



DETERMINATION REPORT

DETERMINATION
OF THE
JSC “USTKUTNEFTEGAS” (UKNG)

“ASSOCIATED PETROLEUM GAS
FLARING REDUCTION AT YARAKTA
OIL FIELD, IRKUTSK REGION,
RUSSIA”

BUREAU VERITAS CERTIFICATION

REPORT No. RUSSIA/0062-2/2010, v.1



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Date of first issue: 05/05/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: JSC UstKutNefeGas” (UKGN)	Client ref.: Mr J. Ginzburg
Summary:	
<p>Bureau Veritas Certification has carried out, under Track 1, the determination of the project “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia” on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI guidelines and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.</p> <p>The project is aimed at the implementation of stage 2 of gas processing plant (GPP) at the Yarakta oil field in the Irkutsk Region of Russia. GPP will process Associated Petroleum Gas (APG) from the oil field operations to produce LPG for selling at regional markets and dry gas part of which will be injected into the gas reservoir for long-term storage and other part will be used on-site for own energy needs. In the absent of the project, the APG would be flared. The project includes also construction of the necessary infrastructure to (1) transport APG to the GPP, (2) to transport LPG from the GPP to market and (3) to re-inject dry gas.</p> <p>The determination scope is defined as an independent and objective review of the project design document, the project’s baseline, monitoring plan and other relevant documents, and consists of the following three phases: i) desk review of the project design document and particularly the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final determination report and opinion. The overall determination, from Contract Review to Determination Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.</p> <p>The first output of the determination process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A, Table 5. Taking into account this output, the project proponent has revised its project design document. The project has not yet received the approval from the host Party.</p> <p>In summary, it is Bureau Veritas Certification’s opinion that the project applies the appropriate baseline and monitoring approach and meets the relevant UNFCCC requirements for the JI and the relevant host country criteria.</p>	

Report No.: RUSSIA/0062-2/2009	Subject Group: JI
Project title: “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”	
Work carried out by: Leonid Yaskin – Team Leader, Lead verifier 	
Work verified by: Ivan Sokolov - Internal reviewer 	
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Determination Report on JI project
“Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Abbreviations

AIE	Accredited Independent Entity
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CL	Clarification Request
CO ₂	Carbon Dioxide
DDR	Draft Determination Report
DR	Document Review
ECF	Energy Carbon Fund
EIA	Environmental Impact Assessment
ERU	Emission Reduction Unit
GHG	Greenhouse House Gas(es)
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
MoV	Means of Verification
NPV	Net Present Value
PDD	Project Design Document
PP	Project Participant
RF	Russian Federation
tCO ₂ e	Tonnes CO ₂ equivalent
UKNG	JSC UstKutNefteGas
UNFCCC	United Nations Framework Convention for Climate Change

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Table of Contents		Page
1	INTRODUCTION	4
1.1	Objective	4
1.2	Scope	4
1.3	GHG Project Description	5
1.4	Determination team	9
2	METHODOLOGY.....	9
2.1	Review of Documents	11
2.2	Follow-up Interviews	12
2.3	Resolution of Clarification and Corrective Action Requests	13
3	DETERMINATION FINDINGS	13
3.1	Project Design	14
3.2	Baseline and Additionality	14
3.3	Monitoring Plan	15
3.4	Calculation of GHG Emissions	15
3.5	Environmental Impacts	16
3.6	Comments by Local Stakeholders	16
4	COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS	16
5	DETERMINATION OPINION	16
6	REFERENCES	18

Appendix A: Determination Protocol

Appendix B: Determination Team’s CV’s

Determination Report on JI project
“Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

1 Introduction

JSC “UstKutNefteGas” (hereafter referred as ‘UKNG’) has commissioned Bureau Veritas Certification (hereafter referred as ‘BVC’) to determine its JI project “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia” (hereafter referred as ‘the project’). GreenStream Network Plc being PDD developer coordinated the project and the determination process on behalf of UKNG.

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

1.1 Objective

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

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

1.2 Scope

The determination scope is defined as an independent and objective review of the project design document (PDD), the project's baseline study (BLS) and monitoring plan (MP) and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements for Joint Implementation (JI) projects, JI guidelines, in particular the verification procedure under the JI Supervisory Committee, JISC Guidance on criteria for baseline setting and monitoring, Guidelines for users of JI PDD Form, and associated interpretations.

Bureau Veritas Certification has, based on the recommendations in the Validation and Verification Manual (IETA/PCF), employed a risk based approach in the determination process, focusing on the identification of significant risks for project implementation and generation of ERUs.

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

Determination Report on JI project
"Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

1.3 GHG Project Description (quoted by PDD v.6 Section A.2)

Purpose of the Project:

JSC UstKutNefteGas (UKNG) is proposing the construction of stages three and four of its gas processing plant (GPP) at the Yarakta oil field in the Irkutsk Region of Russia. The project allows UKNG to produce Liquefied Petroleum Gas (LPG). In addition, UKNG is constructing the necessary infrastructure to (1) transport Associated Petroleum Gas (APG) to the GPP, (2) to transport LPG from the GPP to market and (3) to re-inject additional volumes of the remaining dry gas.

The project will allow UKNG to avoid the flaring of associated petroleum gas (APG) from the oil field operations. The project will also allow UKNG to produce LPG not only from the APG but also from the natural gas, which is found in a gas reservoir within the Yarakta oil field. The LPG will be sold to regional markets as a separate product. Some of the remaining dry gas will be used on-site for electric power generation and other energy uses. The remainder of the dry gas will be re-injected into the gas reservoir. By re-injecting the dry gas from APG the gas will be available for future use.

Project Company:

UKNG is 100% controlled by Irkutsk Oil Company (IOC) and its affiliated structures which is a regional private Russian oil company based in Irkutsk. UKNG is operating two oil fields in the Irkutsk Region, namely; Yarakta and Markovo oil fields. Via its subsidiaries IOC is holding production licences for four oil fields and exploration licenses for another seven oil and gas fields, all of which are located in Irkutsk Oblast. In addition to the Yarakta and Markovo fields, the Danilovskoye and Ayanskoye fields are in production.

Situation existing prior to the starting date of the project

Oil:

In the oil portion of the Yarakta field, UKNG is currently operating the following surface facilities and infrastructure in addition to the oil wells:

- An Oil Treatment Plant (OTP) with an APG flare, which was commissioned in 2009;
- A Temporary Intermediate Booster Pump Station (BPS) with an APG flare, which was commissioned in 2008;
- Power generation equipment capable of combusting condensate or diesel fuel;
- An intra-field pipeline network that is used for transportation of various oil & gas products;
- An inter-field oil pipeline from the Yarakta to the Markovo field with a capacity of 350,000 (metric) tonnes per year. There is also a pipeline from the Markovo field to Ust-Kut, from where the oil is shipped to Asian markets.

APG:

APG is produced at the Oil Treatment Plant and the Temporary Intermediate Booster Pump Station as a by-product of the crude oil production process. The APG is separated from the oil and stripped of its condensate content. Thereafter, a portion of the APG is

 Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

combusted in the boilers and technical ovens of the OTP. The remainder is flared to 100%, due to a lack of alternative utilization options.

Natural Gas:

The Northern portion of the Yarakta oil field is capped by a natural gas reservoir. UKNG has operated several natural gas wells and a small gas treatment facility on a trial basis since September 2005. The company is planning to commission a larger GPP in September of 2010. At that point the GPP will separate wet condensate (C5+ with a relatively high content of C3 and C4). The condensate will be mixed with the oil from the Yarakta field for shipment to markets. Most of the remaining dry gas will be re-injected into the natural gas reservoir. The gas turbine that drives the re-injection compressor will be fuelled using some of the dry gas. Dry gas will also be used as fuel for boilers, technical ovens and power generation equipment at the GPP.

Baseline scenario:

In the absence of the project, UKNG would continue the existing situation, even though the oil, APG and natural gas volumes would increase significantly over time, as shown in Table 1. In 2008 oil production at the Yarakta oil field was approximately 200,000 metric tonnes of crude oil, but production will reach more than 3 million metric tonnes per year in 2018. In order to accommodate the increasing oil production volumes and the growing number of oil wells, UKNG would also construct a New Booster Pump Station. The Temporary Intermediate Booster Pump Station would remain in operation for the treatment of oil with high mercaptan content at Well No.70.

Yarakta Oil Field Production Volumes									
2007	2009	2010	2011	2012	2015	2018	2021	2023	2025
Crude Oil Production (1,000 metric tonnes)									
	312	559	787	1,302	2,712	2,900	2,577	1,842	1,193
Natural Gas Production (million m ³)									
	29.4	186.5	267.8	445.2	412.8	386.1	425.5	417.0	408.7
APG Production (million m ³)									
	52.5	94.0	132.2	218.7	455.7	487.2	432.9	309.5	200.4

Table 1: Yarakta Oil and Gas Production Volumes

APG volumes are directly tied to the oil production and therefore do not vary between the baseline and project scenarios. In the absence of the project UKNG would continue to flare most of the APG that is extracted, i.e. the portion that cannot be used in the boilers and technical ovens of the OTP.

Natural gas volumes also do not vary between the baseline and the project. In the absence of the project UKNG would still invest in the larger gas processing plant (with low temperature separation technology) and increase the natural gas production in order to

 Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

separate condensate. No LPG would be produced, since the natural gas does not contain a high enough share of propane and butane.

Project scenario:

The project proposed by UKNG consists of pieces of equipment.

- (1) The construction of a 30 km APG pipeline from the OTP and BPS to the GPP
- (2) The construction of two APG compressor stations that are located in separate buildings close to the OTP and the BPS. Items (1) and (2) allow UKNG to transport APG to the GPP for processing and re-injection.
- (3) The construction of condensate stabilization unit, including column one for stabilizing condensate and column two for separating LPG. This allows UKNG to separate propane and butane for the production of LPG from both APG and natural gas.
- (4) The drilling of an additional gas re-injection well.
- (5) The construction of two additional re-injection compressors. Items (4) and (5) allow UKNG to re-inject the dry gas from APG in addition to the dry gas from natural gas.
- (6) The construction of an LPG storage facility at the Yarakta field, an LPG Pipeline from the Yarakta field to Ust-Kut and an LPG Transshipment facility at Ust-Kut. This allows UKNG to transport the LPG via pipeline and rail to the regional markets.

