy Carbon Fund estimated whether it is possible to implement the project "Reconstruction of the Nevsky branch Hydro Power Plants" as a joint implementation project.

On June 20, 2006 the business plan "Reconstruction of the Nevsky branch Hydro Power Plants" was approved at a meeting of the Board of Directors.

On December 12, 2007 the decision of execution of JI Agreement by and between TGK-1 and Fortum was approved by Board of Director of TGK-1 (minutes No. 20)

On February 20, 2008 Fortum, the Russian Territorial Generating Company No. 1 (TGC-1) and ECF Project Ltd. (subsidiary of Energy Carbon Fund) had signed an agreement according to which Fortum would purchase approximately 5 million tones of emission reduction units (ERU) from TGC-1.

1.4 Determination team

The determination team consists of the following personnel:

Leonid Yaskin
Bureau Veritas Certification – Team Leader, Lead Verifier

Grigory Berdin
Bureau Veritas Certification – Team member, Lead Verifier

Ivan Sokolov
Bureau Veritas Certification – Internal Technical Reviewer

2 METHODOLOGY

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

The determination consisted of the following three phases:

i) desk review of the project design document and the baseline and monitoring plan;
ii) project office visit and interviews with project owner and PDD developer on 17/12/2009;
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 five tables.

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

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

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

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

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

Figure 1 Determination protocol tables

2.1 Review of Documents

ECF Project Ltd. provided Bureau Veritas Certification (BVC) on 24/11/2009 the Project Design Document (PDD) Version 02 dated 04/12/2008 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 PPD Form. BVC received the finally remade PDD Version 03 dated 14/12/2009. This version of PDD was made publicly available for public comments on UNFCCC JI site from 16 December 2009 to 14 January 2010.

PDD Version 03 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 24/12/2009 with 21 CAR's and 2 CL's.

PDD developer ECF Project Ltd. issued iteratively ten batches of responses to BVC requests which were eventually embedded in the amended PDD Version 12 dated 22/06/2010.

The determination findings presented in this Determination Report Version 1 and Appendix A relate to the project as described in the PDD Version 02 (initial) and Version 12 (final).

2.2 Follow-up Interviews

Bureau Veritas Certification conducted on 17/12/2009 a visit to the project's Head Office in Saint-Petersburg city in the Leningrad Region and had interviews with ECF Project Ltd. and JSC "TGC-1", which confirmed the selected information and clarified some issues identified in the document review. The interview topics are listed in Table 6.

Table 6 Interview topics

Date/ Site/ Interviewed organization	Interview topics
17/12/2010 Saint-Petersburg Sites: JSC "TGC-1" Office Organisations: JSC "TGC-1" ECF Project Ltd.	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 consumption coefficients for project and baseline scenario; 8. IRR 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. Public hearings, if any. 12. Training programme for plant operators. 13. 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.

DDR Version 2 summarising Bureau Veritas Certification's findings of the desk document review reported 21 CAR's and 2 CL's. The amendments made by ECF Project Ltd. to the PDD and summarised in PDD Version 12 dated 22/06/2010 satisfactorily addressed the verifier's requests. As a result, the Determination Report Version 1 was issued on 29/06/2010 and sent, together with the final PDD Version 12, to BVC Internal Technical Reviewer (ITR) for review. The Internal technical review had not raised new CARs or CLs.

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 site visit are summarized. A more detailed record of these findings can be found in the Appendix A Determination Protocol.
ii) where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the determination protocol criteria or the project objectives, a Clarification or Corrective Action Request, respectively, has been issued. The Clarification and Corrective Action Requests are stated in Appendix A of the 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 reconstruction of Svetogorskaya and Lesogorskaya Hydro-Power Plants (HPPs). The reconstruction of 8 power units and upgrade of auxiliary equipment are implemented under the project activity. The project allows to increase the efficiency of the installed turbines and thus to increase the electric capacity of Lesogorskaya

and Svetogorskay HPPs. The reconstruction of four HPP units at the Lesogorskaya HPP allows to increase the unit electric capacity from 23.5 MW to 29.5MW and the reconstruction of four HPP units at the Svetogorskaya HPP allows to increase the unit electric capacity from 23.5 MW to 30.5 MW).

The project also includes repairing of the bridge on Svetogorskaya HPP dam and repairing of the unpaved road to Lesogorskaya settlement.

HPPs units reconstructed under the project are the greenfield state-of-the-art facilities which are more environmentally friendly than the common practice alternatives for electricity generation – coal, fuel oil or natural gas combustion. .

Reduction of GHG emissions as a result of the project realization will occur due to replacement of electricity that would be generated by fossil fuel fired power plants in the grid of the CES "The North-West" in the absence of the project by electricity generated by reconstructed Svetogorskaya and Lesogorskaya HPPs.

In accordance with the implementation schedule, a phased launch of the project by units is planned from 2009 till 2012. The implementation schedule is presented in Section A.4.2 of the PDD.

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 659,914 tCO_2e over the crediting period 2009-2012.

The identified areas of concern as to Project Design, PP's response and BV Certification's conclusion are summarized in Appendix A Table 5 (refer to CAR 01 – CAR 06 and CL 01).

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

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

3.2 Baseline and Additionality

The approved consolidated Methodology ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 10 was used to establish the baseline for the project.

The baseline was established by implementing of three steps prescribed by the methodology:
Step 1: Identify realistic and credible alternative baseline scenarios for power generation;
Step 2: Barrier analysis;

Step 3: Investment analysis.

Three alternative scenarios were considered as plausible baseline scenarios for the project (electricity generation at Svetogorskaya and Lesogorskaya HPPs):
- Alternative 1. The reconstruction of the Nevskiy branch HPPs not being undertaken as a JI project;
- Alternative 2. Construction of new thermal power plant (TPP) with installation of CCGT to make up for the capacity of HPPs;
- Alternative 3. Continuation of the current situation.

After the assessment and screening of the Alternatives, only Alternative 3 was left as reasonable and feasible. Alternative 1 was excluded as financially not attractive based on the investment analysis made in PDD Section B.1.

As a result, it was concluded that the Alternative 3 is realistic and credible and therefore 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 to JSC "TGC-1".

As per the ACM0002, version 10 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 projects' additionality. Upon the proof of the additionality, the following series of steps are stipulated by the tool:

1. Identification of alternatives to the project activity consistent with current laws and regulations;
2. Barrier analysis;
3. Investment analysis (including the sensitivity analysis);
4. Common practice analysis.

To assess the project's additionality steps 1, 2, 3 and 4 were implemented accordingly. In Section B.1, 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 there were no similar project activities operational in North-West region.

The identified areas of concern as to Baseline and Additionality, PP's responses and BV Certification's conclusions are summarized in Appendix A Table 5 (refer to CAR 07 – CAR 15 and CL 02).

3.3 Monitoring Plan

The monitoring plan is established in accordance with ACM0002 methodology "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", Version 10 and the methodological "Tool to calculate the emission factor for an electricity system", Version 02.

All categories of data to be collected in order to monitor GHG emissions from the project and determine the baseline of GHG emissions are described in required details. The parameters which are monitored throughout the crediting period include electricity generation by the HPPs after reconstruction. The baseline grid emission factor is calculated and fixed ex-ante (please refer to Annex 2 of the PDD). Formulae for estimation of GHG emissions and calculation of grid emission factor are clearly described.

All emission sources identified above have been included in the monitoring plan. 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.

Allocation of responsibilities for Monitoring Plan implementation and Monitoring Report preparation and an operational and management structure that TGC-1 will implement to monitor emission reduction are 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 summarized in Appendix A Table 5 (refer to CAR 17 - CAR 20).

3.4 Calculation of GHG Emissions

Formulae used for calculation of GHG emissions are presented in PDD Section D and Section E. Input data for calculations and the calculations per se are presented on the comprehensive 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 2009 - 2012 is 659,914 tCO2e. The annual average emission reduction is 164,979 tCO2e.

No areas of concern as to Calculation of GHG Emissions were indicated.

