



JI VERIFICATION REPORT

- 3RD PERIODIC -

OJSC — OIL COMPANY ROSNEFT

**“ASSOCIATED PETROLEUM GAS FLARING REDUCTION AND
ELECTRICITY GENERATION AT THE KHASYREY OIL FIELD”**

Monitoring Period: 2010-01-01 – 2010-12-31
(incl. both days)

Report No: 8000392934- 11/096 V03

Date: 2011-05-14

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3rd Periodic Verification Report: "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field"

TÜV NORD JI/CDM Certification Program

P-No: 8000392934-11/096 V03



Verification Report:	Report No.	Rev. No.	Date of 1st issue:	Date of this rev.
	8000392934 - 11/096 V03	0	2011-05-14	2011-05-14
Project:	Title:	Jl Track:	Registration date:	ITL Project ID.:
	"Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field"	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2	-	-
Project Participant(s):	Host party:	Other involved parties:		
	Russian Federation	Netherlands		
Applied methodology/ies:	Title:	No.:	Scope:	
	Project specific methodology	N/A	1, 10	
Monitoring:	Monitoring period (MP):	No. of days:	MP No.	
	2010-01-01 to 2010-12-31 - both days included	365	3	
Monitoring report:	Title:	Draft version:	Final version:	
	"Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field"	Version 1 dt. 2011-08-02	Version 1.1 dt. 2011-04-05	
Verification team / Technical Review and Final Approval	Verification Team:	Technical review:	Final approval:	
	Evgeni Sud Ksenia Konofalova Rainer Winter	Walter Ulrich	Eric Krupp	
Emission reductions: [t CO_{2e}]	Verified amount	As per draft MR:	As per PDD:	
	113,268	113,268	129,687	
Summary of Verification Opinion:	<p>TÜV NORD JI/CDM Certification Program has carried out the 3rd periodic verification of the project: "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field", with regard to the relevant requirements for JI project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.</p> <p>The project stipulates the utilization of associated petroleum gas (APG), which would otherwise be flared, in order to produce electric power at new 33 MW Gas Power Center installed at Khasyrey oil field, Russian Federation. Khasyrey oil field belongs to the Gamburtsev swell oil fields. The company "RN-Severnaya Neft" LLC, owned by the OJSC "Oil Company Rosneft", is the operator of Gamburtsev swell oil fields. This verification covers the period from 2010-01-01 to 2010-12-31 (including both days).</p> <p>In the course of the verification 4 Corrective Action Requests (CAR) and 1 Clarification Requests (CR) were raised and successfully closed. No FARs have been raised to improve the monitoring system in the future.</p> <p>The verification is based on the hosted monitoring report (dated: 2011-02-08^{/MR1/}), final monitoring report (dated: 2011-04-05^{/MR1/}), the monitoring plan as set out in the registered PDD^{/PDD/}, the determination report^{/FDR/}, emission reduction calculation spreadsheet^{/XLS/} and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.</p> <p>As a result of this verification, the verification confirms that:</p> <ul style="list-style-type: none"> all operations of the project are implemented and installed as planned and described in the validated project design document; the monitoring plan is in accordance with the validated project specific monitoring plan developed for this project activity; the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately; the monitoring system is in place and functional. The GHG emission reductions were measured accurately. <p>As the result of the 3rd periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative</p>			

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	and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:		
	Baseline emissions:	255,951	t CO2e
	Project emissions:	142,684	t CO2e
	Leakage:	-	t CO2e
	Emission reductions:	113,268	t CO2e

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	2011-05-14 FVR Khasyrey 3rd verif	73

Abbreviations:

AIE	Accredited Independent Entity
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CO₂	Carbon dioxide
CO_{2eq}	Carbon dioxide equivalent
CL	Clarification Request
DVM	Determination and Verification Manual
ER	Emission Reduction
ERU	Emission Reduction Units
FAR	Forward Action Request
GHG	Greenhouse gas(es)
JI	Joint Implementation
JPA	JI programme activity
JPoA	JI programme of activities
MP	Monitoring Plan
MR	Monitoring Report
PDD	Project Design Document
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
XLS	Emission Reduction Calculation Spread Sheet

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1. INTRODUCTION

TÜV NORD JI/CDM Certification Program has carried out the 3rd periodic verification of the project

"Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field"

with regard to the relevant requirements for JI (Track 2) project activities. The verifiers have reviewed the implementation of the monitoring plan (MP) of the registered JI project.

GHG data for the monitoring period covering 2010-10-01 – 2010-12-31 were verified in detailed manner applying the set of requirements, audit practices and principles as required under the Determination and Verification Manual ^{/DVM/} of the UNFCCC.

This report summarizes the findings and conclusions of this 3rd periodic verification of the above mentioned project activity.

1.1. Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions. It includes the verification of the:

- implementation and operation of the project activity as given in the PDD,
- compliance with applied approved monitoring plan,
- data given in the monitoring report by checking the monitoring records, the emissions reduction calculation and supporting evidence,
- accuracy of the monitoring equipment,
- quality of evidence,
- significance of reporting risks and risks of material misstatements.