From July 2011, the above investments allow UKNG to transport APG to the GPP for processing. Most of the remaining dry gas will be re-injected into the natural gas reservoir. The gas turbine that drives the re-injection compressor will be fuelled using some of the dry gas. Dry gas will also be used as fuel for boilers, technical ovens and power generation equipment at the GPP.

From October 2012, the above investments will also allow UKNG to produce LPG from natural gas and APG and transport it by pipeline and rail to the regional markets. The LPG will be sold on the domestic market substituting other fuels.

The production volumes of oil, APG and natural gas will not be affected by the project.

Table 2 presents a comparison of the baseline and project scenario:

	Baseline	Project
Oil & Gas Extraction		
Oil	Sale	Sale
APG (after condensate has been stripped)	Some on-site energy use in boilers and technical ovens of the OTP	Some on-site energy use in boilers and technical ovens of the OTP
	Flaring	Production of LPG (propane/butane mix)
		Production of dry gas

 Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

		<ul style="list-style-type: none"> • for power generation • for use in boilers and technical ovens at the GPP • for use in the gas turbine that drives the re-injection compressor • for re-injection
Natural Gas	Production of condensate for mixing with oil	Production of condensate for mixing with oil
	Production of dry gas (incl. propane and butane) <ul style="list-style-type: none"> • for power generation • for use in boilers and technical ovens at the GPP • for use in the gas turbine that drives the re-injection compressor • for re-injection 	Production of LPG (propane/butane mix) for sale Production of dry gas <ul style="list-style-type: none"> • for power generation • for use in boilers and technical ovens at the GPP • for use in the gas turbine that drives the re-injection compressor • for re-injection
Purchased Condensate	Mixing with oil	No purchase

Table 2: Comparison of Baseline and Project Scenario

History of the project:

The Yarakta field was discovered in 1969, and its exploration was completed in 1978. Until 1992 the field was abandoned. IOC was established in 2000 and gradually acquired full ownership of UKNG between October 2001 and February 2008. The production license for the Yarakta oil field is valid until December 2033. Thereafter it is subject to the extension provisions under Russian law.

UKNG's first Field Development Plan (FDP) was submitted in December 2003 and approved in February 2004. The FDP did not include any processing of APG nor did it include any development of the gas portion of the Yarakta oil field. In September 2005 UKNG started natural gas production and processing on a trial basis in a small-scale facility. UKNG's second Field Development Plan that was developed by Schlumberger was submitted in February 2007 and approved in March 2007. This second FDP included the construction of a Gas Processing Plant and the installation of re-injection equipment, thus enabling the processing of APG and the production of natural gas. A third FDP was submitted in December 2008 and approved in February 2009. There were no material changes, only a postponement of the implementation timeline to December 2009. The

Determination Report on JI project
"Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

loan agreement with the European Bank for Reconstruction and Development (EBRD) was signed in March 2009.

The project's potential to generate CO₂ emission reductions was considered and estimated at an early stage of the decision-making process. The GHG emission reduction potential was included in EBRD's Board Review Document (April 2008) as a monitoring benchmark and the Carbon Mandate Letter between UKNG and GreenStream was signed on September 19, 2008. The host country letter of approval is expected after completion of the determination process.

1.4 Determination team

The determination team consists of the following personnel:

Leonid Yaskin
Bureau Veritas Certification – Team member, Lead Verifier.

Ivan Sokolov
Bureau Veritas Certification – Internal Technical Reviewer.

2. Methodology

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

The determination consisted of the following three phases:

- i) desk review of the project design document and the baseline and monitoring plan;
- ii) interview with the project owner on 01/03/2010 and on-line interactions with PDD developer throughout the determination process;
- iii) resolution of outstanding issues (ref. to Appendix A Table 5 with CAR's and CL's) and the issuance of the final determination report and opinion.

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

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

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

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

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



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

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

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

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

Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

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

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

Figure 1 Determination protocol tables

2.1 Review of Documents

Bureau Veritas Certification (BVC) signed the contract with the client on 14/09/2009. On 05/03/2010, Project Design Document (PDD) Version 01 dated 04/03/2010 was received which was published on BV Rus site on 22/03/2010 available for public comments within 20/04/2010.

The PDD Version 01 as well as additional background documents related to the project design, baseline, and monitoring plan, such as Kyoto Protocol, host Country laws and regulations, JI guidelines, JISC Guidance on criteria for baseline setting and monitoring, and Guidelines for users of the JI PDD Form were reviewed.

The first deliverable of the document review was the Draft Determination Report (DDR) Version 1 dated 30/03/2010.

Following interviews with project participants held on 08/04/2010, an amended PDD Version 2 dated 09/-4/2010 was issued which contained 16 CARs and 5 CL.

 Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

In the process of implementation of corrective actions, Green Stream issued consequently PDD Version 01.2 dated 18/03/2010 and Version 03.0 dated 04/06/2010.

The determination findings presented in this Determination Report Version 1 and Appendix A relate to the project as described in the PDD Version 01 (published) and Version 03.0 (final).

2.2 Follow-up Interviews

Bureau Veritas Certification verifier Leonid Yaskin conducted on 09/04/2010 a conference call with UKNG and GreenStream. Interviews were conducted to confirm the selected information and to clarify some issues identified in the document review. The interview topics are listed in Table 6. The interviewees are listed in Section 6 References. Following the interviews, on-line interactions with project stakeholders took place to resolve pending CARs and CLs.

Table 6 Interview topics

Date / Interviewed organization	Interview topics
09/04/2010 UKNG GreenStream	<ul style="list-style-type: none"> ➤ History of the project including JI component. Stages 1 and 2. ➤ Implementation schedule. ➤ Starting date of the project (the date on which the implementation or construction or real action of the project has begun). ➤ Operational lifetime of the project. ➤ Technical design documentation. ➤ Distinctions of the project activity from similar activities. Common practice consideration. ➤ IRR of the project as per the feasibility study and technical design in comparison with investment analysis in PDD. Breakdown of investment costs. Distinguishing between APG (project) and NG (baseline) related investment costs. ➤ Operational and management structure. ➤ Environmental Impact Assessment Documentation. ➤ Permits for air emissions. ➤ Stakeholders' comments. ➤ Training programmes for GPP and compressor operators. ➤ CARs and CLs in Determination Protocol. Critical issues.

Determination Report on JI project
"Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

2.3 Resolution of Clarification and Corrective Action Requests

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

Corrective Actions Requests (CAR) are issued, where:

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

Clarification Requests (CL) are issued where

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

DDR Version 2 summarising Bureau Veritas Certification's findings of the review of PDD Version 01.2 included 16 Corrective Action Requests and 5 Clarification Request.

The amendments made by GreenStream to the PDD and reported in PDD Version 03.0 satisfactorily addressed the verifier' requests. As a result, the Determination Report Version 1 was issued on 17/06/2010 and sent, together with the final PDD Version 03.0, to BVC Internal Technical Reviewer (ITR) for review.

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

3 Determination Findings

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

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

Determination Report on JI project
"Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

3.1 Project Design

The project is aimed at reduction of APG flaring by its processing at a constructed Gas Processing Plant which will produce dry gas, LPG and condensate. GPP will process both the project APG and natural gas. The latter does not belong to the JI project.

The project technology is the-state-of-art. The following processes are distinguished as key components of the JI project:

1. Transportation of APG from the Buster Pump Station and Oil Treatment Plant to GPP.
2. Mixing of APG with Natural Gas at the GPP.
3. Separation;
 - From July 2011 to October 2012: Separation of gas mix (APG and natural gas): Separation into two fractions: stabilized condensate (C5+) and dry gas (C1-C4).
 - From October 2012: Separation of gas mix (APG and natural gas) into three fractions: condensate (C5+), LPG (C3/C4, with substantial shares of C5+ and C1/C2) and dry gas (mostly C1/C2).
4. Transportation and delivery of LPG to regional markets;
5. Re-injection of the dry gas from APG into the gas reservoir. Before July 2011 only dry gas from natural gas can be re-injected.
6. Utilization of dry gas from APG as fuel for boilers and technical ovens at the GPP, as fuel for electric power generation equipment and as fuel for the gas turbine that drives the injection compressor. Before July 2011 only dry gas from natural gas can be used as fuel.

The project includes construction of the condensate stabilization unit (two columns), infrastructure for transportation of APG to GPP, additional wells and equipment for injection of dry gas, LPG storage and transportation facilities.

The project is expected to provide the reduction of GHG emissions by 588,349 tCO₂e over the crediting period 2011-2012.

The identified areas of concern as to Project Design, PP's response and BV Certification's conclusion are summarised in Appendix A Table 5 (refer to CAR 01 - CAR 04). The project has no approvals by the Parties involved, therefore CAR 01 remains pending.

3.2 Baseline and Additionality

A JI specific approach regarding baseline setting has been developed in accordance with Appendix B of the JI Guidelines and JISC Guidance on criteria for baseline setting and monitoring (Version 02) (hereafter referred as JISC Guidance). This specific approach uses selected elements of the approved CDM Methodology AM0009 (version 04).

To establish the baseline, AM0009 was applied as a guidance. 9 scenarios were listed including the project without JI registration. Following their assessment and screening, only two scenarios left as viable – "Project" and "Flaring, Only Natural Gas Processing". How-

Determination Report on JI project
“Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

ever, the project scenario was shown to be not financially attractive. Therefore the flaring scenario was identified as the most viable, hence representing the baseline scenario.

To justify additionality, the four steps from the CDM Additionality Tool [6] were closely followed. Benchmark analysis and sensitivity analysis clearly demonstrated that the project activity without JI registration is not financially attractive. The IRR benchmark of 14% was justified for the applied no-inflation financial model. This value is observed as reasonable from the standpoint of the official “Methodological Recommendations” [7].

Common practice analysis reasonably concluded that proposed project, i.e. APG processing for LPG production and dry gas re-injection, is the first of kind in Irkutsk geographical area.

The identified areas of concern as to Baseline and Additionality, PP’s responses and BV Certification’s conclusions are summarised in Appendix A Table 5 (refer to CAR 05 – CAR 11).

3.3 Monitoring Plan

A JI specific approach regarding monitoring has been developed with the use of selected elements of AM0009 (Version 04).

Project emissions are attributed to two sources: electricity consumption for APG compressors and leaks from re-injection pipeline. The sources of baseline emissions are: consumption of fossil fuel replaced by LPG (from APG), consumption of fossil fuel replaced by condensate (from APG), and flaring of APG prevented by production of dry gas re-injected into the gas reservoir. The monitoring plan envisages measurement of volume of all the APG derivatives (dry gas, LPG, condensate). The applied approach allows to exclude sources of project emissions due to the use of dry gas for own needs of GPP and re-injection since they are taken into account in the description of the baseline.

