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DETERMINATION ~~REPORT~~

LLC "LUKOIL- KUBANENERGO"

DETERMINATION OF THE
"EXPANSION OF KRASNODAR CHPP WITH
INSTALLATION OF CCP-410, LLC "LUKOIL-
KUBANENERGO", RUSSIAN FEDERATION"

REPORT No. RUSSIA-DET/0155/2011

REVISION No. 02

BUREAU VERITAS CERTIFICATION



Determination Protocol on JI project

“Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation”

Date of first issue: 28/08/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CCGS Limited	Client ref.: M. Yulkin
<p>Summary:</p> <p>Bureau Veritas Certification has made the determination of “Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation” project of the LLC “LUKOIL-Kubanenergo” located in city of Krasnodar, Krasnodarskiy Krai, Russian Federation on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.</p> <p>The determination scope is defined as an independent and objective review of the project design document, the project’s baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site 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.</p> <p>The first output of the determination process is a list of Corrective Actions Requests (CAR) and Clarification Requests (CL) presented in Appendix A. Taking into account this output, the project proponent revised its project design document.</p> <p>In summary, it is Bureau Veritas Certification’s opinion that the project correctly applies Guidance on criteria for baseline setting and monitoring and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.</p>	

Report No.: RUSSIA-det/0155/2011	Subject Group: JI	<input checked="" type="checkbox"/> No distribution without permission from the Client or responsible organizational unit
Project title: “Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation”		<input type="checkbox"/> Limited distribution
Work carried out by: Leonid Yaskin – Team Leader, Lead Verifier		<input type="checkbox"/> Unrestricted distribution
Work verified by: George Klenov – Internal Technical Reviewer		
Work approved by: Leonid Yaskin – Operational Manager		
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Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CCP	Combined Cycle Plant
CL	Clarification Request
CO ₂	Carbon Dioxide
DDR	Draft Determination Report
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
GHG	Greenhouse House Gas(es)
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
IES	Integrated Energy System
KCHPP	Krasnodar Combined Heat and Power Plant
NCSF	National Carbon Sequestration Foundation JSC
PDD	Project Design Document
RAO EES	Russian Joint Stock Company “United Energy System od Russia”
JSC	Joint Stock Company
PP	Project Participant
RF	Russian Federation
tCO ₂ e	Tonnes CO ₂ equivalent
UNFCCC	United Nations Framework Convention for Climate Change

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1 INTRODUCTION

CCGS Limited (hereafter referred ‘CCGS’) has commissioned Bureau Veritas Certification to determine “Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation” project of the LLC “LUKOIL- Kubanenergo” (hereafter referred ‘the project’) located in city of Krasnodar, Krasnodarskiy Krai, Russian Federation.

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 determination serves as project design verification and is a requirement of all projects. The determination is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), 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 emissions reductions 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, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

1.3 Determination team

The determination team consists of the following personnel:

Leonid Yaskin

Bureau Veritas Certification Team Leader, Climate Change Lead Verifier



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This determination report was reviewed by:

George Klenov
Bureau Veritas Certification, Internal reviewer

2 METHODOLOGY

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

In order to ensure transparency, a determination protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of determination and the results from determining 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 determiner will document how a particular requirement has been determined and the result of the determination.

The completed determination protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The original Project Design Document (PDD) v.1.0 dated 22/07/2011 submitted by the CCGS for determination and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for users of the joint implementation project design document form, Guidance on criteria for baseline setting and monitoring, Kyoto Protocol to be checked by an Accredited Independent Entity were reviewed and corrective action requests were reported.

To address Bureau Veritas Certification corrective action requests, CCGS revised the original PDD and resubmitted it as v.1.1 dated 24/08/2011, v.1.2 dated 25/08/2011.

The determination findings presented in this report relate to the project as described in the above mentioned versions of the PDD.



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2.2 Follow-up Interviews

On 25/08/2011 Bureau Veritas Certification conducted interviews with the project participant LLC “LUKOIL-Kubanenergo” and the consultant CCGS to confirm selected information about the technical and economic characteristics and parameters of the project and to clarify issues identified in the review of the PDD v.1.0 and v.1.1. Interviewees are listed in References. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Project participant LLC “LUKOIL-Kubanenergo”	<ul style="list-style-type: none"> • The project history; status of the projects as on today. • Confirmation of the starting date of the crediting period. • Equipment for monitoring of emission reduction. • EIA and conclusion of Glavgosexpertiza. • Operational and managerial structure of monitoring.
Consultant CCGS	<ul style="list-style-type: none"> • Calculation of the grid emission factor. • Investments analysis in the PDD. • Calculations of Emission Reduction in the PDD

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 clarified for Bureau Veritas Certification positive conclusion on the project design.

If Bureau Veritas Certification, in assessing the PDD and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to JI project requirements, it should raise these issues and inform the project participants of these issues in the form of:

- (a) Corrective action request (CAR), requesting the project participants to correct a mistake in the published PDD that is not in accordance with the (technical) process used for the project or relevant JI project requirement or that shows any other logical flaw;
- (b) Clarification request (CL), requesting the project participants to provide additional information for Bureau Veritas Certification to assess compliance with the JI project requirement in question;
- (c) Forward action request (FAR), informing the project participants of an issue, relating to project implementation but not project design, that needs to be reviewed during the first verification of the project.



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Bureau Veritas Certification should make an objective assessment as to whether the actions taken by the project participants, if any, satisfactorily resolve the issues raised, if any, and should conclude its findings of the determination.

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

3 PROJECT DESCRIPTION (quoted by PDD v.1.2)

Objective of the project

The project proposes to expand Krasnodar CHPP (KCHPP) of LLC “LUKOIL-Kubanenergo” with a view to enhancing efficiency and increasing electricity and heat generation as well as reducing greenhouse gas (GHG) emissions through introduction of up-to-date energy generation technologies based on a combined-cycle plant (CCP).

The project replaces a significant amount of electricity generated at less efficient power generating capacities of the Integrated Energy System of the South of Russia (IES South) and also makes it possible to discontinue heat production in the boiler houses.

Situation before the project

Krasnodar CHPP was put into operation in 1954 and was intended to cover heat and power demand of Krasnodar and the surrounding area. Currently, the installed electrical generating capacity of the CHPP is 744 MW, and the installed thermal generating capacity – 781 Gcal/h. The main fuel for Krasnodar CHPP is natural gas (98-99%), the backup fuel is heavy fuel oil (mazut).

The main energy generating equipment of Krasnodar CHPP features: a non-modular section consisting of six boilers and five steam turbines with the installed capacity of 159 MW, and a modular section consisting of four outdoor modules (a steam boiler and a turbine) with the installed capacity of 585 MW. The equipment of the non-modular section of KCHPP is heavily worn out.

Krasnodar Krai has a deficit power system; there are considerable power flows from the neighboring regions. The growth of heat demand is attributed to development of new residential areas.

Baseline scenario

The baseline scenario involves decommissioning of the most extensively worn-out equipment of the non-modular section of KCHPP.

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The lacking amount of electricity (lacking, that is, in comparison with the project scenario) would have been provided by third parties. Energy companies within IES South could have increased their power output by running their existing capacities and by building new power generating units. The lacking amount of heat (lacking, that is, in comparison with the project scenario) would have been provided by third parties with the help of their existing capacities and newly constructed gas boiler houses.

Project scenario

The CHPP is expanded through construction of a combined-cycle plant of CCP-410 type. The plant has the installed electrical capacity of 416.5 MW and the thermal capacity of steam turbine heat extraction of 220 Gcal/h.

The CCP-410 generating unit is a single-unit combined-cycle plant with three steam pressure circuits and intermediate superheating, intended for production of heat and electricity under base-load operation.

The main equipment of CCP-410 consists of:

- M701F4 gas turbine unit (GTU), 303.5 MWe, manufactured by Mitsubishi Heavy Industry, Ltd., Japan;
- three-pressure heat recovery boiler of Ep-307/350/47-13.0-565/560/247 type manufactured by OJSC “EMAlliance”, Russia;
- T-113/145-12.4 steam turbine manufactured by CJSC “Uralsky Turbine Manufacturing Plant”, Russia.

Upon commissioning of CCP-410, two of the five turbines (No.3 and No.5) of the non-modular section of the CHPP with the total generating capacity of 64 MW are to be decommissioned; the other three turbines remain functioning to allow for the operation of the plant’s common 8-13 ata steam header (there will be only one of the turbines running at a time). Thus, the new energy generating unit will substitute up to 64 MW of electrical capacity and up to 190 Gcal/h of thermal capacity of KCHPP in terms of hot water.