1.2. Scope

The verification of this registered project is based on the project design document ^{/PDD/}, the monitoring report ^{/MR/}, emission reduction calculation spread sheet ^{/XLS/}, supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- Article 6 of the Kyoto Protocol ^{/KP/},



- guidelines for the implementation of Article 6 of the Kyoto Protocol as presented in the Marrakech Accords under decision 9/CMP.1 ^{/MA/}, and subsequent decisions made by the JISC and COP/MOP,
- other relevant rules, including the host country (Russian Federation) legislation,
- JI Validation and Verification Manual ^{/DVM/},
- monitoring plan as given in the registered PDD ^{/PDD/}.

2. GHG PROJECT DESCRIPTION

2.1. Project Characteristics

Essential data of the project is presented in the Table 2-1.

Table 2-1: Project Characteristics

Item	Data
Project title	Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field
Ji Track	<input type="checkbox"/> Track 1 <input checked="" type="checkbox"/> Track 2 <input type="checkbox"/> JPA
Project size	<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale <input type="checkbox"/> N/A
Ji Approach	<input checked="" type="checkbox"/> Ji Specific Approach <input type="checkbox"/> Approved CDM Methodology
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/> 1 Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/> 2 Energy distribution
	<input type="checkbox"/> 3 Energy demand
	<input type="checkbox"/> 4 Manufacturing industries
	<input type="checkbox"/> 5 Chemical industry
	<input type="checkbox"/> 6 Construction
	<input type="checkbox"/> 7 Transport
	<input type="checkbox"/> 8 Mining/Mineral production
	<input type="checkbox"/> 9 Metal production
	<input checked="" type="checkbox"/> 10 Fugitive emissions from fuels (solid, oil and gas)
	<input type="checkbox"/> 11 Fugitive emissions from production and consumption of halocarbons and hexafluoride
	<input type="checkbox"/> 12 Solvents use
	<input type="checkbox"/> 13 Waste handling and disposal
	<input type="checkbox"/> 14 Land-use, land-use change and forestry
	<input type="checkbox"/> 15 Agriculture
Approved CDM Meth:	Project specific methodology
Technical Area(s):	K
ITL Project ID No.:	-
Crediting period	<input type="checkbox"/> Renewable Crediting Period (7 y) <input checked="" type="checkbox"/> Fixed Crediting Period is 5 years (01/01/2008– 31/12/2012)

2.2. Project Verification History

Essential events since the registration of the project are presented in the following Table 2-2.

Table 2-2: Project verification history

#	Item	Time	Status
1	Date of registration/issuance of the HCA	20XX-XX-XX	<i>Project registered</i>
2	Start of crediting period	2008-01-01	<i>ongoing</i>
3	1 st Monitoring period	2008-01-01 – 2008-12-31	<i>ongoing</i>
4	2 nd Monitoring period	2009-01-01 –	<i>ongoing</i>

#	Item	Time	Status
		2009-12-31	
5	3 rd Monitoring period	2010-01-01 – 2010-12-31	ongoing

2.3. Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-3).

Table 2-3: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	Russian Federation	OJSC "Oil Company Rosneft"
Other involved party/ies	Netherlands	Carbon Trade & Finance Sicar S.A.

The OJSC "Rosneft" is the leader of the Russian petroleum industry, and ranks among the world's top publicly traded oil and gas companies. The Company is primarily engaged in hydrocarbon exploration and production, production of petroleum products and petrochemicals and marketing of these outputs. The company "RN-Severnaya Neft" LLC, owned by the OJSC "Oil Company Rosneft", is the operator of Gamburtsev swell oil fields.

2.4. Project Location

The details of the project location are given in table 2-4:

Table 2-4: Project Location

No.	Project Location
Host Country	Russian Federation
Region:	Nenets Autonomous Okrug
Project location address:	The oil fields are located approx 350 km. from Usinsk
Latitude:	N/A
Longitude:	N/A

2.5. Technical Project Description

The project stipulates the utilization of associated petroleum gas (APG), which would otherwise be flared, to produce electric power at new 33 MW Gas Power Center installed at Khasyrey oil field, located on Gamburtsev Swell in the Nenets Autonomous Okrug (area).

The technical key data are provided in the table 2-5 below:

Table 2-5: Technical data of the project activity

Key parameters:	Project Activity				
Equipment	Gas Turbine Unit	Gas Turbine Unit	Gas Turbine Unit	Gas Turbine Unit	Gas Turbine Unit
Manufacturer:	Siemens	Siemens	Siemens	Siemens	Siemens
Type	TYPHOON	TYPHOON	TEMPEST	TEMPEST	TEMPEST
Manufacturing / Commissioning Date:	11.2005	11.2005	09.2006	06.2007	07. 2009
capacity	4.7 MW	4.7 MW	7.9 MW	7.9 MW	7.9 MW
Fuel Type:	Dual fired: APG and diesel	Dual fired: APG and diesel	APG	APG	Dual fired: APG and diesel

The Project will result in the useful utilization of APG, which would otherwise be flared. This will reduce CO₂ and CH₄ emissions from two sources:

- Reduction of the CO₂ emissions from diesel fuel combustion. This is because the electricity for the own needs of the production facilities is generated by the APG-fired gas turbines (GTUs). In the baseline scenario the same amount of the electricity would have been generated by the diesel fired generators.
- CH₄ Emissions will be reduced due to the more complete/efficient combustion of APG in gas turbines as compared to the flaring equipment with a lower flaring efficiency.