Quality control and quality assurance procedures are explained subject to checking during verification. Allocation of responsibilities within UKNG for monitoring plan implementation and monitoring report preparation are clearly described.

The identified areas of concern as to Monitoring Plan, PP’s response and BV Certification’s conclusion are described in Appendix A Table 5 (refer to CAR 12 – CAR 14).

3.4 Calculation of GHG Emissions

Formulae used for calculation of project are presented in PDD Section D. Input data for calculations and the calculations per se are presented on the spreadsheet made available to NBV by GreenStream. The verifiers observe the final calculations as accurate. The results are summarised in Section E for each source of emissions.

Determination Report on JI project
"Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

The calculated amount of project emission reduction over the crediting period 2011 - 2012 is 588,349 tCO₂e.

3.5 Environmental Impacts

The Field Development Plan for the Yarakta field, which includes an environmental section, was approved by the Central Resource Committee (CRC) of the Russian Federation in 2007 and 2008. In November 2009 the project company received a positive opinion from GlavGosExpertise/ A further environmental impact assessment was conducted by the company ERM in end 2008.

The identified area of concern as to Environmental Impacts, PP's response and BV Certification's conclusion are summarized in Appendix A Table 5 (refer to CAR 15).

3.6 Comments by Local Stakeholders

From 2005 to 2008 UKNG successfully completed the public discussion of the proposed project that is required by Russian law. Among other methods of disclosure, public hearings were conducted, access to pre-design materials for the proposed project was provided, and discussions were held with representatives of local communities regarding the main design solutions and environmental protection measures. The project was supported by the local stakeholders.

The identified area of concern as to Comments by Local Stakeholders, PP's response and BV Certification's conclusion are summarised in Appendix A Table 5 (refer to CAR 16).

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

In line with the Section E "Verification procedure under the Article 6 Supervisory Committee" of the JI guidelines, Bureau Veritas Certification published the PDD Version 3.1 on BV Rus site on 22/03/2010 and invited comments within 20/04/2010. No comments were received.

5 DETERMINATION OPINION

Bureau Veritas Certification has been engaged by JSC "UstKutNefteGas" to perform a determination of the JI project "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia". The determination was performed on the basis of UNFCCC criteria for JI projects, in particular the verification procedures under the JI Supervisory Committee, as well as host country criteria and the criteria given to provide for consistent project operations, monitoring and reporting.

The determination is based on the information made available to us and on the engagement conditions detailed in this report. The determination has been performed using a risk-based approach as described above. The only purpose of the report is its use for the formal approval of the project under JI mechanism. Hence, Bureau Veritas Certification can-



Determination Report on JI project
“Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

not be held liable by any party for decisions made or not made based on the determination opinion, which will go beyond that purpose.

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

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

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

The determination revealed two pending issues related to the current determination stage of the project: the issue of the written approval of the project and the authorization of the project participant by the host Party (Russian Federation). If the written approval and the authorization by the host Party are awarded, it is our opinion that the project as described in the Project Design Document, Version 6 dated 27/04/2010 meets all the relevant UNFCCC requirements for the determination stage and the relevant host Party criteria.

Bureau Veritas Certification thus recommends the project “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia” for the formal approval by the RF Ministry for Economic Development as the JI project in accordance with the RF Government Decree # 843 dated 28/10/2009 and the Order of the Ministry for Economic Development # 485 dated 23/11/2009.

Bureau Veritas Certification Holding SAS
17 June 2010

A handwritten signature in blue ink, appearing to read 'Leonid Yaskin'.

Leonid Yaskin – Team Leader, Lead Verifier

Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

6 REFERENCES

Reviewed document or type of Information referred to in Appendix A

1	PDD "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia", Version 01.2, dated 18 March 2010. Excel sheet "IOC Emission Reductions" dated 17 March 2010. Excel sheet "Investment Analysis".
2	Guidelines for Users of JI PDD Form. Version 04. JISC.
3	Glossary of JI Terms. Version 02. JISC
4	AM0009 Recovery and utilisation of gas from oil wells that would otherwise flared or vented, Version 04, Baseline and monitoring methodology, CDM EB.
5	Guidance for criteria for baseline setting and monitoring/Version 01, JISC.
6	Tool for the demonstration and assessment of additionality, Version 05.2, CDM Methodological Tool.
7	"Methodological Recommendations on Evaluation of Investment Projects Efficiency 21.06.1999 N BK 477
8	"Regulation of realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change". Approved by the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".

Reviewed document or type of information obtained at the site visit

9	Conclusion by GlavGosExpertise of RF #676-09/ГГЭ-6349/02 on the Yarakta field project.
10	License agreement on the conditions of subsoil use at Yarakta oil-condensate field. 2007. Annex to the licence ИПК 01162.
11	Permit for emissions granted to UKNG by Rostekhnadzor, #EN-257, 23/03/2010.
12	Permission for construction Yarakta oil field complex. ИПК 3000001 – YBC/C dated 04.02.2010
13	Project documentation. Volume 1. Explanatory Note. 2009
14	Project documentation. Volume 6. Measures on environment protection.2009
15	Project documentation. Volume 11. Technical-Economical indicators. 2009
16	Project documentation. Volume 12. EIA. 2009
17	Explanatory Note from conference call on 09/04/2010.

Persons interviewed:

1	Ya.. Ginzburg. – UKNG, Risk Manager
2	L. Chernyavskaya - UKNG, Chief Technologist
3	E. Durnykh – UKNG, Technologist
4	J. Wiesmann - GreenStream Network plc, Consultant
5	E. Depova - GreenStream Network plc, Local representative.

 Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

APPENDIX A: COMPANY JI PROJECT DETERMINATION PROTOCOL

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

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

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
		other than the host Party(ies), should be provided to the AIE and made available to the secretariat by the AIE when submitting the first verification report for publication in accordance with paragraph 38 of the JI guidelines, at the latest.	
2. Emission reductions, or an enhancement of removal by sinks, shall be additional to any that would otherwise occur.	Kyoto Protocol Article 6.1 (b)	OK	Table 2, Section B.2
3. The sponsor Party shall not acquire emission reduction units if it is not in compliance with its obligations under Articles 5 & 7.	Kyoto Protocol Article 6.1 (c)	OK	N/A
4. The acquisition of emission reduction units shall be supplemental to domestic actions for the purpose of meeting commitments under Article 3.	Kyoto Protocol Article 6.1 (d)	OK	N/A
5. Parties participating in JI shall designate national focal points for approving JI projects and have in place national guidelines and procedures for the approval of JI projects.	Marrakech Accords, JI Modalities, §20	OK	The Russian national focal point is the Ministry of Economic Development. The Russian national guidelines and procedures are established by the “Regulation of realization of Article 6 of



Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
			<p>Kyoto Protocol to United Nation Framework Convention on Climate Change". Approved by the RF Government Decree # 843 of 28/10/2009 "About measures on realization of Article 6 of Kyoto Protocol to United Nation Framework Convention on Climate Change".</p> <p>Please refer to National guidelines and procedures of the Sponsor Parties in: http://ji.unfccc.int/Us erManagement/FileStorage/X Q0CYFTBQDSELQJ SZUKHKRMANMD6 QD - Netherlands http://ji.unfccc.int/Us</p>

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
			erManagement/FileStorage/M2J5AP7HOU6C8SRQNYT9F1G4KIBLZW - Spain http://ji.unfccc.int/Us erManagement/FileStorage/P7BEG30W6EOIKZGNMSKT7FQE3D7AM8 - Switzerland
6. The host Party shall be a Party to the Kyoto Protocol.	Marrakech Ac-cords, JI Modalities, §21(a)/24	OK	Russia has ratified the Kyoto Protocol by Federal Law N 128-Φ3 dated 04/11/04.
7. The host Party’s assigned amount shall have been calculated and recorded in accordance with the modalities for the accounting of assigned amounts.	Marrakech Ac-cords, JI Modalities, §21(b)/24	OK	The Russian Fed-eration’s assigned amount has been calculated and re-corded In the 4th National Communi-cation dated 12/10/06.
8. The host Party shall have in place a national registry in ac-cordance with Article 7, paragraph 4.	Marrakech Ac-cords, JI Modalities,	OK	Russian Federation has established the GHG Registry by the

Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
	§21(d)/24		RF Government Decree N 215-p dated 20/02/06.
9. Project participants shall submit to the independent entity a project design document that contains all information needed for the determination.	Marrakech Accords, JI Modalities, §31	OK	Project participant has submitted the PDD and supporting documents to Bureau Veritas Certification, which contains all information needed for determination.
10. The project design document shall be made publicly available and Parties, stakeholders and UNFCCC accredited observers shall be invited to, within 30 days, provide comments.	Marrakech Accords, JI Modalities, §32	OK	The PDD was made publicly available for comments on Bureau Veritas Rus site from 22 March 2010 till 20 April 2010.
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, in accordance with procedures as determined by the host Party shall be submitted, and, if those impacts are considered significant by the project participants or the host Party, an environmental impact assessment in accordance with procedures as required by the host Party shall be carried out.	Marrakech Accords, JI Modalities, §33(d)	OK	Table 2, Section F
12. The baseline for a JI project shall be the scenario that rea-	Marrakech Ac-	OK	Table 2, Section B.2

Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

1. REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference to this protocol
sonably represents the GHG emissions or removal by sources that would occur in absence of the proposed project.	records, JI Modalities, Appendix B		
13. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
14. The baseline methodology shall exclude to earn ERUs for decreases in activity levels outside the project activity or due to force majeure.	Marrakech Accords, JI Modalities, Appendix B	OK	Table 2, Section B.2
15. The project shall have an appropriate monitoring plan.	Marrakech Accords, JI Modalities, §33(c)	OK	Table 2, Section D
16. A project participant may be: (a) A Party involved in the JI project; or (b) A legal entity authorized by a Party involved to participate in the JI project.	JISC “Modalities of communication of Project Participants with the JISC” Version 01, Clause A.3	The Russian project participant will be authorised by the Host Party through the issuance of the approval for the project. Conclusion is pending a follow-up on CAR 01. Refer to Verifiers’ Note in 1 above.	Table 2, Section A