Natural gas will be the main and backup fuel for the CCP. The design electrical efficiency of the CCP when running in condensation mode is 57.4%. The implemented technologies meet up-to-date environmental standards.

Upon implementation of the project the new energy generating unit will start supplying energy to the grid of the IES South. Electricity generated by the new and more technologically efficient energy unit will substitute electricity that without the project would have been generated using less efficient technologies.

Heat produced by the new energy unit, besides substituting heat supply from KCHPP’s retired capacities, will be also intended to cover the growing heat

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demand of Krasnodar in 2011-2025. The demand is rising (based on the number of connections to the CHPP) by 21-160 Gcal/h in terms of hot water.

The expected results of the project:

- optimization of the energy generation scheme at the CHPP, enhancement of its reliability and cost effectiveness;
- re-equipment of the CHPP with installation of new and more efficient units which meet up-to-date environmental and technical requirements;
- increase in electricity and heat supply from KCHPP;
- higher efficiency of natural gas combustion;
- mitigation of negative environmental impact, including reduction in greenhouse gas emissions by 1130 ktCO₂e per year.

Connection of CCP-410 to the grid and completion of the comprehensive testing of the equipment is scheduled for August 30, 2011.

Project history

RAO “UES of Russia” (United Energy Systems of Russia) had started gearing up for implementation of the Kyoto mechanisms long before the Protocol was ratified by the Russian Federation. To this end a Non-Commercial Investment and Environmental Organization “Energy Carbon Fund” was set up in 2000.

The main results of the Fund’s operation are as follows:

- Together with RAO “UESR” it took a comprehensive survey of greenhouse gas emissions from energy sector covering the period from 1990 in accordance with the world standards, an emission inventory was created;
- A greenhouse gas emission monitoring system, including an accounting and reporting system, is up and running; emission inventories are developed;
- A number of joint implementation (JI) projects were prepared for approval by government authorities, some of these projects already have positive determination by international auditors; foreign investments were attracted for these projects;
- Together with regional energy generators, the Fund participated in international tenders for purchase of GHG emissions;
- “Greenhouse Gases”, an information analysis system, was developed and introduced at a number of regional energy companies;
- Projections of emission reductions of the Unified Energy System of Russia have been made;
- Several regulatory and methodological guidelines were issued and are in effect in the energy sector, including the method for calculation of GHG emissions from thermal power plants.



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In 2006-2007 the Fund evaluated several projects in terms of their potential for JI. The Krasnodar CHPP expansion project was put on the list of the investment projects of S&A of OJSC RAO “UES of Russia” that are implemented jointly in accordance with Article 6 of the Kyoto Protocol to the UNFCCC as of 25.06.2007.

In 2007 a preliminary estimation of the GHG emission reduction potential of the project “Expansion of Krasnodar CHPP with installation of CCP-410” was made and an inventory of GHG emissions originating from OJSC “SGC TGC-8” from 1990 through 2005 was taken [R6].

The project is included in the “Power Sector Facilities Allocation Scheme up to 2020 (Master Plan), developed by RAO “UES of Russia” in 2006. In the resolution part of the Order No.215-r dated 22.08.2008 the Russian Government approves the proposed Master Plan which is in fact a summarized investment programme based on the power sector facilities’ own plans.

Open Joint Stock Company “Southern Generating Company – TGC-8” was established on March 22, 2005. The sole founder of the Company was OJSC RAO “UES of Russia”. After completion of the restructuring of OJSC RAO “UES of Russia”, LUKOIL Group consolidated the controlling interest in OJSC “Southern Generating Company – TGC-8” and became the company’s strategic investor. Since May 4, 2008 OJSC “SGC TGC-8” is a part of LUKOIL Group. LLC “LUKOIL-Kubanenergo” was established in 2009 in the course of restructuring of TGC-8.

Since RAO “UES of Russia” ceased to operate, the company inherited the investment plans of RAO “UES of Russia”, however it is not under any obligation to follow them through. The Master Plan does not specify which companies’ facilities are included. Therefore if the commissioning of power capacities is not on schedule, the government cannot impose any penalties against any of these companies. This is further confirmed by the fact that actual commissioning dates and the capacities to be commissioned differ significantly from those specified in the Master Plan.

On April 28, 2008 (considered to be the starting date of the project) the company management signed a turnkey contract with OJSC “Group E4” No.163-08 [R7] for works on “Expansion of Krasnodar CHPP with installation of CCP-410” Project.

At the time of decision making the planned cost of the project implementation was estimated at RUR 16 754.87 million.

As shown above, when the company management decided to implement the project it considered from the very start a possibility to develop it as a car-

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bon project in order to attract required financial resources and to ensure acceptable return on investments. The issues related to preparation of the JI project documentation were discussed with different companies, and eventually in 2011 a contract was signed with CCGS.

4 DETERMINATION CONCLUSIONS

In the following sections, the conclusions of the determination are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up communications are described in the Determination Protocol in Appendix A.

The Clarification and Corrective Action Requests are stated, where appropriate, in the following sections and are further documented in the Determination Protocol in Appendix A. The determination of the Project resulted in 4 Corrective Action Requests and 2 Clarification Requests. 6 Requests for Information were issued as well.

The number between brackets at the end of each section corresponds to the DVM paragraph

4.1 Project approvals by Parties involved (19-20)

The project has no approvals by the parties involved. This was reported in CAR 01 which remains pending.

4.2 Authorization of project participants by Parties involved (21)

The participation of LLC “LUKOIL-Kubanenergo” listed as project participant in the PDD is not authorized by the Parties involved.

The authorization is deemed to be carried out through the issuance of the project approval.

4.3 Baseline setting (22-26)

PDD explicitly indicates that using a methodology for baseline setting and monitoring developed in accordance with appendix B of the JI guidelines (hereinafter referred to as JI specific approach) was the selected approach for identifying the baseline.

JI specific approach



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Section B.1 provides a detailed theoretical description of the baseline in complete and transparent manner as required by Guidelines for users of JI PDD Form Version 04.

The baseline is established basically:

/a/ By listing and describing future baseline scenarios available for the project participant and selecting the most likely scenario. Four alternative scenarios were listed as regards generation of electricity (E1-E4) and four as regards production of heat (H1-H4) as follows:

- E1. Generation of electricity by other existing power plants within the IES South;
- E2. Generation of electricity by other new energy generating units within the IES South;
- E3. Generation of electricity by other existing and newly commissioned power plants within the IES South;
- E4. The project activity without the joint implementation mechanism.
- H1. Production of heat by the existing heat production sources of Krasnodar;
- H2. Production of heat by new heat production sources of Krasnodar;
- H3. Production of heat by the existing and new heat production sources of Krasnodar;
- H4. The project activity without the joint implementation mechanism.

Based on alternatives analysis with taking into account the key factors in (b) below a conclusion is made in Section B.1 that the most likely baseline scenario is the following combination of Alternatives: Alternative E3 which assumes electricity generation and supply to the grid by the existing and new energy generating units within the IES South, and Alternative H3 which assumes heat production by the existing and new heat sources (boiler houses) of Krasnodar.

/b/ By taking into account key factors that affect a baseline, such as (i) energy sector reform policies and legislation – RF Resolution No 215-p dated 22/02/2008; (ii) growth in the Krasnodar district heating sector as well as predicted demand; (iii) availability of capital including investment barriers; (iv) local availability of technologies/techniques, skills and know-how – the project is not common practice; gas turbine and boiler are the imported equipment; (v) natural gas price and availability for Krasnodar CHPP; (vi) national and sub-national expansion plans for the energy sector in South of Russia.

/c/ Basically in a transparent manner with regard to the choice of approaches, assumptions (traced by a finder), methodologies, parameters, data sources and key factors.



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/d/ Taking into account of uncertainties and using conservative assumptions (use of natural gas in baseline boilers, neglect of auxiliary needs of baseline boilers, neglect of leakage, neglect of CH₄ and N₂O emission in the baseline).

/e/ In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure.

/f/ By drawing of the list of standard variables contained in appendix B to Guidance on criteria for baseline and monitoring.

Outstanding issues related to Baseline setting (22-26), PP’s response and the AIE conclusion are summarized in Appendix A (refer to CAR 02, CAR 03 and CL 01).