3.5 Environmental Impacts

According to the environmental assessment presented in the PDD, the project does not have any significant environmental impacts. According to the Construction Code of the Russian Federation project design document which is the subject for State Expertise should contain the section "environment protection". But according to the Federal Agency

for Construction, Housing and Utilities the project is classified as a reconstruction and is not the subject for state examination.

The identified area of concern as to Environmental impacts, PP's response and BV Certification's conclusion are summarized in Appendix A Table 5 (refer to CAR 21).

3.6 Comments by Local Stakeholders

No comments of concern were received from local stakeholders.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

In accordance with the Section E "Verification procedure under the Article 6 Supervisory Committee" of the JI guidelines, Bureau Veritas Certification published the PDD Version 03 on UNFCCC JI site on 16/12/2009 and invited comments within 14/01/2010 by Parties, stakeholders and UNFCCC accredited observers. No comments have been received.

5 DETERMINATION OPINION

Bureau Veritas Certification has been commissioned by ECF Project Ltd. to perform a determination of the JI project "Reconstruction of the Nevsky branch Hydro Power Plants" owned by JSC "TGC-1". 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 office 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 barrier, 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.

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 12 dated 22 June 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
29 June 2010

Leonid Yaskin - Team Leader, Lead Verifier

Grigory Berdin – Team Member, Lead Verifier

Bureau Veritas Certification Holding SAS

BUREAU VERITAS
CERTIFICATION
Reviewed
Init
Date: 06/07/2010

6 REFERENCES

Reviewed document or type of information available before the site visit

1	PDD "Reconstruction of the Nevsky branch Hydro Power Plants". Version 03, dated 03/02/2010.
2	Guidelines for Users of the Joint Implementation Project Design Document Form/Version 04, JISC.
3	Guidance on criteria for baseline setting and monitoring/ Version 02, JISC
4	Approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources", Version 10.
5	"Tool to calculate the emission factor for an electricity system". Version 02. CDM – Executive Board.
6	"Tool for the demonstration and assessment of additionality" (version 05.2) approved by the CDM Executive Board.
7	RF Urban Development Code N 190-ФЗ (Federal Law).
8	Excel spreadsheet with emission reduction calculations.
9	Excel spreadsheet with investment analysis.

Reviewed document or type of information obtained at the site visit

10	Excel spreadsheet with investment analysis (TGK-1 tool Alt-Kaskad -1).
11	TGK-1 Investment programme for 2006-2015 dated 14/-3/2007.
12	Svetogorskaya and Lesogorskaya HPPs operational data for 2003-2007.
13	Business Plan for Reconstruction of Cascade of HPP #1". TGK-1, 2007.
14	Letter from the Federal Agency for Construction and Housing and Utilities No. 662/01-05 dated 04.05.2008 which confirms that the project is not the subject for State Expertise.
15	Turbine commissioning schedule dated 06/07/2009. TGK-1
16	Composition and status of TGK-1 hydro turbine park.
17	Terms of Reference for Reconstruction of Cascade of HPP # 1. TGK-1. 2007
18	Contract for Reconstruction of Cascade of HPP # 1. Includes environmental commitments of contractor.
19	Instruction for accounting of electric energy at its production, transportation and distribution. РД 34.09.101-94. Ministry of Fuel and Energy of RF, 22.09.1998
20	Board of Directors TGK-1 Protocol N 20 dated 19/12/2007. Agreement on GI be-

	tween Fortum, TGK-1 and ECF.
21	Statistic Forms 6-TP Hydro for Svetogorskaya and Lesogorskaya HPPs for 2005-2007.

Persons interviewed:

1	Lisizky Eduard – JSC "TGC-1", Chief of investment department
2	Kozlov Roman – JSC "TGC-1", Chief of strategical planning department
3	Shilyaev Aleksey – JSC "TGC-1", Senior specialist of strategical planning department
4	Sizov Vladimir – JSC "TGC-1", Chief Specialist of capital construction department
5	Anikin Gleb – ECF Project Ltd, General Director

APPENDIX A: COMPANY JI PROJECT DETERMINATION PROTOCOL

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

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
1. The project shall have the approval of the Parties involved.	Kyoto Protocol Article 6.1 (a)	CAR 01. The project has no approval of the Host Party. Verifiers' Note: JISC Glossary of JI terms/Version 02 defines the following: a) At least the written project approval(s) by the host Party(ies) should be provided to the AIE and made available to the secretariat by the AIE when submitting the determination report regarding the PDD for publication in accordance with paragraph 34 of the JI guidelines; (b) At least one written project approval by a Party involved in the JI project,	Table 2, Section A.5.

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		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.	
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur.	Kyoto Protocol Article 6.1 (b)	Conclusion is pending	Table 2, Section B.2
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7.	Kyoto Protocol Article 6.1 (c)	OK	N/A
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3.	Kyoto Protocol Article 6.1 (d)	OK	N/A
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects.	Marrakech Accords, JI Modalities, §20	OK	The Russian national focal point is the Ministry of Economic Development. The Russian national guidelines and procedures are established by the "Regulation of reali-

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
			zation of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change". Approved by the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".
6. The host Party shall be a Party to the Kyoto Protocol.	Marrakech Accords, JI Modalities, §21(a)/24	OK	Russia has ratified the Kyoto Protocol by Federal Law N 128-ФЗ dated 04/11/04.
7. The host Party's assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts.	Marrakech Accords, JI Modalities, §21(b)/24	OK	The Russian Federation's assigned amount has been calculated and recorded In the 5th National Communication dated

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
			12/02/10.
8. The host Party shall have in place a national registry in accordance with Article 7, paragraph 4.	Marrakech Accords, JI Modalities, §21(d)/24	OK	Russian Federation has established the GHG Registry by the RF Government Decree N 215-p dated 20/02/06.
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination.	Marrakech Accords, JI Modalities, §31	OK	ECF Project Limited has submitted on 24/11/2009 the PDD Version 02 dated 04/12/2008 to Bureau Veritas Certification, which contains all information needed for determination.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments.	Marrakech Accords, JI Modalities, §32	OK	PDD Version 03 dated 14/12/2009 was made publicly available for comments on UNFCCC JI site as from 16 December 2009 till 14 January 2010.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary im-	Marrakech Accords,	OK	Table 2, Section F

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
pacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the host Party, an environmental impact assessment in accordance with procedures as required by the host Party shall be carried out.	JI Modalities, §33(d)		
12. The baseline for a JI project shall be the scenario that reasonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.1
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
15. The project shall have an appropriate monitoring plan.	Marrakech Accords, JI Modalities, §33(c)	OK	Table 2, Section D
16. A project participant may be: (a) A Party involved in the JI project; or (b) A legal entity authorized by a Party involved to participate in the JI project.	JISC "Modalities of communication of Project Participants with the JISC" Ver-	The Russian project participant will be authorised by the Host Party through the issuance of the approval for	Table 2, Section A

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
	sion 01, Clause A.3	the project. Conclusion is pending a follow-up on CAR 01. Refer to Verifiers' Note in 1 above.	