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<i>A. General Description of the project</i>					
<i>A.1 Title of the project</i>					
A.1.1. Is the title of the project presented?	1,2	DR	The title of the project is: “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”. Sectoral scope 10: Fugitive emissions from fuels (solid, oil and gas)		OK
A.1.2. Is the current version number of the document presented?	1,2	DR	PDD Version 01.2.		OK
A.1.3. Is the date when the document was completed presented?	1,2	DR	PDD is dated March 18, 2010.		OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

A.2. Description of the project					
A.2.1. Is the purpose of the project included?	1,2,3	DR	<p>The purpose of the project is defined in PDD Section A.2 as follows:</p> <p>“UstKutNefteGas (UKNG) is proposing the construction of stage 2 of its gas processing plant (GPP) at the Yarakta oil field in the Irkutsk Region of Russia. The construction of stage 2 allows UKNG to produce Liquefied Petroleum Gas (LPG). In addition, UKNG is constructing the necessary infrastructure to (1) transport Associated Petroleum Gas (APG) to the GPP, (2) to transport LPG from the GPP to market and (3) to re-inject additional volumes of the remaining dry gas.</p> <p>The project will allow UKNG to avoid the flaring of associated petroleum gas (APG) from the oil field operations.</p> <p>The project will also allow UKNG to produce LPG not only from the APG but also from the natural gas, which is found in a gas reservoir within the Yarakta oil field. The LPG will be sold to regional markets as a separate product.</p> <p>Some of the remaining dry gas will be used on-site for electric power generation and other energy uses. The remainder of the dry gas will be re-injected into the gas reservoir. By re-injecting the dry gas from APG the gas will be available for future use” (end of quota-</p>	CAR 02	OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

		<p>tion).</p> <p>In July 2011 the Stage 1 of GPP for APG processing will be operational: production of dry gas (C1-C4) and condensate (C5+). State 1 for processing natural gas will be commissioned in beginning of 2010 (p. 6) or in June 2010 (p. 3). Please make it clear.</p> <p>CAR 02. Please make clear the starting date of Stage 2:</p> <ul style="list-style-type: none"> - According to project scenario on page 4, Stage 2 “Production of LPG from APG and natural gas” will start in 2013, or after the end of the first crediting period. The definition of the crediting period in Glossary of JI Terms (Version 02) reads that the end of the crediting period can be after 2012 subject to the approval by the host Party. The status of emission reductions generated by JI projects after the end of the first commitment period of the Kyoto Protocol may be determined by any relevant agreement under the UNFCCC [3]. In the absence of host Party approval and agreement under UNFCCC, the purpose of the project within the first crediting period should be separately defined in PDD. - According to interviews with the project participant held on 08/04/2004, the Stage 2 will be commissioned in October 2012, or within the first crediting period. 		
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 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			PDD Section A.2 includes a concise, summarizing explanation of the situation existing prior to the starting date of the project, baseline scenario; project scenario, and the history of the project (incl. its JI component).		
A.2.2. Is it explained how the proposed project reduces greenhouse gas emissions?	1,2	DR	Please refer to A.4.4 below.		OK
A.3. Project participants					
A.3.1. Are project participants and Party(ies) involved in the project listed?	1,2	DR	Party A is the Russian Federation. Project participant from the Party A is JSC “UstKut-NefteGas (UKNG). Parties B are Netherlands, Spain, and Switzerland. Project participant from the Parties B is Stitching carbon Finance (SCF).	Pending	OK
A.3.2. The data of the project participants are presented in tabular format?	1,2	DR	The data is presented in the tabular format as per [2].		OK
A.3.3. Is contact information provided in Annex 1 of the PDD?	1,2	DR	The contact information is provided in PDD Annex 1.		OK
A.3.4. Is it indicated, if it is the case, if the Party involved is a host Party?	1,2	DR	Russian Federation is indicated as a host Party as prescribed by the tabular format [2].		OK
A.4. Technical description of the project					
A.4.1. Location of the project activity					
A.4.1.1. Host Party(ies)	1,2	DR	The Russian Federation.		OK
A.4.1.2. Region/State/Province etc.	1,2	DR	Please refer to PDD Section A.4.1.2.		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

A.4.1.3. City/Town/Community etc.	1,2	DR	The nearest inhabited settlement is the village of Verkhnemarkovo, which is located 90 km to the south of the Yarakta oil field. The distance to the City of Ust-Kut is approximately 220 km.		OK
A.4.1.4. Detail of the physical location, including information allowing the unique identification of the project. (This section should not exceed one page)	1,2	DR	CAR 03. Section A.4.1.4 does not provide the unique identification of the project.	CAR 03	OK
A.4.2. Technology(ies) to be employed, or measures, operations or actions to be implemented by the project					
A.4.2.1. Does the project design engineering reflect current good practices?	1,2	DR	<p>CAR 04. Section A.4 does not describe the technologies to be employed nor provides all relevant technical data [2].</p> <p>The implementation schedule for the APG related part of the project is described in narrative form:</p> <ul style="list-style-type: none"> - Stage 1 Separation of APG (from July 2011): Separation into two fractions: wet condensate (C5+ with high content of C3, C4) and dry gas (C1-C4). - Stage 2 Separation of APG and natural gas (from January 2013 as per PDD and October 2012 as per the interviewed project participant - refer to CAR 02). Separation of the gas mix into three fractions: condensate (C5+), LPG (C3/C4) and Dry Gas (C1/C2). <p>The proposed JI project includes the con-</p>	CAR 04 CL 01	OK OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			construction and installation of the following facilities and pieces of equipment for Stage 1: 1. The construction of a 30 km APG pipeline from the OTP and BPS to the GPP 2. The construction of two APG compressor stations located in separate buildings close to the OTP and the BPS. CL 01. Please clarify why re-injection pipelines and high-pressure compressors for APG/NG injection in gas reservoir not included in the list of the project equipment on p. 4 and 10. This equipment is sized to transport and compress APG as well.		
A.4.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2	DR	The project uses the state-of-art technology of APG utilisation for dry gas and wet condensate production. Dry gas is used for own needs of the Yarakta field (electricity and heat production) and also is injected in the gas reservoir for long-term storage.		OK
A.4.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	DR	According to PDD, the project technology (Stage 1, first crediting period) is planned to be substituted since 2013 by more efficient Stage 2 technology. According to interviews with the project participant, Stage 2 will become operational since October 2012. For clarity, refer to CAR 02.		OK
A.4.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1,2	DR	CL 02. Please clarify if training of operators of GPP and high pressure compressor train is envisaged.	CL 02	OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

A.4.2.5. Does the project make provisions for meeting training and maintenance needs?	1,2	DR	Refer to A.4.2.4.	Pending	OK
A.4.3. Brief explanation of how the anthropogenic emissions of greenhouse gases by sources are to be reduced by the proposed JI project, including why the emission reductions would not occur in the absence of the proposed project, taking into account national and/or sectoral policies and circumstances					
A.4.3.1. Is it stated how anthropogenic GHG emission reductions are to be achieved? (This section should not exceed one page)	1,2	DR	It is stated in PDD Section A.4.3 that the emission reduction is achieved through effective utilisation and underground storage of associated gas from oil wells which otherwise would be flared.		OK
A.4.3.2. Is it provided the estimation of emission reductions over the crediting period?	1,2	DR	According to PDD Version 01.2, total emission reductions over the crediting period are estimated to be 708,038 tCO ₂ e.		OK
A.4.3.3. Is it provided the estimated annual reduction for the chosen credit period in tCO ₂ e?	1,2	DR	According to PDD Version 01.2, the annual average of emission reductions over the crediting period is estimated to be 472,025 tCO ₂ e. When estimated, the value of emission reduction for 6 months 2011 was recalculated to the full year.		OK
A.4.3.4. Are the data from questions A.4.3.2 and A.4.3.3 above presented in tabular format?	1,2	DR	The data is presented in the tabular format. Refer to PDD Section A.4.3.1.		OK
A.5. Project approval by the Parties involved					
A.5.1. Are written project approvals by the Parties involved attached?	1,2	DR	Conclusion is pending a response to CAR 01.	Pending	

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

B. Baseline					
B.1. Description and justification of the baseline chosen					
B.1.1. Is the chosen baseline described?	1,2,4	DR	<p>The chosen baseline is scenario 2 “Flaring, only natural gas is processed” which was identified by listing and studying nine plausible alternative scenarios for the APG and oil and gas infrastructure and selecting the most plausible one. In doing so, the guidance of the CDM methodology AM0009 (Version 04) “Recovery and utilisation of gas from oil wells that would otherwise flared or vented” was allowed for.</p> <p>CAR 05. Paragraph “Baseline scenario” on page 17 is confusing since includes the description of APG utilization in Stage 1.</p> <p>CAR 06. The key information and data used to establish the baseline (variables, parameters, data sources etc.) are not provided in the tabular form in Section B.1 as required by [2]. Annex 2 does not contain a summary of the key elements in tabular form as prescribed by [2].</p>	CAR 05 CAR 06	OK OK
B.1.2. Is it justified the choice of the applicable baseline for the project category?	1,2,4	DR	<p>It is explicitly indicated in PDD Section B.1 that a JI specific approach regarding baseline setting and monitoring was applied.</p> <p>PDD Section B.1 reads: “For purposes of determining the correct methodologies, two sub-projects were distinguished:</p>	CAR 07 CAR 08	OK OK



Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

			<p>- Subproject I: Production of LPG and dry gas from APG. The LPG is sold as a separate product. Some dry gas is used on-site for power generation and other energy uses.</p> <p>- Subproject II: Re-injection of dry gas from APG into the natural gas reservoir" (end of quotation).</p> <p>CAR 07. Subproject I should include both Stage 1 and Stage 2. Please correct accordingly.</p> <p>CAR 08. Distinguishing of Subproject II is not justified since stripped APG injection is anyway included by PDD developer in scenario 9 "Project" for establishing baseline for Subproject I following a guidance of methodology AM0009 (Version 04). However, this methodology envisages injection of raw (not stripped) APG for lift-gas process only. It should have been explicitly indicated in PDD that only selected elements of AM0009 (Version 04) are applied under the used JI specific approach. The deviation from the methodology is the inclusion of no lift-gas injection in scenario 9.</p>		
B.1.3. Is it described how the methodology is applied in the context of the project?	1,2,4	DR	The project activity fulfills applicability criteria of AM0009 (Version 04), as analyzed in PDD Section B.1. Applicability conditions on p. 16 include issues (8) and (9) which do not belong to the original methodology.		OK
B.1.4. Are the basic assumptions of the baseline	1,2	DR	Assumptions of the JI specific approach with	CL 03	OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