The issued CAR and CL concern:

- Conservativeness of not taking into account in the baseline description incomplete replacement of the KCHPP capacity by CPP (CAR 02);
- Including data for IES South (CRA 03);
- Specific fuel consumption for heat supply by CCP (CL 01).

4.4 Additionality (27-31)

The additionality is demonstrated by using the following approach: Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals.

Additionality proofs are provided through project alternatives analysis, investment analysis and common practice analysis.

Alternative analysis refers to baseline setting made in Section B.1. This analysis is not self-sufficient since the baseline is chosen with the use of the investment analysis of the project made in Section B.2.

Investment analysis considers calculation of project IRR and NPV at the discount rate 18% which was estimated with the use of the official “Guidelines on estimation of investment project efficiency”. Calculations were made using the general inflation rate, rate of growth of heat and electricity tariffs and rate of increase in natural gas prices for the IES South. The tariff growths were taken in accordance with the “Development Scenarios for the Russian Electric Power Sector for the years 2009-2020”.



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The AIE observes, that the use of tariffs dynamic forecast from “Concept of long-term social and economic development of Russian Federation for the period up to 2020“(approved by RF Government Resolution N 1662-p dated 17/10/2008) results in lower IRR and NPV. Hence, the results of the investment analysis can be considered conservative. These results demonstrate that the project IRR is less than the discount rate and NPV is negative. This implies that the project without JI registration is unprofitable. The sensitivity analysis with variation of main parameters by $\pm 10\%$ also confirms this conclusion.

Common practice analysis has pointed out that (i) projects to install CCP are not widely observed and commonly carried out in Russia; (ii) the CCP-410 does not have any counterparts anywhere in Russia; (iii) at the time of making the decision to implement the project there were no similar projects implemented in Russia without the JI mechanism. Thus the considered project is not common practice.

4.5 Project boundary (32-33)

JI specific approach

The project boundary encompasses all anthropogenic emissions by sources of greenhouse gases as listed in Table B.3-1 which are:(i) under the control of the project participants; (ii) reasonably attributable to the project; and (iii) significant.

The project boundary is defined on the basis of case-by-case assessment of different emission sources. All gases and sources included and excluded are explicitly stated.

The identified sources of the accountable emissions are:

- gas consumption at CCP-410 (project);
- fossil fuel consumption at power plants of the IES South and gas consumption boilers (baseline).

Delineation of the project boundary and the sources is described and justified in the PDD by using the Fig B.3.1 and B.3.2 and Table B.3.1.

Based on the assessment of the project documentation, the AIE hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

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4.6 Crediting period (34)

The PDD reports the starting date of the project as as April 28, 2008 being the date of signing the contract with OJSC “E4” for implementation of the project “Expansion of Krasnodar CGPP with installation of CCP-410”.

The PDD states the expected operational lifetime is 20 years or 240 months.

The PDD defines the length of the crediting period as 1.33 years and the starting date as 30/08/2011, which is on the date the first emission reductions or enhancements of net removals are generated by the project.

4.7 Monitoring plan (35-39)

The PDD, in its monitoring plan section, explicitly indicates that JI specific approach was the selected approach.

JI specific approach

The monitoring plan adequately specifies the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions to be monitored. The monitoring is in line with current operational routines.

The monitoring plan explicitly and clearly distinguishes:

- (i) 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, such as emission factors, boilers efficiency, and specific fuel consumption;
- (ii) N/A (refer to para 36 (d));
- (iii) Data and parameters that are monitored throughout the crediting period (please see above).

Sections D.1.1.1 and D.1.1.3 provide compilation of all data needed to monitor project and baseline emissions.

The monitoring plan describes:

- data to be monitored:
 - ID 1 – Volumetric consumption of natural gas by the CCP under the project;
 - ID 2 – Average net caloric value of natural gas combusted in the CCP;
 - ID 3 – Heat supply from the CCP under the project;
 - ID 4 – Electricity supply from the CPP under the project.
- the period in which these parameters will be monitored - bimonthly (2) or regularly (1, 3, 4).

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- all decisive factors for the control and reporting of project performance: 2tp statistics forms; quality control (QC) and quality assurance (QA) procedures; the operational and management structure that will be applied in implementing the monitoring plan.

Constants used are the default values of the parameters as follows:

- emission factor of natural gas (2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Chapter 2, Table 2.2)
- efficiency of new gas-fired boilers (Tool to determine the baseline efficiency of thermal or electric energy generation systems. Version 01. CDM Executive Board. P.7, Table 1);
- IES South grid emission factor (estimated with the use of own specific approach based on ORGRES data for power plants in the condensing mode).

Accuracy and reasonableness are carefully balanced in their selection. Uncertainty level of data is defined in Section D.2 as low. The default values originate from the recognized sources and are presented in a transparent manner.

The monitoring plan draws on the list of standard variables contained in appendix B of “Guidance on criteria for baseline setting and monitoring”.

The monitoring plan elaborates all algorithms and formulae used for the estimation/calculation of baseline emissions and project emissions. The underlying rationale for the algorithms/formulae is well explained. Consistent variables, equation formats, subscripts etc. are used. There is basic consistency between the elaboration of the baseline scenario and the procedure for calculating the baseline emissions.

Implicit and explicit assumptions are explained in a transparent manner. Most assumptions in the monitoring plan are specified and explained in Section B.1.

Monitoring plan refers to state statistic environmental forms 2-tp listed in the Section D.1.5.

QC/QA procedures are specified in sufficient detail in PDD Section D.2. These are routine enterprise procedures.

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The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Person responsible for monitoring is the Deputy Head of Tune-up and Test Shop. The Head of the Environmental Management Group of ISH&ED is in charge of supervision of fulfilment of the monitoring plan at the company. Monitoring techniques are in line with current operation routines at Russian power sector.

It is indicated in the Section D.3 that data will be kept for two years after the last ERU transfer under the project.

On the whole, the monitoring report reflects good monitoring practices appropriate to the project type.

4.8 Leakage (40-41)

JI specific approach

Leakage is conservatively neglected.

4.9 Estimation of emission reductions or enhancements of net removals (42-47)

JI specific approach

The PDD indicates the assessment of emissions in the baseline scenario and in the project scenario as the approach chosen to estimate the emission reductions generated by the project.

The PDD provides the ex-ante estimate of emission reduction from the project (within the project boundary), which is 1 506 976 tCO₂e for the crediting period.

The estimate referred to above is given:

- (a) On an annual basis;
- (b) From 30/08/2011 to 31/12/2012;
- (c) On a source-by-source basis;
- (d) For CO₂ as GHG emitted.
- (e) In tonnes of CO₂ equivalent.

The formulae used for calculating the estimates referred above, which are Formulae in Sections D.1.1.2 and D.1.1.4 are consistent throughout the PDD.

For calculating the estimates referred to above, key factors defined in the monitoring plain influencing the project and baseline emissions were taken into account, as appropriate.



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The estimation referred to above is based on conservative assumptions and the most plausible scenario in a transparent manner.

The PDD Section E includes an illustrative ex ante emissions calculation.

4.10 Environmental impacts (48)

Environmental impact assessment (EIA) is made in the designed documentation listed in the PDD. Impact upon surface waters, impact upon atmospheric air, environmental monitoring and environmental consequences of the project implementation are summarised in Section F.1. The project documentation has received a positive conclusion by Glavgosexpertiza.

4.11 Stakeholder consultation (49)

The public hearings for the project “Expansion of Krasnodar CHPP with installation of CCP-410” were held in Krasnodar on September 10, 2009. All comments made in the course of the hearings were accommodated and all questions were adequately answered.

4.12 Determination regarding small scale projects (50-57) (Not applicable)

4.13 Determination regarding land use, land-use change and forestry (LULUCF) projects (58-64) (Not applicable)

4.14 Determination regarding programmes of activities (65-73) (Not applicable)

5 SUMMARY AND REPORT OF HOW DUE ACCOUNT WAS TAKEN OF COMMENTS RECEIVED PURSUANT TO PARAGRAPH 32 OF THE JI GUIDELINES

No comments, pursuant to paragraph 32 of the JI Guidelines, were received.

6 DETERMINATION OPINION

Bureau Veritas Certification has performed a determination of the “Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation” project. The determination was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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The determination consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site interviews with project participants; iii) the resolution of outstanding issues and the issuance of the final determination report and opinion.