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of the project					
A.1 Title of the project					
A.1.1. Is the title of the project presented?	1,2	DR	The title of the project is: "Reconstruction of the Nevsky branch Hydro Power Plants". **CAR 02.** Sectoral Scope is not indicated [2].	CAR 2	OK
A.1.2. Is the current version number of the document presented?	1,2	DR	The PDD Version 02.		OK
A.1.3. Is the date when the document was completed presented?	1,2	DR	PDD Version 02 dated 04/12/2008.		OK

A.2. Description of the project					
A.2.1. Is the purpose of the project included?	1,2	DR	**CAR 03.** The purpose of the project is not indicated nor is summarising explanation included as to the baseline scenario, project scenario and history of the project [2].	CAR 03	OK
A.2.2. Is it explained how the proposed project reduces greenhouse gas emissions?	1,2	DR	Quoted from PDD Section A.2: "Reconstruction of the cascade of Vuoksinskiye HPP offers the possibility of decreasing GHG emissions due to displacement of the electricity in the grid produced by fossil fired power plants". **CAR 04.** Please explain how reconstruction can result in displacement of grid electricity. **CAR 05.** The wording "Reconstruction of the cascade of Vuoksinskiye HPP" is incorrect since the project deals only with two out of four cascade HPP.	CAR 04 CAR 05	OK OK
A.3. Project participants					
A.3.1. Are project participants and Party(ies) involved in the project listed?	1,2	DR	Party A is the Russian Federation. Project participants from Party A are: OJSC TGC-1 and Energy Carbon Fund. Party B is Finland. Corresponding project participant is "Fortum Power and Heat OY".		OK
A.3.2. The data of the project participants are presented in tabular format?	1,2	DR	The data is presented in the tabular format as per [2].		OK
A.3.3. Is contact information provided in Annex 1 of the	1,2	DR	The contact information about the project par-		OK

PDD?			ticipants is included in Annex1.		
A.3.4. Is it indicated, if it is the case, if the Party involved is a host Party?	1,2	DR	It is indicated that the Russian Federation is the host Party.		OK
A.4. Technical description of the project					
A.4.1. Location of the project activity					
A.4.1.1. Host Party(ies)	1,2	DR	The Russian Federation is indicated as the host Party in PDD Section A.4.1.1.		OK
A.4.1.2. Region/State/Province etc.	1,2	DR	The project is located in Leningrad region.		OK
A.4.1.3. City/Town/Community etc.	1,2	DR	Svetogorsk town.		OK
A.4.1.4. Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	1,2	DR	The location of Lesogorskaya HPP has the GPS coordinates 61°03'30" North and 28°52'24" East. The location of Svetogorskaya HPP has the GPS coordinates 61°06'16" North and 28°50'23" East.		OK
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
A.4.2.1. Does the project design engineering reflect current good practices?	1,2	DR	Having reconstructed under the project, the Hydro Power Plants will present the current good practices. The scope of reconstruction is listed in PDD Section 4.2. Each HPP consists of four turbines. After the reconstruction, the capacity of the turbine unit is expected to increase from 23,5 MW to 30,5 (Svetogorskaya HPP) and 29,5 MW (Lesogorskaya HPP). **CAR 06.** The implementation schedule is not	CAR 06 CL 01	OK OK

			presented [2]. **CL 01.** Please clarify the implications from the increase of HPP electric capacity at the constant annual water flow.		
A.4.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2	DR	The project is the state-of-the-art technology, which is deemed to result in a significantly better performance than any commonly used technologies in Russia.		OK
A.4.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	DR	The project technology is unlikely to be substituted by other or more efficient technologies within the project period.		OK
A.4.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1,2	DR	This project does not require extensive initial training and maintenance efforts in order to work as presumed during the project period.		OK
A.4.2.5. Does the project make provisions for meeting training and maintenance needs?	1,2	DR	Not applicable		OK
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances					
A.4.3.1. Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	1,2	DR	It is stated in PDD Section A.4.3 that the electricity produced by the additional power capacity of reconstructed hydro power plants will replace electricity generated by fossil fuel fired power plants in the grid of the United Energy System (UES) of Russia. Hence, the		OK

			project activity achieves GHG emission reduction due to decrease of fossil fuels consumption by the grid power plants.		
A.4.3.2. Is it provided the estimation of emission reductions over the crediting period?	1,2	DR	The estimated GHG emission reduction is 637,425 tCO_2e over the crediting period 2009-2012. Refer to PDD Section A.4.3.1. Conclusion is pending a response to CAR 17 which may result in recalculation of emission reduction.	Pending	OK
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO2e?	1,2	DR	The estimated annual emission reduction is: For year 2009 - 107,038 tCO_2e. For year 2010 - 136,180 tCO_2e. For year 2011 – 182,323 tCO_2e. For year 2012 – 211,885 tCO_2e. Annual average is 159,356 tCO_2e. Refer to PDD Section A.4.3.1. Conclusion is pending a response to CAR 17 which may result in recalculation of emission reduction.	Pending	OK
A.4.3.4. Are the data from questions A.4.3.2 and A.4.3.3 above presented in tabular format?	1,2	DR	The data is presented in the tabular format. Refer to the Table in PDD Section A.4.3.1.		OK
A.5. Project approval by the Parties involved					
A.5.1. Are written project approvals by the Parties involved attached?	1,2	DR	Conclusion is pending a response to CAR 01.	CAR 01	OK

B. Baseline **B.1. Description and justification of the baseline chosen**					
B.1.1. Is the chosen baseline described?	1,2, 3,4,5	DR	Quoted from PDD Section B.1: "The CDM Methodology ACM0002/Version 08, Sectoral scope: 01, "C for grids connected electricity generation from renewable sources" was chosen for baseline description with marginal changes. The "Tool to calculate the emission factor for an electricity system (Version 01) was used to calculate the combined margin emission factor of United Energy System (UES) of Russia". **CAR 07.** According to [2] "if an approved CDM baseline and monitoring methodology is used in its totality, in accordance with paragraph 10 of the "Guidance on criteria for baseline setting and monitoring" [3], the most recent valid version of the CDM methodology shall be applied, when the PDD is submitted for publication on the UNFCCC JI website". The latest version of ACM0002 is Version 10 [4]. **CAR 08.** The methodology ACM0002 refers to the latest approved version of the Tool to calculate the emission factor for an electricity system. This is Version 02 [5] rather than 01 used in PDD. **CAR 09.** The baseline is not described nor	CAR 07 CAR 08 CAR 09	OK OK OK

			identified with the use of the prescribed step-wise procedure [4].		
B.1.2. Is it justified the choice of the applicable base-line for the project category?	1,2,3	DR	The applicability of the chosen CDM method-ology is assessed and proven in PDD Section B.1.		OK
B.1.3. Is it described how the methodology is applied in the context of the project?	1,2	DR	It is stated that the CDM Methodology ACM0002 was used with a marginal change: "each reconstructed unit is considered as a separate plant and emission reductions are calculated separately for each one by using their own historic data of electricity genera-tion". The verifiers observe this deviation as not critical.		OK
B.1.4. Are the basic assumptions of the baseline methodology in the context of the project activity presented (See Annex 2)?	1,2,4	DR	**CAR 10.** Please justify the conservatism of the assumption to take the whole UES of Russia for replacement of additional electric-ity generation by the project HPP's. Take note that the project HPP's supply electricity to the Regional Energy System (RES) "North-West" which is deficit and receives electric energy from RES "Centre". The latter, in turn, receives electric energy during some months from RES "South" only. Thus, the electric en-ergy from RES "Mid-Volga", "Ural" and "Sibe-ria", which also belong to UES of Russia, is not involved in the replacement of the project capacity in the baseline scenario. Refer to http://www.so-ups.ru/view_doc.aspx?doc_id=0x199133EF4	CAR 10 CAR 11 CAR 12	OK OK OK