<p>methodology in the context of the project activity presented (See Annex 2)?</p>			<p>regard to APG injection are specified in paragraph Methodology for Subproject II. In particular, it is indicated that “In order to ensure that there is no leakage from the reservoir, the re-injection pressure will be kept lower than the original gas reservoir pressure (25 MPa) and the pressure in the gas reservoir shall not rise above the original gas reservoir pressure. This also ensures that the project does not enhance oil production» (end of quotation). In this respect a clarification is needed.</p> <p>CL 03. Please clarify if the pressure in the gas reservoir will not rise above the original one when the amount of injected gas 288,94 MCM (2011) and 553,16 MCM (2012) exceeds the amount of produced natural gas 267,8 MCM and 445,2 MCM respectively. Note the data on the injected gas are taken from excel spreadsheet made available to the verifier.</p>		
<p>B.1.5. Is all literature and sources clearly referenced?</p>	<p>1,2</p>	<p>DR</p>	<p>Key literature and sources are referenced. Please ensure that information and data to be provided under CAR 06 will have due references (for instance, density and LHV of gases, as well as emission factors).</p>	<p>OK</p>	<p>OK</p>
<p>B.2. Description of how the anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the JI project</p>					



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

<p>B.2.1. Is the proposed project activity additional?</p>	<p>1,2, 5,6,7</p>	<p>DR</p>	<p>It is explicitly indicated in PDD section B.2 that additionality of the project is proven by using the approach (a) in paragraph 2 of Annex I to the “Guidance on Criteria for Baseline Setting and Monitoring (Version 2).</p> <p>The additionality of the project is demonstrated with the use of the four steps procedure of AM0009/Version 04:</p> <p>As Step 1, nine plausible alternatives to the project activity were identified out of which, after screening, two were left: the proposed project activity without JI registration (scenario 9) and the baseline scenario (scenario 2).</p> <p>As Step 2, legal aspects were evaluated and a conclusion was made that the scenarios 2 and 9 are in compliance with local legislation and regulation;</p> <p>As Step 3, the economic attractiveness of the alternatives was evaluated. The conducted benchmark analysis and sensitivity analysis showed that the project under the Stage 2 (sale of LPG and condensate, dry gas reinjection) is not financially attractive. The verifier observes that the same conclusion remain valid for a would-be operation of Stage 1 throughout the project life time due to a very scarce source of revenue (condensate C5+). The benchmark was determined with the use of the official Methodological Recommenda-</p>	<p>CAR 09</p>	<p>OK</p>
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Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			<p>tions [7]. The revenues and expenditures were calculated as the difference between the baseline and project scenarios.</p> <p>CAR 09:</p> <ul style="list-style-type: none"> - Present the investment analysis in a transparent manner and provide in PDD all relevant input data. - Please provide breakdown of investment cost 3961 mln roubles and particularly indicate what equipment is included in it relevant to APG. - Please explain the differences in IRR between the PDD (7,98%) and the excel sheet (5,58% for 20 years). - Please remake the investment analysis taking into account the revenue from sales of condensate from APG. <p>As Step 4, common practice analysis was conducted. The proposed project i.e. APG processing for LPG production and dry gas re-injection, is reasonably observed to be the first of kind in Irkutsk geographical area.</p>		
B.2.2. Is the baseline scenario described?	1,2	DR	Refer to PDD Sections B.1.		OK
B.2.3. Is the project scenario described?	1,2	DR	Refer to PDD Sections A.4.3, B.1 and B.2.		OK
B.2.4. Is an analysis showing why the emissions in the baseline scenario would likely exceed the emissions in the project scenario included?	1,2	DR	A general analysis is included in Section A.4.3. Detailed analysis is presented on excel spreadsheet made available to the verifier.		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

B.2.5. Is it demonstrated that the project activity itself is not a likely baseline scenario?	1,2	DR	Please refer to PDD Section B.2. The project activity without registration under JI mechanism is not a likely baseline scenario since it is not economically and financially attractive as compared with the chosen baseline scenario.		OK
B.2.6. Are national policies and circumstances relevant to the baseline of the proposed project activity summarized?	1,2	DR	Succinct information about relevant regulations in the Russian Federation as to APG flaring is presented on PDD pp. 13, 20, 22, and 25.		OK
B.3. Description of how the definition of the project boundary is applied to the project activity					
B.3.1. Are the project’s spatial (geographical) boundaries clearly defined?	1,2,4	DR	<p>The project’s boundary for the baseline and project scenarios are defined in PDD Section B.3 separately for Subproject I (in accordance with AM0009 (Version 04)), and Subproject II. All involved gases and sources are explicitly stated; exclusions of gases related to the baseline and the project are justified.</p> <p>CAR 10:</p> <ul style="list-style-type: none"> - Baseline emission sources indicated on Table 8 do not conform to those in Table 7 taken from AM0009 (Version 04). - Exclusion of the source SP3 is not reasoned since GPP is located within the project boundary; reference to “no-compression of APG” for SP3 is irrelevant (refer to Table 9). - Exclusion of the source SP5 – combustion of dry gas from APG at the gas turbine drive of the re-injection compressor – is not reasoned 	CAR 10 CL 04	OK OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			(refer to Table 11). - With regard to SP5 and SP6 in Table 11 please make it clear if re-injection compressor has an electric or gas turbine drive. - Please indicate all sources Nos on Figures 7 and 8. - Condensate (C5+) is not included in the list of emission sources without justification. Leaks of dry gas (from APG) from re-injection pipelines are calculated in PDD Section B.3 Paragraph 2.1. Leaks from natural gas reservoir is considered very unlikely (p. 38). Please replace in PDD the term <i>leakage</i> by <i>leak</i> . CL 04. Please clarify what is the likelihood of leakage from the project gas reservoir into the project oil reservoir.		
B.4. Further baseline information, including the date of baseline setting and the name(s) of the person(s)/entity(ies) setting the baseline					
B.4.1. Is the date of the baseline setting presented (in DD/MM/YYYY)?	1,2	DR	The date of the baseline completion is set as 20/02/2010.		OK
B.4.2. Is the contact information provided?	1,2	DR	The baseline study was carried out by Green-Stream Network Plc (Finland) and Royal Haskoning (Netherlands). Contact information is provided.		OK
B.4.3. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	CAR 11. It is not indicated if the above persons/entities are project participants listed in Annex 1 of PDD.	CAR 11	OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

C. Duration of the project and crediting period					
C.1. Starting date of the project					
C.1.1. Is the project’s starting date clearly defined?	1,2	DR	The starting date of the project was March 21, 2009. This is when physical construction on-site was started.		OK
C.2. Expected operational lifetime of the project					
C.2.1. Is the project’s operational lifetime clearly defined in years and months?	1,2	DR	40 years or 480 months.		OK
C.3. Length of the crediting period					
C.3.1. Is the length of the crediting period specified in years and months?	1,2	DR	The crediting period starts on July 1, 2011 and lasts for one and a half years or 18 months until December 31, 2012.		OK
D. Monitoring Plan					
D.1. Description of monitoring plan chosen					
D.1.1. Is the monitoring plan defined?	1,2,4	DR	It is explicitly indicated in PDD Section D.1 that a JI specific approach regarding monitoring is used. It is reported that the approach reportedly uses selected elements from AM0009 (Version 04). A following theoretical description of sources for project emissions and baseline emissions is applied in the JI specific approach: Project emissions (P_I) are due to the three sources: - Electricity consumption for APG compres-	CAR 12	OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

		<p>sors (P_II);</p> <ul style="list-style-type: none"> - Electricity consumption for DG re-injection compressors (P_III); - Leaks from re-injection pipeline (P_IV). <p>Baseline emissions (B_I), instead of the straightforward definition as per AM0009 (Version 04), are composed based on four APG-derivative flows:</p> <ul style="list-style-type: none"> - DG re-injected in gas reservoir (B_II); - LPG combusted at end-user (B_III) - DG combusted for power generation (B_IV) - DG combusted in boilers and ovens (B_V). <p>CAR 12:</p> <ul style="list-style-type: none"> - Emissions from DG consumption in boilers and ovens should be included in project emissions (refer to AM0009 (version 04)). - Emissions from condensate C5+ combustion at end-user should be included in baseline emissions; - Equation (P_III) erroneously contains Volume of Dry Gas. - Equation (B_III) contains the term “volume percentage” with incorrect subscript. - Equation (B_IV) erroneously contains Net Caloric Value of methane in denominator. - P6 in Section D.1.1.1 is superfluous. - B10 in Section D.1.1.3 is inadequately described in column “data variable”. - B22 in Section D.1.1.3 is inadequately de- 	
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 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			scribed in column “data unit”.		
D.1.2. Option 1 – Monitoring of the emissions in the project scenario and the baseline scenario.	1,2	DR	This option applies since the baseline and project emissions are handled separately.		OK
D.1.3. Data to be collected in order to monitor emissions from the project, and how these data will be archived.	1,2	DR	Data to be collected in order to monitor emissions from the project are defined in PDD Section D.1.1.1. The data (24 ID) include in particular: <ul style="list-style-type: none"> - Electricity consumption by APG compressors; - Electricity consumption by re-injection compressors; - Carbon emission factor for on-site electricity production; - Volumetric share of components from APG in the Dry Gas. 		OK
D.1.4. Description of the formulae used to estimate project emissions (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2	DR	These are Formulae (P_I) – (P_VI) are presented in PDD Section D.1.1.2. The formulae were checked and found correct except (P_III). Conclusion is pending a response to CAR 12.	Pending	OK
D.1.5. Relevant data necessary for determining the baseline of anthropogenic emissions of greenhouse gases by sources within the project boundary, and how such data will be collected and archived.	1,2,4	DR	Data to be collected in order to monitor baseline emissions are defined in PDD Section D.1.1.3. The data (28 ID) include in particular: <ul style="list-style-type: none"> - Volume of Dry Gas produced at the Gas Processing Plant; - Volume of LPG produced at the Gas 		OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			Processing Plant; - Volume of Dry Gas used for on-site electricity production; - Volume of Dry Gas combusted in the boilers and ovens; - Carbon emission factor for the combustion of methane (AM0009 (Version 04) assumes that the recovered gas displaces the use of methane); - Volumetric share of components from APG in the LPG; - Volumetric share of components from APG in the Dry Gas.		
D.1.6. Description of the formulae used to estimate baseline emissions (for each gas, source etc, emissions in units of CO2 equivalent).	1,2,4	DR	These are Formulae (B_I) – (P_XI) are presented in PDD Section D.1.1.4. The formulae were checked and found correct except B_III and B_IV. Conclusion is pending a response to CAR 12.	Pending	OK
D.1.7. Option 2 – Direct monitoring of emissions reductions from the project (values should be consistent with those in section E)	1,2	DR	Not applicable. Option 1 is used.		OK
D.1.8. Data to be collected in order to monitor emission reductions from the project, and how these data will be archived.	1,2	DR	Not applicable.		OK
D.1.9. Description of the formulae used to calculate emission reductions from the project (for each gas, source etc; emissions/emission reductions in units of CO2 equivalent).	1,2	DR	Not applicable.		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