2.6. Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the monitoring report
- A desk review of the Monitoring Report submitted by the client and additional supporting documents with the use of customised verification protocol ^{/CPM/} according to the Determination and Verification Manual ^{/DVM/},
- Verification planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,

- Draft verification reporting
- Resolution of corrective actions (if any)
- Final verification reporting
- Technical review
- Final approval of the verification.

The sequence of the verification is given in the table 3.1 below:

Table 3.1: Verification sequence

Topic	Time
Assignment of verification	2011-02-23
Uploading of Monitoring Report	-
On-site visit	From 2011-03-22 till 2011-03-24
Draft reporting finalised	2011-03-23
Technical review finalised	2011-05-02
Final reporting finalised	2011-05-14

2.7. Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

2.8. Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader and 2 additional team members, was appointed. Furthermore also the personnel for the technical review and the final approval was determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-1 below.

Table 3-1: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence	Technical competence ⁴⁾	Host country Competence	Team Leading competence
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Evgeni Sud	TÜV Nord Cert GmbH	TL	A	<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Rainer Winter	TÜV Nord Cert GmbH	TM	SA	<input checked="" type="checkbox"/>	K	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	K. Konofalova	TÜV Nord Russia (OOO «PARITET»)	TM	TE	<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Walter Ulrich	TÜV Nord Cert GmbH	TR ³⁾	A	<input checked="" type="checkbox"/>	K	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Eric Krupp	TÜV Nord Cert GmbH	TR, FA ³⁾	SA	<input type="checkbox"/>	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>

¹⁾ TL: Team Leader; TM: Team Member, TR: Technical review; FA: Final approval

²⁾ GHG Auditor Status: A: Assessor; E: Expert; SA: Senior Assessor; T: Trainee; TE: Technical Expert

³⁾ No team member

⁴⁾ As per S01-MU03 or S01-VA070 A2 (such as A, B, C.....)

2.9. Publication of the Monitoring Report

In accordance with decision 9/CMP.1 (§ 36) the draft monitoring report, as received from the project participants, has been made publicly available on the dedicated UNFCCC JI website prior to the verification activity commenced (relevant for Track 2 projects only). Comments received are taken into account in the course of the verification, if applicable.

The publication of the Draft Monitoring report is not required by the Host Country Track 1 procedures.

2.10. Verification Planning

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Risk analysis and detailed audit testing planning

For the identification of potential reporting risks and the necessary detailed audit testing procedures for residual risk areas table A-1 is used. The structure and content of this table is given in table 3-2 below.

Table 3-2: Table A-1; Identification of verification risk areas

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)
<i>The following potential risks were identified and divided and structured according to the possible areas of occurrence.</i>	<i>The potential risks of raw data generation have been identified in the course of the monitoring system implementation. The following measures were taken in order to minimize the corresponding risks. The following measures are implemented:</i>	<i>Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of every verification.</i>	<i>The additional verification testing performed is described. Testing may include:</i> <ul style="list-style-type: none"> - Sample cross checking of manual transfers of data - Recalculation - Spreadsheet 'walk throughs' to check links and equations - Inspection of calibration and maintenance records for key equipment - Check sampling analysis results <i>Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.</i>	<i>Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.</i>

The completed table A-1 is enclosed in the annex 1 (table A-1) to this report.

Project specific periodic verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific verification protocol has been developed. The protocol shows, in a

transparent manner, criteria and requirements, means and results of the verification. The verification protocol serves the following purposes:

- It organises, details and clarifies the requirements a JI project is expected to meet for verification
- It ensures a transparent verification process where the verifying AIE documents how a particular requirement has been proved and the result of the verification.

The basic structure of this project specific verification protocol for the periodic verification is described in table 3-3.

Table 3-3: Structure of the project specific periodic verification checklist

Table A-2: Periodic verification checklist						
No.	DVM¹ paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to project participant (CAR, CL, FAR)	Review of PP's action	Conclusion
<i>Number of the checklist item</i>	<i>The section gives a reference to the relevant paragraph of the DVM. The checklist items are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further subdivided as per the requirements of the topic and the individual project activity.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the initial assessment of the verification team and how the assessment was carried out.</i>	<i>Gives reference to the information source on which the assessment is based on.</i>	<i>Assessment based on evidence provided if the criterion is not fulfilled a CAR, CL or FAR (details of each finding are elaborated in chapter 4) is raised otherwise no action is requested. The assessment refers to the draft verification stage.</i>	<i>Assessment based on the project participant action in response to the raised CAR, CL or FAR (details of each finding are elaborated in chapter 4). The assessment refers to the final verification stage.</i>	<i>Final assessment at the final verification stage is given.</i>

The periodic verification checklist (verification protocol) is the backbone of the complete verification starting from the desk review until final assessment. Detailed

¹ JISC 19 Annex 4

assessments and findings are discussed within this checklist and not necessarily repeated in the main text of this report.