			3DE872F. **CAR 11.** The use of the Tool [5] lacks transparency as regards the following: - The applicability of the Tool to the energy system that includes not only power plants for generation electric energy (are envisaged in the Tool) but also cogeneration heat and power plants (TEZ in Russian, not envisaged in the Tool) is not assessed. TEZ operated in the prescribed heat supply mode cannot be used as replacement power capacity. Does this ensure the conservative establishment of the baseline is not analysed. - OM and BM emission factors are calculated by a method which split the amount of fuel consumed by TEZ in two parts: the one used for electricity generation and another one for heat production. This deviation from the tool [5] is not indicated in PDD. - Incomplete data for 2006-2007 are used for definition of the build margin emission factor (refer to PSS Annex 2 Table 5). **CAR 12.** The key information and data used to establish the baseline (variables, parameters, data sources etc.) are nor provided in the prescribed tabular form [2].		
B.1.5. Is all literature and sources clearly referenced?	1,2, 3	DR	The literature and sources are clearly referenced.		OK
B.2. Description of how the anthropogenic emissions					

of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project					
B.2.1. Is the proposed project activity additional?	1,2, 5	DR	It explicitly stated that the additionality is demonstrated trough steps 1-4 of the current Tool for the demonstration and assessment of additionality, Version 05.2 [6]. This is in compliance with [2]. As Step 1a, four alternatives to the project activity were identified including: - Alternative 0: The reconstruction of the Nevsky branch HPP's not being undertaken as a JI project; - Alternative 3: The continuation of the current situation. **CAR 13.** The definition of Step 1a output as "four possible scenarios are determined as possible baseline scenarios" is incorrect since they are, by definition, the alternatives to the project scenarios. At Step 1b it is stated that all alternatives are consistent with mandatory law and regulations. **CL 02.** Please make it clear that there are no regulations requiring replacing HPP wheels after 70 years of operations. At Step 3, the investment barrier to implementation of the alternatives is considered. This barrier does not prevent the implementa-	CAR 13 CAR 14 CAR 15 CL 02	OK OK OK OK

			tion of at least one alternative – the continuation of the current situation. Regarding the project activity it is asserted that TGC-1 does not have at present enough resources to finance the HPP's reconstruction in short term without the income from trading of emission reduction units. In this respect, the project is additional. **CAR 14.** The project site visit held on 17/12/2009 did not confirm the existence of the investment barrier as described in PDD. The project is approved by the TGC-1 Board of Directors on 20/06/2006 as a part of the Investment Programme of Strategy-of-Development for 2006-2015 and financed at account of additional emission of TGC-1 shares and equity of main shareholders (Gazprom and Fortum). Step 4 Common practice analysis is restricted to mentioning the different size Bratsk HPP reconstruction project, which is also a JI project (JI-0012). **CAR 15.** The common practice analysis is incomplete since other similar activities are not analyzed (e.g. Niva HPP, Saratovskaya HPP, Rybinskaya HPP, Kamskaya HPP). Until CAR 09, CAR 14 and CL 02 are closed the project cannot be recognized as additional.		

B.2.2. Is the baseline scenario described?	1,2	DR	The baseline scenario is described in PDD Section B.2. This is Alternative 3: The continuation of the current situation. Conclusion is pending a response to CAR 08.		OK
B.2.3. Is the project scenario described?	1,2	DR	The project scenario is described in PDD Sections B. 2. This is Alternative 0: The reconstruction of the Nevsky branch HPP's.		OK
B.2.4. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	1,2	DR	A general analysis is included in Section A.4.3.		OK
B.2.5. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1,2	DR	It follows from PDD Section B.2 that the project activity itself is not a likely baseline scenario due to the significant investment barrier.		OK
B.2.6. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	1,2	DR	Conclusion is pending a response to CL 02.	Pending	OK
B.3. Description of how the definition of the project boundary is applied to the project activity					
B.3.1. Are the project's spatial (geographical) boundaries clearly defined?	1,2,3	DR	The whole UES of Russia is included in the project boundary. Conclusion is pending a response to CAR 09.	Pending	OK
B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline					
B.4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?	1,2	DR	The date of the baseline setting is 11/08/2008.		OK

B.4.2. Is the contact information provided?	1,2	DR	- MGM International Ltd. Tel.: +38 044 2792435 Email: JIprojects@mgminter.com - Energy Carbon Fund (contact information is given in PDD Annex 1).		OK
B.4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	It is indicated that MGM International Ltd is not a project participant.		OK
C. Duration of the project and crediting period					
C.1. Starting date of the project					
C.1.1. Is the project's starting date clearly defined?	1,2	DR	The project's starting date is 11/04/2007 being the date of signing the supply contract for main equipment.		OK
C.2. Expected operational lifetime of the project					
C.2.1. Is the project's operational lifetime clearly defined in years and months?	1,2	DR	The operational lifetime of the project is clearly as 30 years. **CAR 16.** Please define the operation lifetime in years and months.	CAR 16	OK
C.3. Length of the crediting period					
C.3.1. Is the length of the crediting period specified in years and months?	1,2	DR	The length of the crediting period is specified as 4 years (48 months). The starting date of the crediting period is specified as 07/01/2009.		OK
D. Monitoring Plan					

D.1. Description of monitoring plan chosen					
D.1.1. Is the monitoring plan defined?	1,2	DR	The monitoring plan is defined in PDD Section D.1. It is explicitly stated that the Monitoring plan was established according to ACM0002 Methodology (Version 8). Conclusion is pending a response to CAR 07.	Pending	OK
D.1.2. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.	1,2	DR	Option 1 is used.		OK
D.1.3. Data to be collected in order to monitor emissions from the project, and how these data will be archived.	1,2,	DR	The emissions in the project activity $PE_y = 0$ as per [4]. Refer to PDD Section D.1.1.2. Hence, there is no data to be collected.		OK
D.1.4. Description of the Formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO_2 equivalent).	1,2	DR	Please refer to D.1.3.		OK

D.1.5. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived.	1,2	DR	Data to be monitored throughout the crediting period in order to determine the baseline emissions is: - net electricity supplied by the project activity to the grid. 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 are: - averaged historical 2003-2007 data for each turbine of the project HPP's (refer to PDD Annex 2 Table 1); - data on combined margin CO2 emission factor for grid-connected power generation (refer to PDD Annex 2 Tables 3-5); - point in time when the existing equipment would need to be replaced in the absence of the project activity (the year 2020, refer to PDD Section E.4). **CAR 17.** Please include the above parameters in the tabular form of PDD Section D.1.1.3.	CAR 17	OK
D.1.6. Description of the Formulae used to estimate baseline emissions (for each gas, source etc. emissions in units of CO_2 equivalent).	1,2,4	DR	These are formulae in PDD Section D.1.1.4. **CAR 18.** Please adjust the formulae in Section D.1.1.4 in accordance with ACM0002 (Version 10) [4], make the formulae numbered (throughout PDD) and specify each	CAR 18	OK

			parameter in the formulae for the purpose of the monitoring plan. Please take note that the used old Version 8 of ACM0002 does not take into account a standard deviation of the annual average historical net electricity generation delivered to the grid. The inclusion of the standard deviation will change the estimated GHG emission reductions.		
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be consistent with those in section E)	1,2	DR	Option 2 is not used.		OK
D.1.8. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived.	1,2	DR	Not applicable.		OK
D.1.9. Description of the Formulae used to calculate emission reductions from the project (for each gas, source etc; emissions/emission reductions in units of CO_2 equivalent).	1,2	DR	Not applicable.		OK
D.1.10. If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project.	1,2	DR	No leakage emissions are considered as per [4].		OK
D.1.11.Description of the Formulae used to estimate leakage (for each gas, source etc,; emissions in units of CO_2 equivalent).	1,2	DR	Not applicable.		OK
D.1.12. Description of the Formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions in units of CO_2 equivalent).	1,2	DR	Please refer to formulae in PDD Section D.1.4.		OK
D.1.13. Is information on the collection and archiving of	1,2	DR	Please refer PDD Section D.1.5.		OK

information on the environmental impacts of the project provided?					
D.1.14. Is reference to the relevant host Party regulation(s) provided?	1,2	DR	**CAR 19**. Reference to relevant Russian regulations is not provided.	CAR 19	OK
D.1.15. If not applicable, is it stated so?	1,2	DR	Please refer to D.1.14.		OK
D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored					
D.2.1. Are there quality control and quality assurance procedures to be used in the monitoring of the measured data established?	1,2	DR	**CAR 20**. Please indicate QC and QA procedures used at the HPP's for measurement of electric energy. Please correct the table number D.2.1.3 in the box.	CAR 20	OK
D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan					
D.3.1. Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project	1,2	DR	The operational and management structure that the project participants(s) will implement in order to monitor emission reduction is described. Refer to PDD Section D.3.		OK