Using investment analysis and common practice analysis the project participants proved that the project activity itself is not the 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 the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria.

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. If the written approval and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 1.2 dated 25/08/2011 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

The determination is based on the information made available to us and the engagement conditions detailed in this report.

7 REFERENCES

Category 1 Documents:

Documents provided by CCGS that relate directly to the GHG components of the project.

/1/ “Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation”, PDD Versions 1.0, 1.1 and 1.2.

Supporting documentation:

- Model_Kuban_en_v 1.1 _24 08 2011.

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

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- /1/ JI Guidelines;
- /2/ Guidelines for Users of the JI PDD Form (Version 04), JISC;
- /3/ Guidance on criteria for baseline setting and monitoring (Version 02), JISC;
- /4/ List of Investment Projects of Subsidiaries of OJSC RAO “UES of Russia” implemented jointly in accordance with Article 6 of the Kyoto protocol to UNFCCC dated 25.06.2007;
- /5/ Report on completed works under Contract No.PI-48-2007 dated February 8, 2007. Moscow 2007 (including preliminary estimation of the emission reduction potential of the project “Expansion of Krasnodar CHPP through installation of CCP-410”). Non-profitmaking investment environmental organisation “Energy carbon fund”;
- /6/ Design Document. Section 1. Executive Summary. Expansion of Krasnodar CHPP through installation of CCP-410;
- /7/ Schedule of works under the project “Expansion of Krasnodar CHPP through installation of CCP-410”;
- /8/ Schedule of works under the project “Expansion of Krasnodar CHPP through installation of CCP-410” with updated last stages;
- /9/ Design Document. Section 8. List of environment protection measures. Expansion of Krasnodar CHPP through installation of CCP-410;
- /10/ Resolution of Krasnodar Municipal Administration No.2873 dated 17.08.2009 On sanctioning of public hearings in Krasnodar Municipality;
- /11/ Minutes of the public hearings dated 10.09.2009;
- /12/ RAO “UES of Russia” Methodological guidance on analysis of changes in specific fuel consumption at power plants and in power pool systems RD 34.08.559-96;
- /13/ Excel file containing calculation of the grid emission factor for the IES South;
- /14/ Federal Agency for Construction and Utilities Sector. Federal State Institution “Main Administration of State Expertise” Positive Conclusion of the State Expert Review No.527-09/GGE-6222/02. Object of State Review –Design document “Expansion of Krasnodar CHPP through installation of CCP-410”;
- /15/ 6-tp. Information on performance of thermal power plant for 2009. LLC “LUKOIL-Kubanenergo” Krasnodar CHPP;
- /16/ Contract No. 163-08 for turnkey works on the project “Expansion of Krasnodar CHPP through installation of CCP-410” dated April 28, 2008 between OJSC “Southern Generating Company – SGC TGC-8” and OJSC “E-4 Group”.

Persons interviewed:

List persons interviewed during the determination or persons that contributed with other information that are not included in the documents listed above.

- /1/ A. Bulatkin – LLC “LUKOIL- Kubanenergo” Deputy Chief Engineer.
- /2/ T. Brazhnikova – LLC “LUKOIL-Kubanenergo” Head of Environmental Management Group.
- /3/ A. Samorodov – CCGS Director of Project Development Department.
- /4/ D. Potashev – CCGS Chief Specialist of Project Development Department.



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DETERMINATION PROTOCOL

Table 1

Check list for determination, according JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (REVISION 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final conclusion
General description of the project				
Title of the project				
-	Is the title of the project presented?	The title of the project is presented. It is “Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation”.		OK
-	Is the sectoral scope to which the project pertains presented?	The indicated sectoral scope of the project is: (1) Energy industries (renewable/non-renewable sources),		OK
-	Is the current version number of the document presented?	Version: 1.0		OK
-	Is the date when the document was completed presented?	PDD dated July 22, 2011.		OK
Description of the project				
-	Is the purpose of the project included with a concise, summarizing explanation (max. 1-2 pages) of the: a) Situation existing prior to the starting date of the project; b) Baseline scenario; and c) Project scenario (expected outcome, includ-	The PDD formulates the purpose of the project as follows: “The project proposes to expand Krasnodar CHPP (KCHPP) of LLC “LUKOIL-Kubanenergo” with a view to enhancing efficiency and increasing electricity and heat generation as well as reducing greenhouse gas (GHG) emissions through introduction of up-to-date energy generation technologies		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	ing a technical description)?	<p>based on a combined-cycle plant (CCP).</p> <p>The project replaces a significant amount of electricity generated at less efficient power generating capacities of the Integrated Energy System of the South of Russia (IES South) and also makes it possible to discontinue heat production in the boiler houses”.</p> <p>Requirements a), b), c) to the content of Section A.2 are met.</p>		
-	Is the history of the project (incl. its JI component) briefly summarized?	<p>The history of the project (incl. its JI component) is summarized in sufficient detail on pages 4-5.</p> <p>In particular it is stated that in 2006-2007 the project was considered by RAO UES of Russia and then by OJSC “SGC TGC-8” which signed in April 2008, a turnkey contract for works on “Expansion of Krasnodar CHPP with installation of CCP-410”. Since May 4, 2008 TGC-8 is a part of LUKOIL Group. LLC “LUKOIL-Kubanenergo” being the project participant was established in 2009 in the course of restructuring of TGC-8.</p> <p>The Krasnodar CHPP expansion project was put on 25.06.2007 on the list of the investment projects of RAO UES of Russia to be implemented as JI. In 2007 a preliminary estimation of the GHG emission reduction potential of the project “Expansion of Krasnodar CHPP with installation of CCP-410” was made.</p>	Pending	OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		RFI 01. Please provide the AIE a documented evidence of the above mentioned facts.		
Project participants				
-	Are project participants and Party(ies) involved in the project listed?	The Party and project participant involved in the project are listed as follows: - Party A the Russian Federation and its legal entity Limited Liability Company “LUKOIL-Kubanenergo”; - Party B is not defined.		OK
-	Is the data of the project participants presented in tabular format?	The data of the project participant are presented in due tabular format.		OK
-	Is contact information provided in Annex 1 of the PDD?	Contact information is provided in Annex 1 of the PDD.		OK
-	Is it indicated, if it is the case, if the Party involved is a host Party?	Russian Federation is indicated as Host Party.		OK
Technical description of the project				
Location of the project				
-	Host Party	Russian Federation.		OK
-	Region/State/Province etc.	Location of the project: Russian Federation, Krasnodar Krai, Krasnodar, LLC “LUKOIL-Kubanenergo”, premises of Krasnodar CHPP.		OK
-	City/Town/Community etc.	The city of Krasnodar.		OK
-	Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	The city of Krasnodar allows the unique identification of the project.		OK
Technologies to be employed, or measures, operations or actions to be implemented by the project				