The completed verification protocol is enclosed in the annex (table A-2) to this report.

2.11. Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the last revision of the PDD including the monitoring plan^{/PDD/},
- the last revision of the determination report^{/DET/},
- the monitoring report, including the claimed emission reductions for the project^{/MR/},
- the emission reduction calculation spreadsheet^{/XLS/}.

Other supporting documents, such as publicly available information on the UNFCCC / host country website and background information were also reviewed.

2.12. On-site assessment

As most essential part of the verification exercise it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with the applicable criteria. Furthermore the on-site assessment is necessary to check the monitoring data with respect to accuracy to ensure the calculation of emission reductions. The main tasks covered during the site visit include, but are not limited to:

- The on-site assessment included an investigation of whether all relevant equipment is installed and works as anticipated.
- The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- The duly calibration of all metering equipment was checked.
- The monitoring processes, routines and documentations were audited to check their proper application.
- The monitoring data were checked completely.
- The data aggregation trails were checked via spot sample down to the level of the meter recordings.

Before and during the on-site visit the verification team performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of the Project Participant as well as those of the JI consultant were interviewed. The main topics of the interviews are summarised in Table 3-4.

Table 3-4: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
1. Projects & Operations Personnel, Project Participant(s)	<ul style="list-style-type: none">- General aspects of the project- Technical equipment and operation- Changes since validation- Monitoring and measurement equipment- Remaining issues from validation- Calibration procedures- Quality management system- Involved personnel and responsibilities- Training and practice of the operational personnel- Implementation of the monitoring plan- Monitoring data management- Data uncertainty and residual risks- GHG emission reduction calculation- Procedural aspects of the verification- Maintenance- Environmental aspects

2.13. Draft verification reporting

On the basis of the desk review, the on-site visit, follow-up interviews and further background investigation the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list of the verification findings form the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

2.14. Resolution of CARs, CLs and FARs

Nonconformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is issued if:

- information is insufficient or not clear enough to determine whether the applicable JI requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification pl. refer to chapter 4.

2.15. Final reporting

Upon successful closure of all raised CARs and CLs the final verification report including a positive verification opinion can be issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

2.16. Technical review

Before submission of the final verification report a technical review of the whole verification procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

2.17. Final approval

After successful technical review an overall (esp. procedural) assessment of the complete verification will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the request for issuance can be started.

3. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report^{/MR/}, the calculation spreadsheet^{/XLS/}, PDD^{/PDD/}, the Determination Report^{/DET/} and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

The summary of CAR, CL and FAR issued are shown in Table 4-1:

Table 4-1: Summary of CAR, CL and FAR

Verification topic	No. of CAR	No. of CL	No. of FAR
A – Project Approvals	1	0	0
B – Project Implementation	0	1	0
C – Monitoring Plan Compliance	1	0	0
D – Monitoring Plan Revision	0	0	0
E – Data Management	1	0	0
F – PoA Verification	0	0	0
SUM	4	1	0

The following tables include all raised CARs, CLs and FARs and the assessments of the same by the verification team. For an in depth evaluation of all verification items it should be referred to the verification protocols (see Annex).

Finding	A1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Letter of Approval from all parties involved are pending.		

Finding	A1
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>On 4th March 2010 the application for the project was submitted to Sberbank of Russia according to the current procedure for JI projects consideration and approval in Russia (Decree of the Government # 843 from 28 October 2009). The issuance of the Russian LoA is expected in April 2010. Then the LoA from the Investor country will be received.</p> <p>The Declaration of Approval from State of the Netherlands, acting through the Ministry of Economic Affairs, Agriculture and Innovation and its implementing agency "NL Agency", being the Designated Focal Point for Joint Implantation (JI) in The Netherlands has been received for the project by 5th April 2011.</p>
AIE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.</i>	
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

Finding	B1
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>a) Please provide further information about the maintenance of the GTUs.</p> <p>b) Further information is required about the procedure for applying the NCV values in the monitoring system of the gas turbines.</p>