D.1.10. If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project.	1,2	DR	The proposed project does not cause leakage in the oil industry and in the market for gas products as compared with the baseline. Note that in AM0009 (Version 04) leakages are considered negligible.		OK
D.1.11. Description of the formulae used to estimate leakage (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2	DR	Not applicable.		OK
D.1.12. Description of the formulae used to estimate emission reductions for the project (for each gas, source etc.; emissions in units of CO2 equivalent).	1,2	DR	This is Formula (E_I) in PDD Section D.1.4.		OK
D.1.13. Is information on the collection and archiving of information on the environmental impacts of the project provided?	1,2	DR	Please refer to PDD Section D.1.5.		OK
D.1.14. Is reference to the relevant host Party regulation(s) provided?	1,2	DR	CAR 13. Please provide references to the relevant host Party environmental regulations.	CAR 13	OK
D.1.15. If not applicable, is it stated so?	1,2	DR	Refer to D.1.14.	Pending	OK
D.2. Qualitative control (QC) and quality assurance (QA) procedures undertaken for data monitored					
D.2.1. Are there quality control and quality assurance procedures to be used in the monitoring of the measured data explained?	1,2	DR	Appropriate QC and QA procedures are explained in sufficient detail in PDD Section D.3.		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

D.3. Please describe of the operational and management structure that the project operator will apply in implementing the monitoring plan					
D.3.1. Is it described briefly the operational and management structure that the project participants(s) will implement in order to monitor emission reduction and any leakage effects generated by the project	1,2	DR	Allocation of responsibilities for Monitoring Plan implementation and Monitoring Report preparation is presented in PDD Section D.3.		OK
D.4. Name of person(s)/entity(ies) establishing the monitoring plan					
D.4.1. Is the contact information provided?	1,2	DR	The monitoring plan was established by GreenStream Network Plc (Finland) and Royal Haskoning (Netherlands). Contact information is provided.		OK
D.4.2. Is the person/entity also a project participant listed in Annex 1 of PDD?	1,2	DR	CAR 14. It is not indicated if the above persons/entities are project participants listed in Annex 1 of PDD.	CAR 14	OK
E. Estimation of greenhouse gases emission reductions					
E.1. Estimated project emissions					
E.1.1. Are described the formulae used to estimate anthropogenic emissions by source of GHGs due to the project?	1,2	DR	Formulae are described in PDD Section D.1.1.2.		OK
E.1.2. Is there a description of calculation of GHG project emissions in accordance with the formula specified in for the applicable project category?	1,2	DR	A description of calculations is presented in PDD Section E.1 Tables (1) – (4) separately for each source of emission and the total value	Pending	OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			of project emissions.		
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1,2	DR	There is no explicit indication that conservative assumptions were made.		OK
E.2. Estimated leakage					
E.2.1. Are described the formulae used to estimate leakage due to the project activity where required?	1,2	DR	Refer to D.1.10.		OK
E.2.2. Is there a description of calculation of leakage in accordance with the formula specified in for the applicable project category?	1,2	DR	Not applicable		OK
E.2.3. Have conservative assumptions been used to calculate leakage?	1,2	DR	Not applicable		OK
E.3. The sum of E.1 and E.2.					
E.3.1. Does the sum of E.1. and E.2. represent the project activity emissions?	1,2	DR	As no leakage is expected, $E1+E2=E1$. Refer to PDD Section E.3		OK
E.4. Estimated baseline emissions					
E.4.1. Are described the formulae used to estimate the anthropogenic emissions by source of GHGs in the baseline using the baseline methodology for the applicable project category?	1,2	DR	Formulae are described in PDD Section D.1.1.4.		OK
E.4.2. Is there a description of calculation of GHG baseline emissions in accordance with the formula specified for the applicable project category?	1,2	DR	A description of calculations is presented in PDD Section E.1 Tables (1) – (5) separately for each source of emission and the total value of baseline emissions.	Pending	OK
E.4.3. Have conservative assumptions been used to	1,2	DR	There is no explicit indication that conservative		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

calculate baseline GHG emissions?			assumptions were made.		
E.5. Difference between E.4. and E.3. representing the emission reductions of the project					
E.5.1. Does the difference between E.4. and E.3. represent the emission reductions due to the project during a given period?	1,2	DR	Yes, it does. Refer to PDD Section E.5.		OK
E.6. Table providing values obtained when applying formulae above					
E.6.1. Is there a table providing values of total CO ₂ abated?	1,2	DR	The table in PDD Section E.6 provides the total values of estimated project emissions, leakage, baseline emissions, and emission reductions in accordance with the JI reporting format.		OK
F. Environmental Impacts					
F.1. Documentation on the analysis of the environmental impacts of the project, including trans-boundary impacts, in accordance with procedures as determined by the host Party					
F.1.1. Has an analysis of the environmental impacts of the project been sufficiently described?	1,2	DR	CAR 15. Please list and attach the documentation to the PDD.	CAR 15	OK
F.1.2. Are there any host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1,2	DR	Positive opinion of RF GlavGosExpertise #676-09/ГГЭ-6349/02 dated 02/11/2009 was received on the Working Design Project documentation, the latter includes the environmental impact assessment (in verifier's possession).		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

			There is a reference in PDD Section F.2 to the Environmental and Social Impact Assessment. Yarakta Oil and Gas Field Development. Irkutsk Oil Company. Executive Summary. November – December 2008.		
F.1.3. Are the requirements of the National Focal Point being met?	1,2	DR	The National Focal Point (MED) issued an Order dated 23/11/2009 # 485 which requires the inclusion in the submitted project documentation (not PDD) a short description of the EIA carried out in accordance with the established order. Verifiers observe that given EIA is available this requirement will be met.		OK
F.1.4. Will the project create any adverse environmental effects?	1,2	DR	The project mitigates the environmental impact by the utilization of APG which would otherwise be flared.		OK
F.1.5. Are transboundary environmental impacts considered in the analysis?	1,2	DR	CL 05. Please clarify if transboundary environmental impacts are considered significant by the project participant.	CL 05	OK
F.1.6. Have identified environmental impacts been addressed in the project design?	1,2	DR	Refer to F.1.2.		OK
G. Stakeholders' comments					
G.1. Information on stakeholders' comments on the project, as appropriate					
G.1.1. Is there a list of stakeholders from whom comments on the project have been received?	1,2	DR	CAR 16. Please provide a list of attendees of the public hearings from which comments on the project have been received. Refer to PDD Section G.1.	CAR 17	OK



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

G.1.2. The nature of comments is provided?	1,2	DR	Conclusion is pending a response to CAR 16.	Pending	
G.1.3. Has due account been taken of any stakeholder comments received?	1,2	DR	Conclusion is pending a response to CAR 16.	Pending	

Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Table 3

Baseline and Monitoring Methodology: AM0009 (Version 04) “Recovery and utilisation of gas from oil wells that would otherwise be flared or vented”

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1 Baseline Methodology					
1.1 Applicability					
1.1.1 Are the methodology applicability conditions applicable to the project activity?	1,4	DR	Yes, all the methodology applicability conditions except for the APG injection into the oil reservoir and APG venting are applicable to the project activity. Refer to PDD Section B.1.		OK
1.1.2 Does the identified baseline scenario correspond to those scenarios which are indicated in AM0009/Version 04?	1,4	DR	Yes, the identified baseline scenario corresponds to scenarios G2 and P4. Refer to PDD Section B.1.		OK
1.2 Project boundary					
1.2.1 Does the project boundary conform to the description in AM 0009/Version 04?	1,4	DR	Yes, it does except for the scenarios with APG venting and lifting. Refer to PDD Section B.3.		OK
1.3 Identification of the baseline scenario and demonstration of additionality					
1.3.1 Is the four-step procedure described in AM0009/Version 04 applied?	1,4,6	DR	Yes, it is applied, though without reference to the “Tool for the demonstration and assessment of additionality” (Version 05.2).		OK
1.3.2 Are the identified realistic and credible alternatives in compliance with mandatory applicable legal and regulatory requirements?	1,4	DR	Yes the identified realistic and credible alternatives are in compliance with mandatory applicable legal and regulatory requirements.		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Refer to PDD Section B.2.		
1.3.3 Are the investment calculations described and documented transparently?	1,4,6	DR	The investment analysis is included in the excel spreadsheet made available to the verifier.		OK
1.3.4 Is the common practice analysis carried out?	1,4,6	DR	The common practice analysis is carried out implicitly following the guidance of the “Tool for the demonstration and assessment of additionality” (Version 05.2). Refer to PDD Section B.2		OK
1.4 Baseline emissions					
1.4.1 Are the baseline emissions calculated by Formula (1) from AM0009/Version 04?	1,4	DR	Formula (1) in PDD Section B.2 was applied.		OK
1.5 Project emissions					
1.5.1 Are the project emissions calculated by Formula (2) from AM0009/Version 04?	1,4	DR	Please refer to Formulae in PDD Section D.1.1.2.		OK
1.6 Leakage					
1.6.1 Are leakage emissions neglected?	1,4,6	DR	Yeas, as per AM0009 (Version 04).		OK
1.7 Emissions reduction					
1.7.1 Are the emission reductions calculated by Formula (3) from AM0009/Version 04?	1,4	DR	Please refer to Formula (E_I) in PDD Section D.1.4.		OK
2 Monitoring Methodology					
2.1 Are data and parameters indicated in AM0009/Version	1,4	DR	The monitoring plan includes the data and		OK

 Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
04 monitored?			parameters indicated in AM0009 (Version 04).		
2.2 Are the data and parameters monitored presented in the tabular format as per AM0009/Version 04?	1,4	DR	Yes, the tabular format is followed. Refer to PDD Section D.2.		OK