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
-	Are the technology(ies) to be employed, or measures, operations or actions to be implemented by the project, including all relevant technical data and the implementation schedule described?	Section A.4.2 outlines main technologies to be employed including relevant technical data and the implementation schedule. Data on specific consumption of referenced fuel per 1 kWh and 1 Gcal supplied by CCP-410 is provided in Section B.2.		OK
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				
-	Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	It is explained in Section A.4.3 that the project GHG emission reductions will be mainly due to using state-of-the-art combined-cycle technology for substitution of grid electricity that is generated within the IES South mainly using less efficient steam-turbine technology. Also, emission reductions will be achieved due to substitution of less efficient (compared with the co-generation of heat and electricity in CCP) gas-fired boiler houses which otherwise would be built or expanded in the absence of the project.		OK
-	Is it provided the estimation of emission reductions over the crediting period?	The estimation of emission reductions over the crediting period is provided.		OK
-	Is it provided the estimated annual reduction for the chosen credit period in tCO ₂ e?	The estimated annual reduction for the chosen credit period is provided in tCO ₂ e.		OK
-	Are the data from questions above presented in tabular format?	The data from questions above are presented in tabular format. Refer to Table A.4.3.1.		OK
-	Is the length of the crediting period Indicated?	The length of the crediting period is indicated as 1,33 years (14 months).		OK
-	Are estimates of total as well as annual and average annual emission reductions in tonnes	Total as well as annual and average annual emission reductions in tonnes of CO ₂ equivalent are provided.		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	of CO2 equivalent provided?			
Project approvals by Parties				
19	Have the DFPs of all Parties listed as “Parties involved” in the PDD provided written project approvals?	CAR 01. The project has no written approvals by the Parties involved. Information of the project approval by a party involved other than the host Party is not provided. The project approval by the Host Party will be provided after the determination statement is issued by the AIE.	CAR 01	Pending
19	Does the PDD identify at least the host Party as a “Party involved”?	Host Party involved is the Russian Federation.		OK
19	Has the DFP of the host Party issued a written project approval?	Conclusion is pending a response to CAR 01.	Pending	Pending
20	Are all the written project approvals by Parties involved unconditional?	Yes, the written project approvals by Parties involved are unconditional.		OK
Authorization of project participants by Parties involved				
21	Is each of the legal entities listed as project participants in the PDD authorized by a Party involved, which is also listed in the PDD, through: – A written project approval by a Party involved, explicitly indicating the name of the legal entity? or – Any other form of project participant authorization in writing, explicitly indicating the name of the legal entity?	The project participant LLC “LUKOIL-Kubanenergo” will likely be authorized with the issue of the project approval by the Host Party. Conclusion is pending a response to CAR 01.	Pending	Pending
Baseline setting				
22	Does the PDD explicitly indicate which of the	It is explicitly indicated in the PDD Section B.1 that a JI spe-		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	following approaches is used for identifying the baseline? – JI specific approach – Approved CDM methodology approach	cific approach is applied according to the Guidance on criteria for baseline setting and monitoring, version 02 (hereafter referred Guidance). <i>Most plausible scenario</i> to be selected per Guidance is replaced in the PDD by the <i>most likely scenario</i> . The AIE considers this acceptable.		
JI specific approach only				
23	Does the PDD provide a detailed theoretical description in a complete and transparent manner?	Section B.1 provides a detailed theoretical description of the baseline in complete and transparent manner as required by Guidelines for users of JI PDD Form Version 04. The key information and data used to establish the baseline are provided in the required tabular forms. CAR 02. Alternative E3 (baseline for electricity production) does not take into account that “upon commissioning of CCP-410, two of the five turbines (No.3 and No.5) of the non-modular section of the CHPP with the total generating capacity of 64 MW are to be decommissioned... Thus, the new energy generating unit will substitute up to 64 MW of electrical capacity and up to 190 Gcal/h of thermal capacity of KCHPP in terms of hot water” (end of quotation). This implies that not all electric energy generation by CCP-410 will replace the electricity supply from the IES South. The theoretical description of the baseline in Section B.1 does not take this situation into account as well. Please assess con-	CAR 02 CAR 03 CL 01	OJ OK OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>servativeness of this approach.</p> <p>CAR 03. Information in sub-section Alternative E1 relates to Russia as a whole. Please include data for IES South.</p> <p>CL 01. Specific consumption of equivalent fuel for heat supply from the CCP is taken 29.94 kg e.f./GJ from the design data. The value equals $29.94 \times 7000 \times 4.187 = 0.848$ GJ fuel / 1 GJ heat. This implies thermal efficiency over 100%. Please explain the method of calculating this parameter. AIE observes that the parameter in question is not used in the monitoring plan and is needed just for ex ante illustrative estimation of project emission in Section E.1.</p>		
23	<p>Does the PDD provide justification that the baseline is established:</p> <p>(a) By listing and describing plausible future scenarios on the basis of conservative assumptions and selecting the most plausible one?</p> <p>(b) Taking into account relevant national and/or sectoral policies and circumstance?</p> <p>– Are key factors that affect a baseline taken into account?</p> <p>(c) In a transparent manner with regard to the choice of approaches, assumptions, methodologies, parameters, data sources and key factors?</p> <p>(d) Taking into account of uncertainties and</p>	<p>The baseline is established:</p> <p>/g/ By listing and describing future baseline scenarios available for the project participant and selecting the most likely scenario. Four alternative scenarios were listed as regards generation of electricity (E1-E4) and four as regards production of heat (H1-H4) as follows:</p> <p>E1. Generation of electricity by other existing power plants within the IES South;</p> <p>E2. Generation of electricity by other new energy generating units within the IES South;</p> <p>E3. Generation of electricity by other existing and newly commissioned power plants within the IES South;</p> <p>E4. The project activity without the joint implementation mechanism.</p>		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<p>using conservative assumptions?</p> <p>(e) In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure?</p> <p>(f) By drawing on the list of standard variables contained in appendix B to “Guidance on criteria for baseline setting and monitoring”, as appropriate?</p>	<p>H1. Production of heat by the existing heat production sources of Krasnodar;</p> <p>H2. Production of heat by new heat production sources of Krasnodar;</p> <p>H3. Production of heat by the existing and new heat production sources of Krasnodar;</p> <p>H4. The project activity without the joint implementation mechanism.</p> <p>Based on alternatives analysis with taking into account the key factors in (b) below a conclusion is made in Section B.1 that the most likely baseline scenario is the following combination of Alternatives: Alternative E3 which assumes electricity generation and supply to the grid by the existing and new energy generating units within the IES South, and Alternative H3 which assumes heat production by the existing and new heat sources (boiler houses) of Krasnodar.</p> <p>/h/ By taking into account key factors that affect a baseline, such as (i) energy sector reform policies and legislation – RF Resolution No 215-p dated 22/02/2008; (ii) growth in the Krasnodar district heating sector as well as predicted demand; (iii) availability of capital including investment barriers; (iv) local availability of technologies/techniques, skills and know-how – the project is not common practice; gas turbine and boiler are the imported equipment; (v) natural gas price and availability for Krasnodar CHPP; (vi) national and sub-national expansion plans for the energy sector in South of</p>		



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>Russia.</p> <p>/i/ Basically in a transparent manner with regard to the choice of approaches, assumptions (traced by a finder), methodologies, parameters, data sources and key factors.</p> <p>/j/ Taking into account of uncertainties and using conservative assumptions (use of natural gas in baseline boilers, neglect of auxiliary needs of baseline boilers, neglect of leakage, neglect of CH4 and N2O emission in the baseline).</p> <p>/k/ In such a way that ERUs cannot be earned for decreases in activity levels outside the project or due to force majeure.</p> <p>/l/ By drawing of the list of standard variables contained in appendix B to Guidance on criteria for baseline and monitoring.</p>		
24	If selected elements or combinations of approved CDM methodologies or methodological tools for baseline setting are used, are the selected elements or combinations together with the elements supplementary developed by the project participants in line with 23 above?	N/A		OK
25	If a multi-project emission factor is used, does the PDD provide appropriate justification?	The grid emission factor for IES South is estimated with the use of own specific approach based on ORGRES data for power plants in condensing mode. AIE considers this approach as the most accurate among different ones used by PDD developers.		OK
Approved CDM methodology approach only_Paragraphs 26(a) – 26(d)_Not applicable				



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Additionality				
JI specific approach only				
28	Does the PDD indicate which of the following approaches for demonstrating additionality is used? (a) Provision of traceable and transparent information showing the baseline was identified on the basis of conservative assumptions, that the project scenario is not part of the identified baseline scenario and that the project will lead to emission reductions or enhancements of removals; (b) Provision of traceable and transparent information that an AIE has already positively determined that a comparable project (to be) implemented under comparable circumstances has additionality; (c) Application of the most recent version of the “Tool for the demonstration and assessment of additionality (allowing for a two-month grace period) or any other method for proving additionality approved by the CDM Executive Board”.	The PDD indicates that approach (a) is used.		OK
29 (a)	Does the PDD provide a justification of the applicability of the approach with a clear and transparent description?	The PDD reads: “Within the framework of the chosen approach the additionality of the project is proven using the project alternatives analysis, investment analysis and common practice analysis”.		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
29 (b)	Are additionality proofs provided?	<p>Additionality proofs are provided through project alternatives analysis, investment analysis and common practice analysis.</p> <p>Alternative analysis refers to baseline setting made in Section B.1. This analysis is not self-sufficient since the baseline is chosen with the use of the investment analysis of the project made in Section B.2.</p> <p>Investment analysis considers calculation of project IRR and NPV at the discount rate 18% which was estimated with the use of the official “Guidelines on estimation of investment project efficiency”. Calculations were made using the general inflation rate, rate of growth of heat and electricity tariffs and rate of increase in natural gas prices for the IES South. The tariff growths were taken in accordance with the “Development Scenarios for the Russian Electric Power Sector for the years 2009-2020”. The AIE observes, that the use of tariffs dynamic forecast from “Concept of long-term social and economic development of Russian Federation for the period up to 2020“(approved by RF Government Resolution N 1662-p dated 17/10/2008) results in lower IRR and NPV. Hence, the results of the investment analysis can be considered conservative. These results demonstrate that the project IRR is less than the discount rate and NPV is negative. This implies that the project without JI registration is unprofitable. The sensitivity analysis with variation of main parameters by $\pm 10\%$ also confirms this conclusion.</p>	Pending	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		<p>Common practice analysis has pointed out that (i) projects to install CCP are not widely observed and commonly carried out in Russia; (ii) the CCP-410 does not have any counterparts anywhere in Russia; (iii) at the time of making the decision to implement the project there were no similar projects implemented in Russia without the JI mechanism. Thus the considered project is not common practice.</p> <p>RFI 02. Please provide the AIE a documented evidence of the input data (investment cost by years, tariffs for 2011, other process costs) used in the investment analysis.</p>		
29 (c)	Is the additionality demonstrated appropriately as a result?	With pending RFI 02 the additionality is not demonstrated.	Pending	OK
30	If the approach 28 (c) is chosen, are all explanations, descriptions and analyses made in accordance with the selected tool or method?	N/A		OK
Approved CDM methodology approach only_ Paragraphs 31(a) – 31(e)_ Not applicable				
Project boundary (applicable except for JI LULUCF projects)				
JI specific approach only				