Finding	B1
<p>Corrective Action #1</p> <p><i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i></p>	<p>According to the information from RN-Severnaya Neft received by 30/03/2011:</p> <ul style="list-style-type: none"> - Siemens has not determined the limits for NCV of APG used as fuel for gas turbines. - During 2010 the values of NCV has changed from 7798.19 ccal/m³ to 9460.08 ccal/m³. - The correction of gas turbines operation depending on NCV of APG is performed by Siemens during preventive maintenance. RN-Severnaya Neft does not have detailed information about. <p>In a schedule of maintenance for 2010 provided by 30/03/2011 it is noted that Maintenance form #4 is performed by Siemens, LLC. This work as scheduled to be done once a year on each turbine at the end of the year.</p> <p>It should be furthermore noted that according to the "Standard for applying the concept of materiality in verifications" adopted at twenty-second meeting of the JISC the materiality threshold (item B.4 (b)) is two percent with annual average emission reductions by sources amounting to 100.000 tones per year or more.</p> <p>Thus for considered project the threshold of materiality is 2.265 tones CO₂eq (which are 2% of emission reduction of 113.268 tones CO₂eq for 2010). To assess the impact of the issue to the ERUs amount the analysis has been made:</p> <p>Based on analysis of the scale of fluctuation of net calorific value of APG the assumption was made that volume of APG consumed in gas turbines could be 1,21 times less than indicated (9460.08 ccal/m³ divided by 7798.19 ccal/m³), i.e. 54096,694 ths m³. All other parameters was left unchanged. The resulting ERUs would be 111,401 tones of CO₂eq which is just 1.867 tones CO₂eq less than normally estimated.</p> <p>It indicates that applied methodology for the emission reduction calculation is reliable and conservative because difference in ERUs in this case is only resulted from methane emissions in the baseline due to underburning. However the changes in NCV values are connected predominately with content of higher hydrocarbons like propane and butane while content of methane remains practically same year to year.</p> <p>Therefore the possible uncertainty in the definition of NCV in the Siemens gas turbine control system does not impact to the ERUs of the project in the material scale.</p>

Finding	B1
AIE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.</i>	<p>In response to the raised CL the PP has explained that the maintenance of the GTUs is carried out by the manufacturer (Siemens) on a regular basis.</p> <p>According to the technical documentation of the GTUs the frequency of the maintenance work and the scope of the maintenance work are regulated by the maintenance schedule of the manufacturer. During the on-site inspection the PP was able to evidence that the same is duly carried by the manufacturer.</p> <p>In this context it should be noted that within the regular maintenance works the operation of the gas turbines is checked by the manufacturer with regards to the changes of the NCV of the APG. In doing so, it is ensured that the GTUs are operated in a most efficient manner in respect to the variation of the NCV of the fuel.</p> <p>The applied monitoring frequency of the NCV (i.e. quarterly) is in line with the provisions of the PDD. It is also important to note that NCV was included in the monitoring plan^{/PDD/} in order to determine the APG consumption of the GTUs. However in fact the gas consumption is determined (automatically) by the IT supported system of the GTUs. The same has been duly explained in the monitoring report. Though the NCV of the APG is continued to be monitored it is not (more) used in the calculation of the emission reductions.</p> <p>In addition the PP has demonstrated that the variation of the NCV does not result in the inconsistency with regard to the "Standard for applying the concept of materiality in verifications" adopted at twenty-second meeting of the JISC. In doing so, the PP has determined the impact of the NCV changes on the amount of the emission reductions. It could be shown that it is within the threshold of materiality as defined by the above mentioned standard. The calculation has been reviewed and found plausible.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding	C1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The diesel consumption at DPPs of Cherpayu indicated in the monitoring report in October is not in line with the provided evidences. The PP may revise the monitoring report accordingly.</p>

Finding	C1
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The correction has been made in the calculation spreadsheet and monitoring report. New version was issued: version 1.1 of 05/04/2011.
AIE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.</i>	The diesel consumption at DPPs of Cherpayu has been corrected in accordance with the data given in the documented evidences. The observed deviation was of a very minor significance (typo). Due to this the amount of the calculated emission reductions has not changed after the correction was done.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding	E1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	During the onsite visit it was observed that Power Engineering department is responsible for the data collection and the reporting of the APG consumption. This deviates from the information given in the monitoring report.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The correction has been made in the monitoring report. New version was issued: version 1.1 of 05/04/2011.
AIE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.</i>	The monitoring report has been changed according to the made observation. The monitoring of the APG was assessed as appropriate. Please refer to the section C.3 of the Annex.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding	E2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The PP has introduced the internal audits with regard to the monitoring parameters. The audit results are summarized in the audit reports.</p> <p>However, the information about the introduced corrections/corrective action has not been provided in the audit report.</p>

3rd Periodic Verification Report: "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field"

TÜV NORD JI/CDM Certification Program

P-No: 8000392934-11/096 V03



Finding	E2
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The correction has been made in the monitoring report. New version was issued: version 1.1 of 05/04/2011.</p>
AIE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and AIE assessments (#2, #3, etc.) shall be added.</i>	<p>The verification team confirms that deficiencies identified in the internal audits have been taken into account. Though the undertaken corrections were not indicated in the internal audit reports the monitoring report was corrected accordingly.</p> <p>The reports of the internal audits have been provided. The identified deficiencies were of a minor significance and didn't occur systematically.</p> <p>It should be also noted that the internal audits have been introduced in addition to the provisions of the monitoring in plan in the PDD.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements </p>

4. SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CRs are closed out. For details of the assessments pl. refer to the discussion of the verification findings in chapter 4 and the verification protocol (Annex 1).

4.1. Implementation of the project

During the verification a site visit and document review was carried out. Based on this it can be confirmed that w.r.t. the realized technology, the project equipments, as well as the monitoring and metering equipment, the project has been implemented and operated as described in the determined project design document and monitoring plan^{/TS//PDD/}.