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Table 4 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	1	DR	UstKutNefteGas has the Rostekhnadzor Permits for Air Emissions #ЭН-536 dated 30/12/2009 for oil wells 15,16,21,53,70 and #ЭН-257 dated 23/03/2010 for oil well 15 (within the project boundary).		OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	1	DR	Please refer to 1.1 above.		OK
1.3. Is the project in line with relevant legislation and plans in the host country?	1	DR	Yes, the project is in line with relevant legislation and plans in the host country.		OK

Determination Report on JI project
 "Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia"

Table 5 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
CAR 01. The project has no approvals of the Parties involved.	1 Table 1	N/A	The conclusion is pending the approval by the host Party.
<p>CAR 02. Please make clear the starting date of Stage 2:</p> <ul style="list-style-type: none"> - According to project scenario on page 4, Stage 2 "Production of LPG from APG and natural gas" will start in 2013, or after the end of the first crediting period. The definition of the crediting period in Glossary of JI Terms (Version 02) reads that the end of the crediting period can be after 2012 subject to the approval by the host Party. The status of emission reductions generated by JI projects after the end of the first commitment period of the Kyoto Protocol may be determined by any relevant agreement under the UNFCCC [3]. In the absence of host Party approval and agreement under UNFCCC, the purpose of the project within the first crediting period should be separately defined in PDD. - According to interviews with the project 	A.2.1	<p><u>Response 1 dated 03/05/2010</u></p> <p>The expected commissioning date for the production of LPG is October 2012, which is within the first crediting period. Sections A.2 and A.4.2 of the PDD have been amended accordingly.</p>	<p><u>Conclusion on Response 1</u></p> <p>Response is accepted. CAR is closed based on due amendment made to PDD.</p>



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
participant held on 08/04/2004, the Stage 2 will be commissioned in October 2012, or within the first crediting period.			
CAR 03. Section A.4.1.4 does not provide the unique identification of the project.	A.4.1.4	<u>Response 1 dated 03/05/2010</u> GPS coordinates for the GPP, the APG Compressors and the Yarakta field have been added to Section A.4.1.4 of the PDD.	<u>Conclusion on Response 1</u> Response is accepted. CAR is closed based on due amendment made to PDD.
CAR 04. Section A.4 does not describe the technologies to be employed nor provides all relevant technical data [2].	A.4.2.1	<u>Response 1 dated 03/05/2010</u> The project company has provided an explanatory note as a supporting document and has made the corresponding changes to section A.4 of the PDD. The project company has provided technical descriptions of the GPP and the re-injection equipment as separate supporting documents.	<u>Conclusion on Response 1</u> Response is accepted. Inclusion in Section A.4.2 of the provided technical descriptions of the GPP and the re-injection equipment would not add value to PDD. Information in the revised Section A.4.2, in particular Page 10, is observed as sufficient enough. CAR is closed based on due amendment made to PDD.
CAR 05. Paragraph “Baseline scenario” on page 17 is confusing since includes the description of APG utilization in Stage 1.	B.1.1	<u>Response 1 dated 03/05/2010</u> The project company has provided an explanatory note as a supporting document on the sequence in which the GPP is developed. Section	<u>Conclusion on Response 1</u> Response is accepted. CAR is closed based on due amendment made to PDD.



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		B.1.1 has been amended. It is clarified that in the absence of the project no part of the APG would be transported to the GPP. However, a portion of the APG would be combusted in the boilers and technical ovens of the OTP, as is currently the case. The remainder would be flared to 100%.	
<p>CAR 06. The key information and data used to establish the baseline (variables, parameters, data sources etc.) are not provided in the tabular form in Section B.1 as required by [2]. Annex 2 does not contain a summary of the key elements in tabular form as prescribed by [2].</p>	B.1.1	<p><u>Response 1 dated 03/05/2010</u> Section B.1 and Annex 2 of the PDD have been updated. Tables are provided for the baseline variable that is fixed ex-ante.</p> <p><u>Response 2 dated 04/06/2010</u> Section B.1 of the PDD has been updated. Tables are provided for all baseline variables, except for those that have been calculated based on other baseline variables. A table A1 containing the key elements of the baseline has been added to Annex 2.</p>	<p><u>Conclusion on Response 1</u> Response is not accepted. CAR as formulated remains not responded. For guidance, please refer to parameters and data used to establish the baseline listed in Section D.1.1.3.</p> <p><u>Conclusion on Response 2</u> Response is accepted in the main. CAR is closed based on due amendment made to PDD.</p>
<p>CAR 07. Subproject I should include both Stage 1 and Stage 2. Please correct accordingly.</p>	B.1.2	<p><u>Response 1 dated 03/05/2010</u> The project company has provided an explanatory note about the sequence of the development of the GPP. The baseline description in</p>	<p><u>Conclusion on Response 1</u> Response is accepted. CAR is closed based on due</p>

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		section A.2 and Section B.1 has been adapted accordingly.	amendment made to PDD.
<p>CAR 08. Distinguishing of Subproject II is not justified since stripped APG injection is anyway included by PDD developer in scenario 9 “Project” for establishing baseline for Subproject I following a guidance of methodology AM0009 (Version 04). However, this methodology envisages injection of raw (not stripped) APG for lift-gas process only. It should have been explicitly indicated in PDD that only selected elements of AM0009 (Version 04) are applied under the used JI specific approach. The deviation from the methodology is the inclusion of no lift-gas injection in scenario 9.</p>	B.1.2	<p><u>Response 1 dated 03/05/2010</u></p> <p>Section B.1 of the PDD has been reworded. The distinction of two subprojects has been eliminated. It is explicitly indicated that only selected elements of AM0009 are applied under a JI-specific approach.</p>	<p><u>Conclusion on Response 1</u></p> <p>Response is accepted. CAR is closed based on due amendment made to PDD.</p>
<p>CAR 09:</p> <ul style="list-style-type: none"> - Present the investment analysis in a transparent manner and provide in PDD all relevant input data. - Please provide breakdown of investment cost 3961 mln roubles and particularly indicate what equipment is included in it relevant to APG. 	B.2.1	<p><u>Response 1 dated 03/05/2010</u></p> <p>The assumptions page of the investment analysis provides the breakdown of the CAPEX. It is indicated what equipment is relevant to the JI project, which includes APG processing and LPG production from both APG and natural gas.</p> <p><u>Response 2 dated 04/06/2010</u></p>	<p><u>Conclusion on Response 1</u></p> <p>The assumptions page was not made available. Please include in this page input data for revenue and fixed costs. Closure of CAR is pending provision of the updated investment analysis and inclusion of the as-</p>

 Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
<ul style="list-style-type: none"> - Please explain the differences in IRR between the PDD (7,98%) and the excel sheet (5,58% for 20 years). - Please remake the investment analysis taking into account the revenue from sales of condensate from APG. 		<p>The assumptions page was made available as an EXCEL file to the validator on May 7. The document includes the breakdown of capital and operating expenditures as well as prices for condensate and LPG. A list of the key assumptions is included in section B.2 of the PDD, detailed data are included in Annexes 5 and 6.</p> <p>The investment analysis takes into account the revenue from the sale of condensate from APG. Such volumes are small since most C5+ fractions are stripped from the APG already at the OTP and BPS.</p> <p>The revised project IRR is 8.42%. This is shown in section B.2 of the PDD and the supporting excel sheet.</p>	<p>assumptions list in the PDD.</p> <p><u>Conclusion on Response 2</u> Response is accepted. CAR is closed based on due amendment made to PDD.</p>
<p>CAR 10:</p> <ul style="list-style-type: none"> - Baseline emission sources indicated on Table 8 do not conform to those in Table 7 taken from AM0009 (Version 04). - Exclusion of the source SP3 is not reasoned since GPP is located within the project boundary; reference to “no-compression of 	B.3.1	<p><u>Response 1 dated 03/05/2010</u></p> <p>Table 8 in section B.3 of the PDD has been updated. It is indicated which emission sources correspond to Table 7 and which have been added to include the re-injection of the Dry Gas. The rationale for excluding the consumption of dry gas at the GPP and the re-injection com-</p>	<p><u>Conclusion on Response 1</u> Response is accepted. CAR is closed based on due amendment made to PDD.</p> <p><u>Verifier’s observations on Response 1:</u></p> <ul style="list-style-type: none"> - Under AM0009 (Version 04),



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
<p>APG” for SP3 is irrelevant (refer to Table 9).</p> <ul style="list-style-type: none"> - Exclusion of the source SP5 – combustion of dry gas from APG at the gas turbine drive of the re-injection compressor – is not reasoned (refer to Table 11). - With regard to SP5 and SP6 in Table 11 please make it clear if reinjection compressor has an electric or gas turbine drive. - Please indicate all sources Nos on Figures 7 and 8. - Condensate (C5+) is not included in the list. 		<p>pressor has been modified. In the baseline scenario the dry gas (from APG) would have been flared anyway.</p> <p>It is clarified that the re-injection compressor has a gas turbine drive.</p> <p>The source numbers of all sources that are “included” have been indicated in figures 6 and 7. Figures 8 and 9 have been eliminated since there is no longer a distinction between two subprojects.</p> <p>Emissions from condensate combustion at end-users are included as a baseline emission source.</p>	<p>the utilisation of recovered APG displaces the use of methane at end users. Project emissions are determined by energy consumption for own project needs.</p> <p>The project approach assumes instead that utilisation of APG displaces the consumption of individual parts of APG products (injected dry gas, LPG, and condensate) at end users. At that, the part of APG (dry gas) used for own project needs and emergency flaring (SP2 – SP5) is not taken into account since they are subtracted from the total amount of APG to obtain amounts of APG derivatives (injected dry gas, LPG, and condensate). That is why it is stated in PDD that “in the baseline scenario the dry gas (from APG) would have been flared anyway”. Inclusion of PS1 in project emissions is conservative.</p>