D.4. Name of person(s)/entity(ies) establishing the monitoring plan					
D.4.1. Is the contact information provided?	1,2	DR	- MGM International Ltd Tel.: +38 044 2792435 Email: JIprojects@mgminter.com - Energy Carbon Fund (contact information is given in PDD Annex 1).		OK
D.4.2. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	It is indicated that MGM International Ltd is not a project participant.		OK
E. Estimation of greenhouse gases emission reductions					
E.1. Estimated project emissions					
E.1.1. Are described the formulae used to estimate anthropogenic emissions by source of GHGs due to the project?	1,2	DR	According to [4] project emissions PE_y =0.		OK
E.1.2. Is there a description of calculation of GHG project emissions in accordance with the Formula specified in for the applicable project category?	1,2	DR	Not applicable		OK
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1,2	DR	Not applicable.		OK
E.2. Estimated leakage					
E.2.1. Are described the Formulae used to estimate leakage due to the project activity where required?	1,2	DR	According to [4] no leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g.		OK

			extraction, processing, transport). These emissions sources are conservatively neglected.		
E.2.2. Is there a description of calculation of leakage in accordance with the Formula specified in for the applicable project category?	1,2	DR	Not applicable		OK
E.2.3. Have conservative assumptions been used to calculate leakage?	1,2	DR	Not applicable.		OK
E.3. The sum of E.1 and E.2.					
E.3.1. Does the sum of E.1. and E.2. represent the project activity emissions?	1,2	DR	As no leakage is expected and project emissions are considered zero, E1+E2=0.		OK
E.4. Estimated baseline emissions					
E.4.1. Are described the Formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category?	1,2,4	DR	Baseline emissions *(BE_y)* are estimated by formulae from by ACM0002 (Version 8). These should be adjusted in accordance with ACM0002 (Version 10) [4]. Please take note that the used old Version 8 of ACM0002 does not take into account a standard deviation of the annual average historical net electricity generation delivered to the grid. Conclusion is pending a response to CAR 17.	Pending	OK
E.4.2. Is there a description of calculation of GHG baseline emissions in accordance with the Formula specified for the applicable project category?	1,2	DR	Conclusion is pending a response to CAR 17.	Pending	OK
E.4.3. Have conservative assumptions been used to calculate baseline GHG emissions?	1,2	DR	No conservative assumptions are indicated in PDD.		OK

E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
E.5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	1,2	DR	Yes, it does. As E.3 = 0, $ER_y = BE_y$.		OK
E.6. Table providing values obtained when applying Formulae above					
E.6.1. Is there a table providing values of total CO_2 abated?	1,2	DR	PDD Section E.6 provides the total values of project emissions, leakage, baseline emissions, and emission reductions.		OK
F. Environmental impacts					
F.1. Documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party					
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?	1,2	DR	An analysis of the environmental impacts of the project is presented. **CAR 21.** Environmental impact during the reconstruction is not analyzed.	CAR 21	OK
F.1.2. Are there any host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1,2,7	DR I	According to host Party regulation, reconstruction works are not subject to the state construction surveillance and the project documentation is not subject to the state expertise. Accordingly, for the projects like this there is no host party requirement for an EIA.		OK
F.1.3. Are the requirements of the National Focal	1,2,	DR	The National Focal Point (MED) requires in-		OK

Point being met?	8		cluding in the provided project documentation a short description of the EIA carried out in accordance with the established order [8]. Should the information in PDD Section F.1 suit this requirement will become clear when the ERU operator (Sberbabk) starts the selection of JI projects subject to the competition.		
F.1.4. Will the project create any adverse environmental effects?	1,2, 9	DR I	To meet the requirements of National Regulation [9], the application for the project approval shall include, inter alia, the substantiation of environmental effectiveness of the project. The application will be submitted following the presented determination of the project.		OK
F.1.5. Are transboundary environmental impacts considered in the analysis?	1,2	DR	Transboundary impacts of the project are considered as irrelevant.		OK
F.1.6. Have identified environmental impacts been addressed in the project design?	1,2	DR	Refer to F.1.1.		OK
G. Stakeholders' comments					
G.1. Information on stakeholders' comments on the project, as appropriate					
G.1.1. Is there a list of stakeholders from whom comments on the project have been received?	1,2	DR I	It is stated in PDD Section G.1 that stakeholders' comments will be compiled after stakeholders' meeting which will be organized by the TGC-1.		OK
G.1.2. The nature of comments is provided?	1,2	DR I	Please refer to G.1.1.	Pending	OK
G.1.3. Has due account been taken of any stakeholder comments received?	1,2	DR I	Please refer to G.1.1.	Pending	OK

Table 4 Compliance of the PDD with the approved Baseline and Monitoring Methodology: ACM0002 / Version 10 "Consolidated methodology for grid-connected electricity generation from renewable sources"

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1 Source, definitions and applicability					
1.1 Sources					
1.1.1 Are the methodologies or tools which the above approved methodology draws upon and their version number referred?	1,2	DR	The methodology refers to last versions of four tools: 1. Tool to calculate the emission factor for an electricity system; 2. Tool for the demonstration and assessment of additionality; 3. Combined tool to identify the baseline scenario and demonstrate additionality; 4. Tool to calculate project or leakage CO2 emissions from fossil fuel combustion. The PDD correctly refers to tools number 1 and 2. Versions of the tools are referred correctly. Tools 3 and 4 are inapplicable for the project and are not referred in the PDD.		OK
1.2 Definitions					
1.2.1 Are the indicated definitions applied throughout the PDD?	1,2	DR	All definitions indicated in ACM0002 methodology are generally applied in the PDD. Applied definitions are: - Installed power generation capacity; - Capacity addition; - Retrofit; - Replacement.		OK
1.3 Applicability					
1.3.1 Are the methodology applicability condi-	1,2	DR	Yes, all the applicability conditions as defined in ACM0002		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
tions applicable to the project activity?			are applicable to the project activity. The project falls under the following condition: - The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir). The project activity is implemented in an existing reservoir, with no change in the volume of reservoir.		
2 Baseline Methodology Procedure					
2.1 Project boundary					
2.1.1 Does the project boundary conform to its description in ACM0002?	1,2	DR	Yes, it does. The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project power plant is connected to - United regional electricity system of North-West of Russia (URES "The North-West").		OK
2.1.2 Are the emission sources included or excluded from the project boundary listed?	1,2	DR	Yes, all the relevant emission sources included or excluded are listed in the table of the format used in ACM0002.		OK
2.2 Identification of the baseline scenario and demonstration of additionality					
2.2.1 Is the three-step procedure described in ACM0002 applied?	1,2, 3	DR	Yes, it is applied in full with the use of the latest approved version of the "Tool for the demonstration and assessment of additionality" (version 05.2) for steps 3 and 4.		OK
2.2.2 Are all plausible alternative scenarios under ACM0002 listed?	1,2	DR	Yes, all alternative scenarios prescribed by ACM0002 are listed in PDD. These are: - Alternative 1: The reconstruction of the Nevskiy branch HPPs not being undertaken as a JI project;		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			- Alternative 2: Construction of new thermal power plant (TPP) with installation of CCGT to make up for the capacity of HPPs; - Alternative 3: Continuation of the current situation.		
2.2.3 Are realistic combinations of these components identified and are they considered as possible alternative scenarios to the proposed project activity?	1,2	DR	Yes, all realistic combinations of the components are identified and considered as possible alternatives to the proposed project activity.		OK
2.2.4 Are the legal aspects of the identified baseline alternatives evaluated and are the alternatives in compliance with mandatory applicable legal and regulatory requirements?	1,2	DR	Yes the identified realistic and credible alternatives are thoroughly evaluated and shown to be in compliance with mandatory applicable legal and regulatory requirements. Refer to Sub-step 1b.		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.2.5 Is economic attractiveness of the alternatives calculated following the guidance for the investment analysis in the latest approved version of the "Tool for the demonstration and assessment additionality"?	1,2, 3	DR	The investment analysis which included the benchmark analysis and sensitivity analysis have been carried out following the guidance in the "Tool for the demonstration and assessment additionality" (Version 05.2). It is shown that the project activity without JI registration is not economically and financially attractive.		OK
2.2.6 Are calculations descried and documented transparently?	1,2, 3	DR	The investment analysis is described in PDD Section B.1 under Step 3. Input data for the analyses are provided. An excel spreadsheet with calculations was provided to verifiers, checked and found as appropriate.		OK
2.2.7 Is the common practice analysis carried out?	1,2, 3	DR	The common practice analysis has been carried out following the guidance in the "Tool for the demonstration and assessment of additionality" (Version 05.2). No evidence could be found for project activities similar to the proposed JI project. Refer to PDD Section B.1 Step 4.		OK
2.3 Baseline emissions					
2.3.1 Are the baseline emissions calculated by formulae from ACM0002?	1,2	DR	The baseline emissions are calculated according to the ACM0002.		OK
2.4 Project emissions					
2.4.1 Are the project emissions calculated by formulae from ACM0002?	1,2	DR	According to the ACM0002 methodology the project emissions equals zero.		OK
2.4.2 Are the project emissions from the combustion of fossil fuel calculated applying the latest approved version of the "Tool to calculate project or leakage CO2 emissions from fossil fuel combus-	1,2,4	DR	Not applicable.		OK