4.2. On-site audits

As a part of the verification, the verification team has carried out the on-site audits by the PP (OJSC "Oil Company Rosneft") and the laboratory (Nauka II).

4.3. Project history

During the determination the AIE might have raised issues that could not be closed or resolved during the validation stage. For this purpose FARs might have been raised. This is a third verification. No FARs were raised in the previous verification.

4.4. Special events

No special events with effect on the monitoring of the project have been observed during the monitoring period.

4.5. Compliance with the monitoring plan

The project activity applies a project specific methodology. The monitoring plan provides an Excel calculation spreadsheet. This spreadsheet contains defined and validated formulae for calculation of emission reductions. In addition, the monitoring plan provides an explanation and guidance on the application of the developed calculation tool.

The verification team has reproduced the calculation of emission reductions based on the provided parameters and the amount of the emission reductions has been verified. The applied spreadsheet has also been reviewed and examined. It has been

verified that the formulae and procedures as defined within the monitoring plan have been appropriately applied.

The GHG data management is in line with the procedures indicated in the monitoring plan of the PDD. The procedures for data collecting and recording is in line with requirements of the monitoring plan and is carried out by the responsible personnel.

The calculation of the ERUs in the corresponding Excel spreadsheet has been appropriately carried out. The minor deficiencies identified in the course of the verification have been duly corrected.

Deviations to the validated monitoring plan have been transparently listed in the monitoring report. The deviations do not have an impact on the accuracy of the calculated emission reductions and have been accepted by the verification team.

4.6. Monitoring parameters

During the verification all relevant monitoring parameters (as listed in the PDD) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist.

As a result, it can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.

Changes have been made in order to adapt the monitoring plan for existing system of data collection. All other parameters and formulae are the same as it mentioned in the PDD.

The electricity generation was less than it has been predicted in PDD that is why the amount of burnt APG has been reduced in comparison with planned. Also a small consumption of diesel fuel by DPPs and by gas turbines of Power-producing center have taken place which was not planned in the PDD. It caused the decrease in emission reductions of GHGs in 2010. According to PDD the expected emission reduction in 2010 is 129,687 tons of CO₂, but actually the emission reduction is 113,268 tons of CO₂.

4.7. Monitoring report

A draft monitoring report^{/MR-1/} was submitted to the verification team by the project participants.

During the verification, mistakes and needs for clarification were identified. The PP has carried out the requested corrections so that it can be confirmed that the monitoring report^{/MR/} is complete and transparent and in accordance with the registered PDD and other relevant requirements.

4.8. ER Calculation

During the verification CAR C1 has been raised due to slight deviation of the applied value. Excel spreadsheet has been corrected and CAR C1 has been closed. Thus it is confirmed that the ER calculation is overall correct.

4.9. Quality Management

Quality Management procedures for measurements, collection and compilation of data, data storage and archiving, calibration, maintenance and training of personnel in the framework of this JI project activity have been defined. The procedures defined can be assessed as appropriate for the purpose. No significant deviations thereof have been observed during the verification.

The above mentioned procedures have been embedded in the Environment Management System (ISO 14001).

4.10. Overall Aspects of the Verification

All necessary and requested documentation was provided by the project participants so that a complete verification of all relevant issues could be carried out.

Access was granted to all installations of the plant which are relevant for the project performance and the monitoring activities.

No issues have been identified indicating that the implementation of the project activity and the steps to claim emission reductions are not compliant with the UNFCCC / host country criteria and relevant guidance provided by the COP/CMP and the JISC (clarifications and/or guidance).

4.11. Hints for next periodic Verification

No FARs were raised.

5. VERIFICATION OPINION

TÜV NORD JI/CDM Certification Program has carried out the 3rd periodic verification of the project: "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field", with regard to the relevant requirements for JI project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria refer to the Kyoto Protocol Article 6 criteria and the Guidelines for the implementation of Article 6 of the Kyoto Protocol as agreed in the Marrakech Accords.

The project stipulates the utilization of associated petroleum gas (APG), which would otherwise be flared, in order to produce electric power at new 33 MW Gas Power Center installed at Khasyrey oil field, Russian Federation. Khasyrey oil field belongs to the Gamburtsev swell oil fields. The company "RN-Severnaya Neft" LLC, owned by the OJSC "Oil Company Rosneft", is the operator of Gamburtsev swell oil fields. This verification covers the period from 2010-01-01 to 2010-12-31 (including both days).

In the course of the verification 4 Corrective Action Requests (CAR) and 1 Clarification Requests (CR) were raised and successfully closed. No FARs have been raised to improve the monitoring system in the future.

The verification is based on the hosted monitoring report (dated: 2011-02-08^{/MR1/}), final monitoring report (dated: 2011-04-05^{/MR/}), the monitoring plan as set out in the registered PDD^{/PDD/}, the determination report^{/FDR/}, emission reduction calculation spreadsheet^{/XLS/} and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

As a result of this verification, the verification confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document;
- the monitoring plan is in accordance with the validated project specific monitoring plan developed for this project activity;
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately;
- the monitoring system is in place and functional. The GHG emission reductions were measured accurately.