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
32 (a)	Does the project boundary defined in the PDD encompass all anthropogenic emissions by sources of GHGs that are: (i) Under the control of the project participants? (ii) Reasonably attributable to the project? (iii) Significant?	The project boundary defined in the PDD encompasses main anthropogenic emissions by sources of GHGs that are (i) under the control of the project participants, (ii) reasonably attributable to the project, and (iii) significant. The identified sources of the accountable emissions are: gas consumption at CCP-410 (project); fossil fuel consumption at power plants of the IES South and gas consumption boilers (baseline).		OK
32 (b)	Is the project boundary defined on the basis of a case-by-case assessment with regard to the criteria referred to in 32 (a) above?	Project boundary is defined on the basis of case-by-case assessment of different emission sources.		OK
32 (c)	Are the delineation of the project boundary and the gases and sources included appropriately described and justified in the PDD by using a figure or flow chart as appropriate?	Delineation of the project boundary and the sources is described and justified in the PDD by using the Fig B.3.1 and B.3.2 and Table B.3.1.		OK
32 (d)	Are all gases and sources included explicitly stated, and the exclusions of any sources related to the baseline or the project are appropriately justified?	All gases and sources included are explicitly stated; refer to 32 (a) above. All exclusions made are appropriate as conservative assumptions or logic assumptions based on data from IPCC V.2.Ch2.		OK
Approved CDM methodology approach only_Paragraph 33_ Not applicable				
Crediting period				
34 (a)	Does the PDD state the starting date of the project as the date on which the implementation or construction or real action of the project will begin or began?	The project's starting date is indicated as April 28, 2008 being the date of signing the contract with OJSC “E4” for implementation of the project “Expansion of Krasnodar CGPP with installation of CCP-410”.	Pending	OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		RFI 03. Please provide the AIE a documented evidence of the date.		
34 (a)	Is the starting date after the beginning of 2000?	Yes.		OK
34 (b)	Does the PDD state the expected operational lifetime of the project in years and months?	Operational lifetime is defined as 20 years or 240 months.		OK
34 (c)	Does the PDD state the length of the crediting period in years and months?	The length of crediting period is defined as 1.33 years (16 months).		OK
34 (c)	Is the starting date of the crediting period on or after the date of the first emission reductions or enhancements of net removals generated by the project?	Starting day is August 30, 2011 – being the date of the first emission reductions generated by the project.		OK
34 (d)	Does the PDD state that the crediting period for issuance of ERUs starts only after the beginning of 2008 and does not extend beyond the operational lifetime of the project?	The crediting period is defined as from 30/08/2011 to 31.12.2012.		OK
34 (d)	If the crediting period extends beyond 2012, does the PDD state that the extension is subject to the host Party approval? Are the estimates of emission reductions or enhancements of net removals presented separately for those until 2012 and those after 2012?	N/A		OK
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used?	It is explicitly indicated that a JI specific approach is chosen.		OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	<ul style="list-style-type: none"> – JI specific approach – Approved CDM methodology approach 			
JI specific approach only				
36 (a)	<p>Does the monitoring plan describe:</p> <ul style="list-style-type: none"> – All relevant factors and key characteristics that will be monitored? – The period in which they will be monitored? – All decisive factors for the control and reporting of project performance? 	<p>The monitoring plan describes:</p> <ul style="list-style-type: none"> - data to be monitored: <ul style="list-style-type: none"> ID 1 – Volumetric consumption of natural gas by the CCP under the project; ID 2 – Average net caloric value of natural gas combusted in the CCP; ID 3 – Heat supply from the CCP under the project; ID 4 – Electricity supply from the CPP under the project. - the period in which these parameters will be monitored - bimonthly (2) or regularly (1, 3, 4). - all decisive factors for the control and reporting of project performance: 2tp statistics forms; quality control (QC) and quality assurance (QA) procedures; the operational and management structure that will be applied in implementing the monitoring plan. 		OK
36 (b)	<p>Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?</p>	<p>The monitoring plan generally specifies indicators, constants and variables used that are basically reliable, valid and provide transparent picture of the emission reductions to be monitored.</p> <p>For data to be monitored, please refer to 36(a) above.</p> <p>For constants please refer to the next paragraph.</p>		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (b)	If default values are used: <ul style="list-style-type: none"> – Are accuracy and reasonableness carefully balanced in their selection? – Do the default values originate from recognized sources? – Are the default values supported by statistical analyses providing reasonable confidence levels? – Are the default values presented in a transparent manner? 	Constants used are the default values of the parameters as follows: <ul style="list-style-type: none"> - emission factor of natural gas (2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Chapter 2, Table 2.2) - efficiency of new gas-fired boilers (Tool to determine the baseline efficiency of thermal or electric energy generation systems. Version 01. CDM Executive Board. P.7, Table 1); - IES South grid emission factor (estimated with the use of own specific approach based on ORGRES data for power plants in condensing mode). Accuracy and reasonableness are carefully balanced in their selection. The default values originate from the recognized sources (see above) and are presented in a transparent manner.		OK
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	N/A		OK
36 (b) (ii)	For other values, <ul style="list-style-type: none"> – Does the monitoring plan clearly indicate the precise references from which these values are taken? – Is the conservativeness of the values provided justified? 	The monitoring plan provides clearly indicates the precise references from which these default values are taken. Please refer to 36 (b) above.		OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	All necessary procedure were described in the PDD (See the PDD, p. 38).		OK
36 (b) (iv)	Are International System Unit (SI units) used?	International System Units (SI units) are used.		OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	N/A		OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	There is consistency between parameters, coefficients, variables, etc. used in baseline and monitoring plan.		OK
36 (c)	Does the monitoring plan draw on the list of standard variables contained in appendix B of “Guidance on criteria for baseline setting and monitoring”?	The monitoring plan draws on the list of standard variables contained in appendix B of “Guidance on criteria for baseline setting and monitoring”.		OK
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) 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? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determina-	Description of the monitoring plan in Section D.1 explicitly and clearly distinguishes: (i) Refer to 36 (b). (ii) N/A. (iii) Refer to 36 (a).		OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	tion? (iii) Data and parameters that are monitored throughout the crediting period?			
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	Most of methods employed for data monitoring are described appropriately in the monitoring plan, including recording frequency, proportion of data to be monitored, and how will the data be archived.		OK
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	The monitoring plan elaborates all algorithms and formulae used for the estimation/calculation of baseline emissions and project emissions. Please refer to Sections D.1.1.4 and D.1.1.2 respectively.		OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	The underlying rationale for the algorithms/formulae does not need explanation.		OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Consistent variables, equation formats, subscripts etc. are used.		OK
36 (f) (iii)	Are all equations numbered?	Yes.		OK
36 (f) (iv)	Are all variables, with units indicated defined?	Yes.		OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	N/A		OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	N/A		OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the	There is basic consistency between the elaboration of the baseline scenario and the procedure for calculating the baseline emissions.	Pending	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	baseline ensured?	Conclusion is pending a response to CAR 02.		
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	N/A.		OK
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Yes, the monitoring is in line with current operational routines.		OK
36 (f) (vii)	Are references provided as necessary?	Yes.		OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	Implicit and explicit assumptions are explained in a transparent manner. Most assumptions in the monitoring plan are specified and explained in Section B.1.		OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty associated with them, and how such uncertainty is to be addressed?	N/A		OK
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	Uncertainty level of data is defined in Section D.2 as low.		OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	Monitoring plan refers to state statistic forms 2-tp listed in the Section D.1.5.		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	Please refer to 36 (g).		OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made available upon request?	QC/QA procedures are specified in sufficient detail in PDD Section D.2. These are routine enterprise procedures.		OK
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	The monitoring plan clearly identifies the responsibilities and the authority regarding the monitoring activities. Person responsible for monitoring is the Deputy Head of Tune-up and Test Shop. The Head of the Environmental Management Group of ISH&ED is in charge of supervision of fulfilment of the monitoring plan at the company.		OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring techniques are in line with current operation routines at Russian power sector.		OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	Sections D.1.1.1 and D.1.1.3 provide compilation of all data needed to monitor project and baseline emissions.		OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project?	It is indicated in the Section D.3 that data will be kept for two years after the last ERU transfer under the project.		OK
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	N/A		OK
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable				
Applicable to both JI specific approach and approved CDM methodology approach_Paragraph 39_Not applicable				
Leakage				
JI specific approach only				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	Leakage is conservatively neglected (refer to Section B.1).		OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	N/A.		OK
Approved CDM methodology approach only_Paragraph 41_Not applicable				
Estimation of emission reductions or enhancements of net removals				
42	Does the PDD indicate which of the following approaches it chooses?	Approach (a) is clearly indicated by the scope of Section 6.		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions			
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	Yes, ex ante estimates of project emissions, baseline emissions and emission reduction are provided in Section E. Calculations are made on the excel spreadsheet.		OK
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A		OK