CHECKLIST QUESTION		Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	tion"?					
2.4.3	Are the project emissions from the consumption of electricity calculated applying the latest approved version of the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption"?	1,2,5	DR	Not applicable.		OK
2.5	Leakage					
2.5.1	Are leakage emissions neglected?	1,2, 3	DR	No leakage emissions are considered in line with the ACM0002.		OK
2.6	Emissions reduction					
2.6.1	Are the emission reductions calculated by formulae from ACM0002?	1,2	DR	The emission reductions are calculated according to the ACM0002.		
2.7	Data and parameters not monitored					
2.7.1	Does JI-PDD include sufficient description and justification of data and parameters not monitored?	1,2	DR	The PDD includes one parameter not monitored it is combined baseline emission factor for the electricity supplied by the URES "North-West" of Russia. Appropriate description and justification is provided. Please refer to Annex 2 of PDD.		OK
2.8	Monitoring Methodology					
2.8.1	Does JI-PDD include minimal procedures to ensure that the data collection and retention will be made properly?	1,2	DR	The PDD includes sufficient procedures to ensure that the data collection and retention will be made properly. Please refer to the description of the monitoring plan in PDD Section D.1.		OK
2.8.2	Are data and parameters indicated in ACM0002, monitored?	1,2	DR	All data and parameters to be monitored listed in the ACM0002 are included in PDD Section B.1.		OK

Table 4 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	1,2	DR I	Not applicable. Refer to F.1.1		OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	1,2	DR I	Not applicable. Refer to F.1.1		OK
1.3. Is the project in line with relevant legislation and plans in the host country?	1,2	DR	Yes, the project is in line with relevant legislation and plans in the host country.		OK

Table 5 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
CAR 01. The project has no approval of the Host Party.	1 Table1	N/A	Conclusion is pending. The approval should be obtained following the determination of the project.
CAR 02. Sectoral Scope is not indicated [2].	A.1.1	Response 1 dated 30.03.10 Amendments were made to PDD. See p. 2 Response 2 dated 14.04.10 PDD is updated.	Conclusion on Response 1 Response is accepted. CAR will be closed when PDD Version will be updated. Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 03. The purpose of the project is not indicated nor is summarising explanation included as to the baseline scenario, project	A.2.1	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 3	Conclusion on Response 1 Response is accepted.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
scenario and history of the project [2].		Please find attached the Letter from the Director of Investment Policy and Market Development of Energy Carbon Fund Kolesnikov D.A. No. DK-557 dated 18.12.2006	However, CAR will be closed when an evidence is provided to the verifier and referred to in PDD as to the information in Response 2: In 2006, the Energy Carbon Fund estimated whether it is possible to implement the project "Reconstruction of the Nevsky branch Hydro Power Plants" as a joint implementation project. Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 04. Please explain how reconstruction can result in displacement of grid electricity.	A.2.2	Response 1 dated 30.03.10 Amendments were made to PDD. See p. 4	Conclusion on Response 1 Response is accepted. CAR is closed based on due amendments made to

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			PDD.
CAR 05. The wording "Reconstruction of the cascade of Vuoksinskiye HPP" is incorrect since the project deals only with two out of four cascade HPP.	A.2.2	Response 1 dated 30.03.10 Amendments were made to PDD. See p. 4	Conclusion on Response 1 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 06. The implementation schedule is not presented [2].	A.4.2.1	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 9	Conclusion on Response 1 Response is not accepted. Please indicate the planned commissioning dates of new hydro generators in the implementation schedule. Such information was provided to the verifiers during the site visit. Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
CAR 07. According to [2] "if an approved CDM baseline and monitoring methodology is used in its totality, in accordance with paragraph 10 of the "Guidance on criteria for baseline setting and monitoring" [3], the most recent valid version of the CDM methodology shall be applied, when the PDD is submitted for publication on the UNFCCC JI website". The latest version of ACM0002 is Version 10 [4].	B.1.1	Response 2 dated 14.04.10 The "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" was revised to version 10 and was valid from 11 Jun 09 to 25 Feb 10. The PDD version 3.0 is dated 14 December 2009. Revision of the Methodology imposes some changes in the PDD. Amendments were made throughout the PDD. Changes are highlighted in yellow.	Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 08. The methodology ACM0002 refers to the latest approved version of the Tool to calculate the emission factor for an electricity system. This is Version 02 [5] rather than 01 used in PDD.	B.1.1	Response 2 dated 14.04.10 The "Tool to calculate the emission factor for an electricity system" was revised to version 2 during EB meeting 16 October 2009. The PDD version 3.0 is dated 14 December 2009. Revision of the Methodology imposes some changes in the PDD. Amendments were made throughout the PDD. Changes are highlighted in yellow.	Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 09. The baseline is not described nor identified with the use of 3 steps including the investment analysis as per [4].	B.1.1	Response 3 dated 21.04.10 Amendments were made to PDD. See p. 15-18 Response 4 dated 23.04.10	Conclusion on Response 3 Response is not accepted. Please use exactly the 3 steps indicated in AM0002

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
		Amendments were made to PDD. See p. 15-16. The statement "Project participants use Step 3 (barrier analysis) to assess and determine project additionality" has been eliminated. <u>Response 5 dated 19.05.10</u> 1. Identification of baseline was done in Section B.1. Please see p. 11 2. Investment analysis for two alternatives was done in Section B.1. Please see p. 15. 3. Fuel barrier was justified in more detail. Please see p. 12 4. Explanation was made in PDD, please see p.13 5. Adjustment was made according to your request. Please see p. 13	Version 10. Pay attention to Step 2 Barrier Analysis which is conducted according to Combined Tool and Step 3 Investment Analysis which can be based either on Combined Tool or Additionality Tool. The statement "Project participants use Step 3 (barrier analysis) to assess and determine project additionality" is irrelevant. <u>Conclusion on Response 4</u> Response is not accepted. 1. Identification of baseline shall be done in Section B.1. For guidance please refer to Guidelines for users. 2. According to ACM0002 and Combined Tool, if after the barrier analysis

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			only one Alternative remains, and this is not the project activity, Investment analysis is not needed. The next step will be the common practice analysis. You may leave the investment analysis but this needs to be commented. 3. Fuel barrier (coal, gas) should be justified I more detail. 4. Please explain how JI will help to alleviate barriers for project activity. 5. Correct the indicated text: Alternative 1 cost more than Alternative 0 ???, Taking into account that TGC-1 does not have the ability to raise capital for Alternative 0 ???, therefore Alternatives 1 are not feasible in eco-