As the result of the 3rd periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Baseline emissions:	255,951	t CO ₂ e
Project emissions:	142,684	t CO ₂ e
Leakage:	-	t CO ₂ e
Emission reductions:	113,268	t CO₂e

Essen 2011-05-14

Evgeni Sud

TÜV NORD JI/CDM CP

Verification Team Leader

Essen 2011-05-14

Eric Krupp

TÜV NORD JI/CDM CP

Final Approval

6. REFERENCES

Table 6-1: Documents provided by the project participant(s)

Reference	Document				
/APG/	Consumption of the associated petroleum gas by the GTUs at the Khasyrey power producing center in the time period between 2010-01-01 and 2010-12-31				
/CAL-Chr/	Calibration certificates of the chromatographs applied by the independent laboratory “Nauka II”				
	Measurement device	Type	Serial No.	Date of the last calibration	Date of the next calibration
	Chromatograph	LXM-80	71	2010-08-31	2011-08-31
	Chromatograph	LXM-80	280	2010-08-31	2011-08-31
/Chro/	Chemical composition of APG as per the measurements carried out by an independent laboratory – Nauka II in the time period between 2010-01-01 and 2010-12-31				
/DPP-C/	Diesel consumption DPP Cherpaju in the time period between 2010-01-01 and 2010-12-31 including the monthly write-off certificates and crosscheck calculations				
/DPP-K/	Diesel consumption DPP Khasyrey in the time period between 2010-01-01 and 2010-12-31 including the monthly write-off certificates and crosscheck calculations				
/DPP-N/	Diesel consumption DPP Nadeju in the time period between 2010-01-01 and 2010-12-31 including the monthly write-off certificates and crosscheck calculations				
/Elec/	Data of the electricity generation and output in the time period between 2010-01-01 and 2010-12-31				
/GrTab/	Certified measurements conversion table				
/GTU-D/	Diesel consumption at GTU Khasyrey in the time period between 2010-01-01 and 2010-12-31				
/FDR/	Final Determination Report, dated 06.08.2009 Associated petroleum gas flaring reduction and electricity generation at the Khasyrey Oil Field”				

Reference	Document
/IAR/	Internal audit reports dated 2010-06-21 and 2010-10-29
/Inv-B/	Inventory books including the measurements of the reservoir level and diesel amount at the Cherpaju, Khasyrey and Nadeju sites for the time period between 2010-01-01 and 2010-12-31
/ISO/	ISO 14001:2004 certificate
/Lab-1/	Accreditation certificate of the Laboratory Nauka II valid till 08.10.2012
/Lab-2/	Training certificates and authorisations of the laboratory personnel involved in the analysis of the APG components in the time period between 2010-01-01 and 2010-12-31
/LoA/	Letter of Approval of the Netherlands DFP. Dated 2011-04-05
/Mt-APG/	Technical specification for the APG metering equipment as per the manufacturer including the detailed information of the main system components and algorithm for calculation of APG consumption.
/Mt-D/	Technical specification for the diesel metering equipment
/Mt-E/	Technical specification for the electricity metering equipment (Type SET-4TM.02.2) including the information about the initial verification (calibration) and verification interval
/MR-1/	Monitoring report of GHGs emission reductions (01.01.2010 – 31.12.2010) "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field" dated 2011-02-08
/MR/	Monitoring report of GHGs emission reductions (01.01.2010 – 31.12.2010) "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field" dated 2011-04-05
/PDD/	Project Design Document Version 5 dated 05.08.2009 "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey Oil Field"
/Tr/	The JI monitoring procedures for the project activity "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey Oil Field"
/TS/	Technical specification of the installed Gas Turbine Units (GTUs)
/XLS/	ERU Excel calculation spreadsheet

Table 6-2: Background investigation and assessment documents

Reference	Document
/B-1/	Emission reductions in the natural gas sector through project-based mechanisms, IEA Information paper, 2003
/B-2/	Using Russia's Associated Gas, Prepared for the Global Gas Flaring Reduction Partnership and the World Bank, By PFC Energy, December 10 2007
/B-3/	National Communication by Russian Federation
/B-4/	Progress report submitted by Russian Federation
/B-5/	Joint Implementation Handbook for Russian companies, German Energy-Agency (Deutsche Energie-Agentur GmbH (dena) 2008
/B-6/	Resolution of Ministry of Natural Resources of the Russian Federation No. 13 dated 27.03.2001 and Resolution of Administration of the Nenets Autonomous Okrug No. 03-20/1388 dated 02.04.2001
/B-7/	Federal Law No. 7-F3 "On Environmental Protection" dated 10.01.2009
/B-8/	Federal Law No. 96-F3 "On Atmospheric Air Protection" dated 04.05.1999
/B-9/	Resolution No. 410 of the Russian Government dated 01.07.2005
/B-10/	Regulations on environmental impact assessment of the planned economic and other activities in the Russian Federation (Order No. 372 of Department of Environmental Protection of the Russian Federation, approved on 16.05.2000)
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/DVM/	JI Determination and Verification Manual JISC 19 Annex 4
/GBM/	Guidance on Criteria for baseline setting and monitoring
/GCP/	Guidelines for users of the Joint Implementation project design document form (version 03)
/GJI/	Guidelines for the implementation of Article 6 of the Kyoto Protocol as per 9/CMP.1

Reference	Document
/IPCC-GP/	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
/IPPC-RM/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
/TA/	Tool for the demonstration and assessment of additionality (Ver.4 – Ver. 5.2).