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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
45	<p>For both approaches in 42</p> <p>(a) Are the estimates in 43 or 44 given:</p> <p>(i) On a periodic basis?</p> <p>(ii) At least from the beginning until the end of the crediting period?</p> <p>(iii) On a source-by-source/sink-by-sink basis?</p> <p>(iv) For each GHG?</p> <p>(v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol?</p> <p>(b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout the PDD?</p> <p>(c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate?</p> <p>(d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent?</p> <p>(e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully bal-</p>	<p>(a) Estimates in 42 are given:</p> <p>(i) for 2011 (H2) and 2012 only;</p> <p>(ii) Yes;</p> <p>(iii) On a source-by-source basis;</p> <p>(iv) For the only GHG CO2;</p> <p>(v) In tones of CO2 equivalent;</p> <p>(b) The formulae used for calculating the estimates in 43 are consistent throughout the PDD;</p> <p>(c) For calculating estimates in 43, key factors influencing the baseline emissions and the activity level of the project and the emissions associated with the project are taken into account, as appropriate;</p> <p>(d) Data sources used for calculating the estimates in 43 are clearly identified, reliable and transparent;</p> <p>(e) Yes as regards natural gas emission factor, boiler efficiency, and grid emission factor.</p> <p>(f) Yes;</p> <p>(g) The estimates in 43 are consistent throughout the PDD;</p> <p>(h) Yes.</p>		OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	ancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	Illustrative ex-ante estimation of emission reduction is made on the excel spreadsheet made available to AIE.		OK
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	Environmental impact assessment (EIA) is made in the designed documentation listed in the PDD. Impact upon surface waters, impact upon atmospheric air, environmental monitoring and environmental consequences of the project implementation are summarised in Section F.1.	Pending	OK



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DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		RFI 04. Please provide the Environmental impact assessment to the AIE.		
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	The project received a positive conclusion of Glavgosexpertiza Rossii. RFI 05. Please provide the Glavgosexpertiza conclusion to the AIE.	Pending	OK
Stakeholder consultation				
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments? (c) A description on whether and how the comments have been addressed?	The public hearings for the project “Expansion of Krasnodar CHPP with installation of CCP-410” were held in Krasnodar on September 10, 2009. All comments made in the course of the hearings were accommodated and all questions were adequately answered. CAR 04. Please include in PDD a list of stakeholders from whom comments on the projects have been received. Please describe the nature of the comments. Please describe whether and how the comments were addressed.	CAR 04	OK
Determination regarding small-scale projects (additional elements for assessment) Paragraphs 50 - 57 Not applicable				
Determination regarding land use, land-use change and forestry projects Paragraphs 58 – 64(d) Not applicable				
Determination regarding programmes of activities Paragraphs 66 – 73 Not applicable				

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Table 2 Resolution of Requests for Corrective Action (CAR), Forward Action (FAR), Clarification (CL) and Information (RFI)

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project participant response	Determination team conclusion
<p>CAR 01. The project has no written approvals by the Parties involved. Information of the project approval by a party involved other than the host Party is not provided</p>	19	N/A	
<p>CAR 02. Alternative E3 (baseline for electricity production) does not take into account that “upon commissioning of CCP-410, two of the five turbines (No.3 and No.5) of the non-modular section of the CHPP with the total generating capacity of 64 MW are to be decommissioned... Thus, the new energy generating unit will substitute up to 64 MW of electrical capacity and up to 190 Gcal/h of thermal capacity of KCHPP in terms of hot water” (end of quotation). This implies that not all electric energy generation by CCP-410 will replace the electricity supply from the IES South. The theoretical description of the baseline in Section B.1 does not take this situation into account as well. Please assess conservativeness of this approach.</p>	23	<p><u>Response 1 dated 24/08/2011</u></p> <p>The equipment that is substituted due to the project is designed for operation under certain parameters, prior to the project implementation most of electricity at KCHPP had been generated in condensation cycle. The equipment of the non-modular section is known to have lower efficiency by virtue of lower input steam parameters than the grid power plants have on average, and therefore it has a higher GHG emission factor than the IES South (as follows from calculations provided below, $EF_{KCHPP} = 784.75$ kgCO₂/MWh). Therefore following the conservative approach, in the PDD all substituted electric energy was attributed to the IES South.</p>	<p><u>Conclusion on Response 1</u></p> <p>Response 1 s not accepted.</p> <p>According to received document №8, the averaged fuel consumption at KCHPP in 2004-2008 was 387 gut/kWh.</p> <p>According to received document №10 (form 6-tp), the fuel consumption at KCHPP in 2009 was 382.5 gut/kWh.</p> <p>GHG emission factor equals $387 \times 29.3 \times 0.0561 = 636$ kgCO₂/MWh.</p> <p>This is lower than 674.5 kgCO₂/MWh</p>