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			nomic terms. ***Outcome of Sub-step 2a:*** There are a number of barriers, КАКИЕ? the main of which is lack of financial resources to implement Alternatives 1 and 2. ***Outcome of Sub-step 2b:*** Alternative 1 and 2.??? Alternative 3 does not have obstacles for development, therefore this alternative scenario is the *baseline scenario.* Conclusion on Response 5 Response to items 1-5 is accepted. After the amendments assessment of additionality was completely removed from Section B.2. Now section B.2 does not contain any assessment of additionality. Please include the assessment in Section B.2 or provide adequate links. Please also correct the

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			indicated text: "To describe and justify the chosen baseline the Methodology ACM0002 Version 10 is applied. It is developed according to JISC "Guidance on criteria for baseline setting and monitoring" version 02 (paragraph 9a)" Paragraph 9a pertains to JI specific approach. Final conclusion The baseline is described and identified with the use of 3 steps including the investment analysis as per [4]. Investment analysis was carried out with the use of a TGK-1 tool "Alt-Kaskad". Benchmarking, accounting of inflation, forecast of elec-

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			tricity tariff change, sensitivity analysis have been professionally made. CAR is closed based on due amendment made to PDD. Also please refer to Table 6 Item 1.
CAR 10. Please justify the conservatism of the assumption to take the whole UES of Russia for replacement of additional electricity generation by the project HPP's. Take note that the project HPP's supply electricity to the Regional Energy System (RES) "North-West" which is deficit and receives electric energy from RES "Centre". The latter, in turn, receives electric energy during some months from RES "South" only. Thus, the electric energy from RES "Mid-Volga", "Ural" and "Siberia", which also belong to UES of Russia, is not involved in the replacement of the project capacity in the baseline scenario. Refer to http://www.so-ups.ru/view_doc.aspx?doc_id=0x199133EF4	B.1.4	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 17 and 38-41 Response 3 dated 21.04.10 Amendments were made to PDD. See p. 12-13, 35 and 38 Response 4 dated 23.04.10 Amendments were made to PDD. See p. 45 as well as changes were made to Table 3 of Annex 2	Conclusion on Response 2 Response is accepted. CAR will be closed when the statement on page 44 of PDD is corrected. Quote: "In Table 3 of Annex 2, the groups of fossil fuel power stations of the UES of Russia (except CES of East) are presented". Please Indicate correct page numbers in the response. Conclusion on Response 3

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
3DE872F.			CAR is not closed since incorrect page numbers are indicated in Response 3 and therefore it was impossible for the verifier to verify the Response. Conclusion on Response 4 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 11. The use of the Tool [5] lacks transparency as regards the following: - The applicability of the Tool to the energy system that includes not only power plants for generation electric energy (are envisaged in the Tool) but also cogeneration heat and power plants (TEZ in Russian, not envisaged in the Tool) is not assessed. TEZ operated in the prescribed heat supply mode cannot be used as replacement power capacity. Does this ensure the conservative establishment of the baseline is not analysed.	B.1.4	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 41	Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
- OM and BM emission factors are calculated by a method which split the amount of fuel consumed by TEZ in two parts: the one used for electricity generation and another one for heat production. This deviation from the tool [5] is not indicated in PDD. - Incomplete data for 2006-2007 are used for definition of the build margin emission factor (refer to PSS Annex 2 Table 5).			
CAR 12. The key information and data used to establish the baseline (variables, parameters, data sources etc.) are not provided in the prescribed tabular form [2].	B.1.4	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 12 Response 3 dated 21.04.10 Amendments were made to PDD. See p. 12-13	Conclusion on Response 2 Response is not accepted. 1. Total electricity delivered as a result of project activities to the grid is not included in the tabular form. 2. Sigma historical and EG historical are not included in the tabular form. 3. Parameter *EGm,y* is evidently superfluous and should be removed. Conclusion on Response 3

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 13. The definition of Step 1a output as "four possible scenarios are determined as possible baseline scenarios" is incorrect since they are, by definition, the alternatives to the project scenarios.	B.2.1	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 15	Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 14. The project site visit held on 17/12/2009 did not confirm the existence of the investment barrier as described in PDD. The project is approved by the TGC-1 Board of Directors on 20/06/2006 as a part of the Investment Programme of Strategy-of-Development for 2006-2015 and financed at account of additional emission of TGC-1 shares and equity of main shareholders (Gazprom and Fortum).	B.2.1	Response 5 dated 19.05.10 Amendments were made to PDD. See p. 11 and please find attached excel file.	Conclusion on Response 5 The investment barrier was removed from consideration. The CAR is closed.
CAR 15. The common practice analysis is incomplete since other similar activities are	B.2.1	Response 3 dated 21.04.10	Conclusion on Response 3 Response is accepted.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
not analyzed (e.g. Niva HPP, Saratovskaya HPP, Rybinskaya HPP, Kamskaya HPP).		Amendments were made to PDD. See p. 19-20	CAR is closed based on due amendments made to PDD. Verifier observes that one of distinguishing feature of the project is the upgrade of different pieces of equipment; in particular, the Kaplan turbine and flow passages were re-profiled to achieve a higher capacity and efficiency.
CAR 16. Please define the operation lifetime in years and months.	C.2.1	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 21	Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 17. Please include the above parameters in the tabular form of PDD Section D.1.1.3.	D.1.5	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 30 Response 3 dated 21.04.10 Amendments were made to PDD. See p. 27-28	Conclusion on Response 2 Response is not accepted. 1. Table of Section D.1.1.3 contains the same parameters B1 and B3. One of

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			them is superfluous. 2. Table of Section D.1.1.3 should include Sigma historical and EG historical. These data are collected to calculate BE. Conclusion on Response 3 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 18. Please adjust the formulae in Section D.1.1.4 in accordance with ACM0002 (Version 10) [4], make the formulae numbered (throughout PDD) and specify each parameter in the formulae for the purpose of the monitoring plan. Please take note that the used old Version 8 of ACM0002 does not take into account a standard deviation of the annual average historical net electricity generation delivered to the grid. The inclusion of the standard deviation will change the estimated GHG emission reductions.	D.1.6	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 24-25 Response 3 dated 21.04.10 Amendments were made to PDD. See p. 1, 38, 49 Please see file Emission Reduction Calc (Nevskiy HPPs).xls	Conclusion on Response 2 Response is not accepted. 1. Please provide excel tool which calculates Sigma historical and EG historical as well as EGpg,y by formula (8) from ACM0002 Version 10. Refer to Table 1 Annex 2. 2. Please be precise as to

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
		Response 4 dated 23.04.10 Amendments were made to PDD. See p. 13, 28 Response 5 dated 19.05.10 Amendments were made to PDD. See p. 14, 29	how to calculate EG historical. This is the Monitoring Plan which will be followed during monitoring. 3. Section E.4 is not corrected taking into account formula (8) from ACM0002 version10. Please provide excel calculations of BE. Conclusion on Response 3 Response is accepted as to items 1 and 3. Item 2 was not responded. Monitoring Plan includes a loose guidance as to Calculation of *EGhistorical*. It should be clearly stated which of approaches (a) or (b) is used in the Monitoring Plan. Refer to "Project participants may choose among the following two time spans of historical

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			data to determine *EGhistorical*: (a) The five last calendar years prior to the implementation of the project activity; or (b) The time period from the calendar year following DATEhist, up to the last calendar year prior to the implementation of the project, as long as this time span includes at least five calendar years (PDD Page 29). <u>Conclusion on Response 4</u> Please delete option (b) from the text. Please correct the sentence below. Calculation was applied approach (a) of the "Consolidated baseline and monitoring method-

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			ology ACM0002". See Table 1 of Annex 2 p.44. Conclusion on Response 5 CAR is closed based on adequate corrections made to PDD.
CAR 19. Reference to relevant Russian regulations is not provided.	D.1.14	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 31	Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CAR 20. Please indicate QC and QA procedures used at the HPP's for measurement of electric energy. Please correct the table number D.2.1.3 in the box.	D.2.1	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 32 Response 3 dated 21.04.10 Amendments were made to PDD. See p. 35	Conclusion on Response 2 Response is accepted. CAR will be closed when the statement in Table D.2 "QA/QC procedures are not undertaken" will be removed. Conclusion on Response 3 Response is accepted.