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
<p>CAR 11. It is not indicated if the above persons/entities are project participants listed in Annex 1 of PDD.</p>	<p>B.4.3</p>	<p><u>Response 1 dated 03/05/2010</u> Section B.4 of the PDD has been updated. It is indicated that GreenStream Network and Royal Haskoning are not Project Participants.</p>	<p><u>Conclusion on Response 1</u> Response is accepted. CAR is closed based on due amendment made to PDD.</p>
<p>CAR 12:</p> <ul style="list-style-type: none"> - Emissions from DG consumption in boilers and ovens should be included in project emissions (refer to AM0009 (version 04)). - Emissions from condensate C5+ combustion at end-user should be included in baseline emissions; - Equation (P_III) erroneously contains Volume of Dry Gas. - Equation (B_III) contains the term “volume percentage” with incorrect subscript. - Equation (B_IV) erroneously contains Net Caloric Value of methane in denominator. - P6 in Section D.1.1.1 is superfluous. - B10 in Section D.1.1.3 is inadequately described in column “data variable”. - B22 in Section D.1.1.3 is inadequately described in column “data unit”. - List of baseline emission sources on page 	<p>D.1.1</p>	<p><u>Response 1 dated 03/05/2010</u> Section B.3 has been updated. The rationale for excluding the consumption of dry gas at the GPP and the re-injection compressor has been modified. In the baseline scenario the dry gas (from APG) would have been flared anyway. Emissions from condensate combustion at end-users are included as a baseline emission source. Equation (P_III), (B_III), (B_IV) and variable P6 and B22 have been eliminated in order to be consistent with the modified list of emission sources in response to CAR 10. The description for B10 has been corrected. <u>Response 2 dated 04/06/2010</u> Section D.1 of the PDD has been updated to be consistent with the updated list of project and</p>	<p><u>Conclusion on Response 1</u> Response is accepted. However, additional issues of concern are included in CAR 12. <u>Verifier’s Note:</u> Section D.1 was substantially updated what is not highlighted in PDD and the response. <u>Conclusion on Response 2</u> Response is accepted. CAR is closed based on due amendment made to PDD.</p>



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
41 does not correspond to the updated table 8. - Formula B_III does not take into account the assumption that LPG replaces methane.		baseline emission sources in table 8. Formula B_III in Section D.1.1.3 of the PDD has been amended to take into account that LPG replaces methane.	
CAR 13. Please provide references to the relevant host Party environmental regulations	D.1.14	<u>Response 1 dated 03/05/2010</u> Section B.2 of the PDD has been updated. It now identifies the relevant regulations. <u>Response 2 dated 04/06/2010</u> Section D.1.5 of the PDD has been updated. All the environmental monitoring activities are driven by the requirements of the license agreement on the terms of mineral resources use.	<u>Conclusion on Response 1</u> Response is not accepted. For guidance, please refer to Guidelines for users of JI PDD Form (Version 04), Section D.1.5. <u>Conclusion on Response 2</u> Response is accepted. CAR is closed based on due amendment made to PDD.
CAR 14. It is not indicated if the above persons/entities are project participants listed in Annex 1 of PDD.	D.4.2	<u>Response 1 dated 03/05/2010</u> Section D.4 of the PDD has been updated. It is indicated that GreenStream Network and Royal Haskoning are not Project Participants.	<u>Conclusion on Response 1</u> Response is accepted. CAR is closed based on due amendment made to PDD.
CAR 15. Please list and attach the documentation to the PDD.	F.1.1	<u>Response 1 dated 03/05/2010</u> The following documents are listed in section	<u>Conclusion on Response 1</u> Response is accepted.



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		<p>F.1 of the PDD and have been provided to the validator: The Environmental Section of the Field Development Plan. The positive opinion from GlavGosExpertise #676-09/ГГЭ-6349/02 on the Field Development Plan. The Environmental and Social Impact Assessment conducted by the company ERM in November / December 2008.</p> <p><u>Response 2 dated 04/06/2010</u> Two sections of the Field Development Plan on “Measures on Environmental Protection” and on “Environmental Assessment” have been added to the references in section F.1 of the PDD.</p>	<p>CAR is closed based on due amendment made to PDD. Verifier’s received additionally the following Project Design documents: - Measures on environment protection (volume 6); - EIA (volume 12). They should be referenced in Section F.1. This has been done by Response 2</p>
<p>CAR 16. Please provide a list of attendees of the public hearings from which comments on the project have been received. Refer to PDD Section G.1.</p>	<p>G.1.1</p>	<p><u>Response 1 dated 03/05/2010</u> The Minutes of the public hearing including a participants list have been made available to the validator. This is mentioned in Section G of the PDD.</p>	<p><u>Conclusion on Response 1</u> Response is accepted. CAR is closed based on analysis of the minutes of the public hearings of the project provided to the verifier. No comments of concern are recorded. The participants</p>



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
			came to the conclusion to approve the project solutions and recommend to implementation.
<p>CL 01. Please clarify why re-injection pipelines and high-pressure compressors for APG/NG injection in gas reservoir not included in the list of the project equipment on p. 4 and 10. This equipment is sized to transport and compress APG as well.</p>	A.4.2.1	<p><u>Response 1 dated 03/05/2010</u></p> <p>The re-injection pipelines and high-pressure compressors will be constructed even in the absence of the project in order to enable the re-injection of dry gas from natural gas. The facilities have been sized in order to also enable the re-injection of dry gas from APG. Dry gas from APG accounts for approximately 42% of the re-injected dry gas between 2011 and 2030.</p> <p>Altogether there are four re-injection compressors. Two of them will be installed in 2011/2012 and have been included in the JI .</p> <p>Sections A.2 and A.4.2 of the PDD have been updated to clarify this.</p>	<p><u>Conclusion on Response 1</u></p> <p>Response is accepted.</p> <p>CL is closed based on comprehensible clarification included in PDD.</p>
<p>CL 02. Please clarify if training of operators of GPP and high pressure compressor train is envisaged.</p>	A.4.2.4	<p><u>Response 1 dated 03/05/2010</u></p> <p>UKNG is currently in the hiring phase for the GPP (Stage two: low temperature separation) and the re-injection compressors. All operators are required to have official certificates for work with high-pressure equipment. In addition all</p>	<p><u>Conclusion on Response 1</u></p> <p>Response is accepted.</p> <p>CL is closed based on comprehensible clarification included in PDD.</p>



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		<p>operators will receive training by the equipment manufacturers. The training is included as a contractual obligation into the equipment supply contracts.</p> <p>The above information has been included in section A.4.2 of the PDD.</p>	
<p>CL 03. Please clarify if the pressure in the gas reservoir will not rise above the original one when the amount of injected gas 288,94 MCM (2011) and 553,16 MCM (2012) exceeds the amount of produced natural gas 267,8 MCM and 445,2 MCM respectively. Note the data on the injected gas are taken from excel spreads heed made available to the verifier.</p>	<p>B.1.4</p>	<p><u>Response 1 dated 03/05/2010</u></p> <p>Natural gas has been extracted from the reservoir since 2005, while gas re-injection is only starting in September of 2010, and only with the injection of dry gas from APG there is a possibility that more gas will be re-injected into the natural gas reservoir than has been taken out. Up to at least 2015, more gas will be taken out of the reservoir than re-injected and the gas reservoir pressure will not rise above the original pressure during the Kyoto period. The actual pressure of the gas reservoir will be monitored as part of the monitoring plan and the company will ensure that the original pressure is not exceeded.</p> <p>Section B.1 has been updated accordingly. The supporting Excel spreadsheet will be updated to demonstrate the above dynamics.</p>	<p><u>Conclusion on Response 1</u></p> <p>Response is accepted.</p> <p>CL is closed based on comprehensible clarification included in PDD.</p>



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
<p>CL 04. Please clarify what is the likelihood of leakage from the project gas reservoir into the project oil reservoir.</p>	<p>B.3.1</p>	<p><u>Response 1 dated 03/05/2010</u></p> <p>Over millions of years a natural gas cap has formed above the oil reservoir. The two reservoirs are in equilibrium with each other. According to Henry’s Law, “The amount of a given gas dissolved in a given type and volume of liquid is directly proportional to the partial pressure of that gas in equilibrium with that liquid“ some gas is dissolved in the oil. When the oil is produced, the dissolved gas is recovered as APG.</p> <p>The pressure in the natural gas reservoir will be kept constant as much as possible, but surely not higher than the original pressure. (See also response to CL 3) Since there is equilibrium between the two reservoirs, there will be no gas inflow into the oil reservoir.</p> <p>In addition the structure of the combined oil & gas reservoir is such that the gas is in the North, the oil is in the South, the (small) overlap only occurs in the middle. The re-injection takes place in the North where there is no oil underneath the gas.</p> <p>Section B.3 of the PDD has been updated and a figure of the reservoir structure has been in-</p>	<p><u>Conclusion on Response 1</u></p> <p>Response is accepted.</p> <p>CL is closed based on comprehensible clarification included in PDD.</p>



Determination Report on JI project
 “Associated Petroleum Gas Flaring Reduction at Yarakta Oil Field, Irkutsk Region, Russia”

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in tables 1, 2, 3	Summary of project owner response	Determination team conclusion
		cluded as Annex 4 to the PDD.	
<p>CL 05. Please clarify if transboundary environmental impacts are considered significant by the project participant.</p>	<p>F.1.5</p>	<p><u>Response 1 dated 03/05/2010</u> Section F.1 of the PDD has been amended. The project is located 850 km from the Mongolian border and does not have any transboundary environmental impacts.</p>	<p><u>Conclusion on Response 1</u> Response is accepted. CL is closed based on comprehensible clarification included in PDD.</p>

Determination Report on JI project
“Construction of Combined-cycle plant of 410 MW at Nevinnomysskaya TPP”

Appendix B: Verification Team’s CV’s

Mr. Leonid Yaskin, PhD (thermal engineering)

Lead Verifier.

Bureau Veritas Certification Rus General Director, Climate Change Local Manager, Lead Auditor, IRCA Lead Tutor, Lead Verifier

He has over 30 years of experience in heat and power R&D, engineering, and management, environmental science and investment analysis of projects. He worked in Krrzhizhanovsky Power Engineering Institute, All-Russian Teploelectroproject Institute, JSC Energoperspectiva. He worked for 8 years on behalf of European Commission as a monitor of Technical Assistance Projects. He is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). He performed over 250 audits since 2002. Also he is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered OHSAS 18001 Lead Auditor Training Course. He is an Assuror of Social Reports. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of over 60 JI projects.

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

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

He has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead auditor of Bureau Veritas Certification for Environment Management System (IRCA registered), Quality Management System (IRCA registered), Occupational Health and Safety Management System, and Food Safety Management System. He performed over 140 audits since 1999. Also he is Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and Lead Tutor of the IRCA registered ISO 9000 QMS Lead Auditor Training Course. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and he is involved in the determination/verification of over 50 JI projects.