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	<p><u>Calculation of the emission factor for the non-modular section of CHPP</u></p> <p>The emission factor is calculated by the following formula, kg CO2/MWh:</p> $EF_{KCHPP} = 3.6 \times \frac{EF_{CO2,NG}}{\eta_i^r \times \eta_{em} \times \epsilon_{tr} \times \eta_{KCHPP,boilers} \times (1 - \epsilon_e^{aux})}$ <p>3.6 is the conversion factor of MW to GJ;</p> <p>$EF_{CO2,NG}$ is the CO₂ emission factor for natural gas, kgCO2/GJ;</p> <p>η_i^r is the absolute internal efficiency of turbine units of the non-modular section of KCHPP under condensation mode with allowance for regeneration;</p> <p>η_{em} is the electromechanical efficiency;</p> <p>ϵ_{tr} is the heat transportation factor (from boiler to turbine);</p> <p>$\eta_{KCHPP,boilers}$ is the efficiency of gas boilers of KCHPP;</p> <p>ϵ_e^{aux} is the specific consumption of electricity for auxiliary needs of KCHPP.</p>	<p>for IES South. Hence, conservatism of the neglect is not provided.</p> <p>CAR is not closed.</p> <p><u>Conclusion on Response 2</u></p> <p>Response is accepted.</p> <p>CAR is closed based on due argumentation in the response.</p>
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	<p>In accordance with [2006 IPCC Guidelines on National Greenhouse Gas Inventories. Volume 2, Energy], $EF_{CO_2,NG} = 56.1 \text{ kgCO}_2/\text{GJ}$.</p> <p>The absolute internal efficiency of turbine units of the non-modular section of KCHPP in condensation mode with allowance for regeneration is calculated in accordance with the methodology provided in [B.V. Sazanov, V.I. Sitas. Thermal Energy Systems of Industrial Facilities. - M.: Energoatomizdat, 1990.], $\eta_i^r = 0.32422$.</p> <p>The efficiency of old gas boilers of KCHPP in accordance with recommendations [Methodological tool to determine the baseline efficiency of thermal or electric energy generation systems”. Version 01. CDM Executive Board] was assumed at $\eta_{KCHPP,boilers} = 0.87$.</p> <p>The specific electricity consumption for auxiliary needs of the power plant were assumed at $\varepsilon_e^{aux} = 0.05$. This value is conservative because the real consumption of electricity for auxiliary needs of KCHPP is somewhat higher. See the attached file #10.</p> <p>In accordance with the recommendations of [V.Y.Ryzhkin. Thermal Power Plants. - M.: Ener-</p>	
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		<p>goatomizdat, 1987.]: $\eta_{em} = 0.98$; $\varepsilon_{tr} = 0.98$.</p> <p>By inserting the above values of parameters in the above formula we get the following value: $EF_{KCHPP} = 784.75 \text{ kgCO}_2/\text{MWh}$.</p> <p>Besides, a justification of the new emission factor for the IES South was included in the PDD (See Annex 4) and the PDD and the calculation model were corrected correspondingly. The excel file with calculation of the new factor has been provided to the AIE. (file #8).</p> <p><u>Response 2 dated 25/08/2011</u></p> <p>As shown in the Executive Summary of the project (file #1, p. 15) when describing the situation prior to the project implementation: “At the present moment turbine No.3 is in a standby mode because there are no consumers of steam at 8-13 ata, and turbine No.2 is only 30% loaded because there are no consumers of steam at 1.2-2.5 ata”.</p> <p>Steam extraction parameters of turbine No.5 are also 1.2-2.5 ata.</p> <p>Besides, the expected remaining life of turbines as of early 2009 (See Table 4.1 of the Executive Summary, p.p. 14 and 15) was 7530 hours for turbine No.3 and 11348 hours for turbine No.5.</p> <p>Thus, firstly, these turbines would not have been loaded even in the absence of the project be-</p>	
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		cause there are no steam consumers for corresponding steam pressure, and secondly, the useful life of the turbines has been almost completely used up and they should be taken out of operation in any case.	
CAR 03. Information in sub-section Alternative E1 relates to Russia as a whole. Please include data for IES South.	23	Information on the IES South has been added to the PDD (See the PDD p. 17)	CAR is closed based on due amendment made to the PDD.
CAR 04. Please include in PDD a list of stakeholders from whom comments on the projects have been received. Please describe the nature of the comments. Please describe whether and how the comments were addressed.	49	<p><u>Response 1 dated 24/08/2011</u></p> <p>Public hearings were sanctioned by the resolution of Krasnodar Municipal Administration dated 17.08.2009 No.2873 “On sanctioning of public hearings in Krasnodar Municipality” (See file #5) and were held on September 10, 2009.</p> <p>Format: meeting of the commission for public hearings regarding assessment of the impact of the proposed expansion of Krasnodar CHPP through installation of CCP-410 on the environment and residents of Krasnodar. The number of comments made in oral and written form – 5. (See file #6). Based on the comments additional environmental research was undertaken and later on reviewed and approved by Glavgosexpertiza of the Russian Federation.</p> <p>The list of stakeholders from whom comments on the projects have been received has been added to the PDD (See p.47).</p> <p><u>Response 2 dated 25/08/2011</u></p>	<p><u>Response 1 is not accepted.</u></p> <p>Please include in PDD a list of stakeholders from whom comments on the projects have been received. Please describe the nature of the comments.</p> <p>CAR is not closed.</p> <p><u>Conclusion on Response 2</u></p> <p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>



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		The list of stakeholders from whom comments on the projects have been received has been added to the PDD (See p.47 and Annex 5).	
<p>CL 01. Specific consumption of equivalent fuel for heat supply from the CCP is taken 29,94 kg e.f./GJ from the design data. The value equals $29.94 \times 7000 \times 4,187 = 0,848$ GJ fuel / 1 GJ heat. This implies thermal efficiency over 100%. Please explain the method of calculating this parameter. AIE observes that the parameter in question is not used in the monitoring plan and is needed just for ex ante illustrative estimation of project emission in Section E.1.</p>	23	<p>All input data on specific consumption of equivalent fuel by the designed CCP were assumed on the basis of the design documentation elaborated by a third party. It is very difficult to find out which method of calculation they have used. However there is a methodological guidance on analysis of changes in specific fuel consumption at power plants and in power pool systems RD 34.08.559-96 (file #7). This methodology gives an example of calculation of specific fuel consumption, from which it follows that the specific fuel consumption for heat supply from CHPP can be lower than 143 kg/Gcal (34 kg/GJ) which gives reasons to believe that the value of specific fuel consumption provided in the PDD is sufficiently realistic.</p>	<p>CL is closed based on the appropriate clarification.</p> <p>The low fuel rate per heat supply is indeed the consequences of using the mentioned official methodology which intends to assign more fuel consumption to electricity generation (social and tariffs factors related policy).</p>

Determination Protocol on JI project

“Expansion of Krasnodar CHPP with installation of CCP-410, LLC “LUKOIL-Kubanenergo”, Russian Federation”

<p>RFI 01. Please provide the AIE a documented evidence of the above mentioned facts.</p>	-	<p><u>Response 1 dated 24/08/2011</u> All information on the parameters and operation modes of the CCP used in the PDD was taken from the Executive Summary of the design documentation (The Executive Summary has been provided to the AIE – file #1).</p> <p><u>Response 2 dated 25/08/2011</u> The list of the investment projects of RAO UES of Russia to be implemented as JI have been provided to the AIE (file #12). It is also available at: http://www.carbonfund.ru/projects/ps0/</p> <p>A preliminary estimation of the GHG emission reduction potential of the project “Expansion of Krasnodar CHPP with installation of CCP-410” have been provided to the AIE (file #13).</p>	<p>Response 1 is not accepted since no documented evidence was provided as regards the facts as follows (refer to the Determination Protocol):</p> <p>In 2006-2007 the project was considered by RAO UES of Russia. The Krasnodar CHPP expansion project was put on 25.06.2007 on the list of the investment projects of RAO UES of Russia to be implemented as JI. In 2007 a preliminary estimation of the GHG emission reduction potential of the project “Expansion of Krasnodar CHPP with installation of CCP-410” was made.</p> <p>RFI is closed.</p>
<p>RFI 02. Please provide the AIE a documented evidence of the input data (investment cost by years, tariffs for 2011, other process costs) used in the investment analysis.</p>	29 (b)	<p>Data for the investment analysis were assumed on the basis of Section 1.3 “Feasibility parameters and efficiency of investments” of the Executive Summary (file #1).</p>	RFI is closed.
<p>RFI 03. Please provide the AIE a documented evidence of the date.</p>	34 (a)	<p>Contract #163-08 dated 28 April 2008 and the schedules of works under the project have been provided to the AIE (files #11, #2 and # 3).</p>	RFI is closed.
<p>RFI 04. Please provide the Environmental impact assessment to the AIE</p>	48 (a)	<p>The environmental impact assessment has been provided to the AIE (file #4).</p>	RFI is closed.
<p>RFI 05. Please provide the Glavgosexpertiza conclusion to the AIE.</p>	48 (b)	<p>Glavgosexpertiza conclusion has been provided to the AIE (file #9).</p>	RFI is closed.
<p>Additional</p>	N/A	<p>Mail dated 24/08/2011.</p>	RFI is met.



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<p>RFI 06. Please provide determinable references to the sources of data for Power Plants as per document №8 (mail dated 24/08/2011).</p>		<p>The calculations use the performance data of the IES South’s power plants on specific fuel consumption in condensation mode, supply of electricity in condensation cycle and fuel consumption structure in 2004-2008. These data are taken from the official reports of power plants which prior to 2008 had been submitted to the Engineering Center of RAO UES of Russia – ORGRES. The data for calculations have been provided by LLC “NPK ORGRES”.</p> <p><u>Response 2 dated 25/08/2011</u> Data of ORGRES used for IES South grid emission factor calculation have been provided to the AIE</p>	<p>To determine the value of IES South grid emission factor please provide the used OGRGES data.</p> <p>Data is received and checked. RFI is closed.</p>
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