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			CAR is closed based on due amendments made to PDD.
CAR 21. Environmental impact during the reconstruction is not analyzed.	F.1.1	Response 2 dated 14.04.10 Amendments were made to PDD. See p. 37	Conclusion on Response 2 Response is accepted. CAR is closed based on due amendments made to PDD.
CL 01. Please clarify the implications from the increase of HPP electric capacity at the constant annual water flow.	A.4.2.1	The increase of HPP electric capacity at the constant annual water flow is not affected. There are two Finish HPPs upstream. Thus, the regulation of water flow by the Finish side. That is with increasing power consumption water flow will remain unchanged. Due to the reconstruction of Cascade Nevsky a reduction of idle discharges of water and increase efficiency at the station happened, which will increase output.	Conclusion on Response 2 Response is accepted. CL is closed based on the response.
CL 02. Please make it clear that there are no regulations requiring replacing HPP wheels after 70 years of operations.	B.2.1	Currently there are no rules governing the replacement wheels on the HPP after a certain period of time. Term of the hydraulic unit is determined by the manufacturer. For these stations, it is 40 years. After this period the lifetime of wheels is extended.	Conclusion on Response 2 Response is accepted. CL is closed based on information provided during the site visit and in the re-

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response (please indicate Page number in PDD)	Determination team conclusion
			sponse.

Table 6 (additional) Resolution of flaws revealed at the control review of the PDD Version 11

Inadequacies requested by determination team to be corrected	Page No in PDD	Summary of project owner response	Determination team conclusion
1. The narration that both ACM0002 and a JI specific approach are applied is incorrect. In fact, ACM0002 was applied in PDD to establish the baseline. The statement that ACM0002 was developed according to JISC Guidance version 02 is incorrect.	11	Response 3 dated 17.06.10 The narration *"The JI specific approach which includes elements of CDM Methodology ACM0002/Version 10 based on alternative scenarios consideration and estimation with help of the following stages that used in this PDD"* has been withdrawn from the PDD. Response 4 dated 22.06.10 Amendments were made to PDD. See p. 11	Conclusion on Response 3 Response is not accepted. *Please see below the analysis of* ***Step 1. Indication and description of the approach chosen regarding baseline setting.*** The CDM Methodology ACM0002/Version 10, Sectoral scope: 01, **"Consolidated baseline methodology for grid-connected electricity generation from renewable sources"** was chosen for baseline description with marginal changes. Hardly correct. I did not notice changes. To describe and justify the chosen baseline the Methodology ACM0002/Version 10 is applied. Correct. You applied the Methodology. But contradicts with Statement 1. It (what is "it"?) is developed according to JISC "Guidance on criteria for baseline setting and monitoring" version 02 If 'it' relates to baseline, the statement is incorrect since the baseline was established as per ACM0002 and the methodological "Combined tool to identify the baseline scenario and demonstrate additionality" (Version 02.2) was used to as-

Inadequacies requested by determination team to be corrected	Page No in PDD	Summary of project owner response	Determination team conclusion
			sess the additionality of the project. This long sentence is not understandable nor readable. The JI specific approach which includes elements of CDM Methodology ACM0002/Version 10 based on alternative scenarios consideration and estimation with help of the following stages that used in this PDD. It is incorrect since ACM0002 was used without any changes. Incorrect English. Conclusion on Response 4 The inadequacy was corrected appropriately.
2. Indication of UES Russia and fossil power plats of UES Russia is incorrect. It is stated on page 21: "CES "The North-West" is selected as a *project electricity system*".	22	Response 3 dated 17.06.10 Amendments were made to PDD. See p. 22	Conclusion on Response 3 The inadequacy was corrected appropriately.
3. Calculation of OM is incorrect (see excel file attached). An incorrect value of electricity production 9702,46 is taken for Vorkutinskaya CHPP-2. It should be 970,246. Then OM emission factor for 2007 will be 528 instead of 723 and average OM will be 574 instead of 635. Please correct accordingly.	Annex 2	Response 3 dated 17.06.10 Amendments were made to Annex 4 of the PDD. See file: Emission Reduction Calc (Nevskiy HPPs).xls	Conclusion on Response 3 The inadequacy was corrected appropriately.
4. Please include in calculation of OM (and BM if appropriate) 2 x K-215 of Pskov energy system.	Annex 2	Response 3 dated 17.06.10 Amendments were made to Annex 4 of the	Conclusion on Response 3 The inadequacy was corrected

Inadequacies requested by determination team to be corrected	Page No in PDD	Summary of project owner response	Determination team conclusion
		PDD. See file: Emission Reduction Calc (Nevskiy HPPs).xls	appropriately.
5. Calculation of BM is incorrect. Three power plants Rostov TPP-2, Volgodonsk TPP-2 and Astrakhan TPP-2 from URES "South of Russia" are included what is incorrect since export of electricity from another URES was not considered in OM calculations. Please recalculate BM based on 5 power plants of URES "North West" built most recently.	Annex 2	Response 3 dated 17.06.10 Amendments were made to PDD. See p. 56 Response 4 dated 22.06.10 Amendments were made to PDD. See p. 56	Conclusion on Response 3 Please correct names of power plants in Table Anx.2.10, page 56. Rostov Volgodonsk and Astrakhan TPP are mentioned instead of Vasileostrovskaya, Avtovskaya and Pravoberejnaya. Conclusion on Response 4 The inadequacy was corrected appropriately.
6. Calculation of baseline emissions is incorrect since the exact dates of turbines commissioning were not taken into consideration. These do not always fall on 1st January. As a result, baseline emissions are overestimated by 4%. Please refer to the excel file attached.	Annex 2	Response 3 dated 17.06.10 Amendments were made to Section A, Section C, Section E and Annex 2 of the PDD. See file: Emission Reduction Calc (Nevskiy HPPs).xls	Conclusion on Response 3 The inadequacy was corrected appropriately.
7. Data from Table 6 of Annex 2: "Background data for $EF_{grid, BM, y}$ calculation" are not used. Please remove the Table or upgrade it by including power plants of URES "North West" built most recently.	Annex 2	Response 3 dated 17.06.10 The data from the Table Anx. 2.9. (until updating was Table 6 of Annex 2) is used to calculation of Power unit CO_2 emission factor. Please see Table Anx. 2.10 p. 56	Conclusion on Response 3 The inadequacy was corrected appropriately.

Appendix B: Determination team's CV

Mr. Leonid Yaskin, PhD (thermal engineering)

Lead Verifier.

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 Krrzhizhanovsky Power Engineering Institute, All-Russian Teploelectroproject Institute, JSC Energoperspectiva. He worked for 8 years on behalf of European Commission as a monitor of Technical Assistance Projects. He is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). He performed over 250 audits since 2002. Also he is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered OHSAS 18001 Lead Auditor Training Course. He is an Assuror of Social Reports. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of over 60 JI projects.

Grigory Berdin. (accounting, analysis, inspection and audit)

Lead Verifier

Bureau Veritas Certification Rus – Lead Verifier.

He has over 4 years of experience in implementing of JI & CDM projects. He was developer of more than 10 PDDs in different sectors. He was responsible for supervision of technical implementation for more than 30 JI projects on regional natural gas leakage reduction at distribution pipelines and for 5 JI projects of other types. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and he was/is involved in the determination of over 10 JI projects.

Ivan G. Sokolov, Dr. Sci. (biology, microbiology)

Internal Technical Reviewer

Climate Change Lead Verifier, Bureau Veritas Certification Holding SAS Local Climate Change Product Manager for Ukraine.

He has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered), Quality Management System (IRCA registered), Occupational Health and Safety Management System, and Food Safety Management System. He performed over 140 audits since 1999. Also he is Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and Lead Tutor of the IRCA registered ISO 9000 QMS Lead Auditor Training Course. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and he is involved in the determination/verification of 26 JI projects.