Table 6-3: Websites used

Reference	Link	Organisation
/dfp/	http://www.economy.gov.ru/wps/wcm/connect/economylib/mert/welcome/economy/kiorealize/analiticmath/	Ministry of Economic Development of the Russian Federation
/gzdt/	http://www.gov.cn/gzdt/2005-12/30/content_142048.htm	Guiding List on Energy Industry Restructure
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/nzif/	http://www.zifnn.com/multifunction-meters/set-4tm.03m-set-4tm.02.2m.html	Official website of Nizhny Novgorod Factory named after M.V.Frunze
/sn/	http://www.rosneft.com/Upstream/ProductionAndDevelopment/timano-pechora/severnaya_neft/	Official website of the "Oil Company Rosneft"
/unfccc/	http://cdm.unfccc.int	UNFCCC

Table 6-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	V. N. Lukashow	Environmental Protection Department "RN-Severnaya Neft" LLC
/IM01/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms	G. Arteminko	Engineer 1 st category of the Environmental Protection Department "RN-Severnaya Neft" LLC
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	K. Zhidkov	Chief of the Oil and Gas Treatment department "RN-Severnaya Neft" LLC
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	S. Elizarov	Engineer of the Oil and Gas Treatment department "RN- Severnaya Neft" LLC
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	A. Konovalov	Deputy of the chief of the Power Engineering department "RN- Severnaya Neft" LLC
/IM01/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms	T. Barashkina	Chief of the analytical department of Laboratory "Nauka II"
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	K. Myachin	Carbon projects manager CTF Consulting

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Verification Protocol
- A2:** Appointment / Authorisation statements

ANNEX 1: VERIFICATION PROTOCOL

Table A-1: GHG calculation procedures and management control testing / detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
Raw data generation				
<ul style="list-style-type: none"> • Installation of measuring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Exchange of equipment • Change of measurement equipment characteristic • Insufficient accuracy • Change of 	<ul style="list-style-type: none"> • Installation of modern and state of the art equipment • Process control automation • Internal data review • Regular visual inspections of installed equipment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment 	<ul style="list-style-type: none"> • Inadequate installation / operation of the monitoring equipment • Inadequate exchange of equipment • Change of personnel • Undetected measurement errors • Inappropriateness of Management system procedures w.r.t. monitoring plan requirements (e.g. substitute value strategies) • Non-application of management system procedures 	<ul style="list-style-type: none"> • Site – visit (maintenance dept., gas supplier) • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees • Check of calibration records, if applicable • Check of maintenance records • Counter-check of raw data and commercial data • Check of JI management system 	<ul style="list-style-type: none"> • See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> technology Accuracy of values supplied by Third Parties 	<ul style="list-style-type: none"> Stand-by duty is organized Training Internal audit procedures Internal check of QA/QC measures of involved Third Parties 	<ul style="list-style-type: none"> Insufficient accuracy Inappropriate QA/QC measures of Third Parties 	<ul style="list-style-type: none"> Check of JI related procedures Application of JI management system procedures Check of trainings Check of responsibilities Check of QA/QC documentation / evidences of involved Third Parties 	
Raw data collection and data aggregation				
<ul style="list-style-type: none"> Wrong data transfer from raw data to daily and monthly aggregated reporting forms IT Systems Spread sheet programming Manual data transmission 	<ul style="list-style-type: none"> Cross-check of data Plausibility checks of various parameters. Appropriate archiving system Clear allocation of responsibilities Application of JI Management system procedures 	<ul style="list-style-type: none"> Unintended usage of old data that has been revised Incomplete documentation Ex-post corrections of records Ambiguous sources of information Non-application of management system procedures 	<ul style="list-style-type: none"> Check of data aggregation steps Counter-calculation Data integrity checks by means of graphical data analysis and calculation of specific performance figures Check of management system certification 	<ul style="list-style-type: none"> See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> Data protection Responsibilities 	<ul style="list-style-type: none"> Usage of standard software solutions (Spreadsheets) Limited access to IT systems Data protection procedures 	<ul style="list-style-type: none"> Manual data transfer mistakes Unintended change of spread sheet programming or data base entries Problems caused by updating/upgrading or change of applied software 	<ul style="list-style-type: none"> Check of data archiving system Check of application of Management system procedures 	
Other calculation parameters				
<ul style="list-style-type: none"> Emission factors, oxidation factors, coefficients 	<ul style="list-style-type: none"> The values and data sources applied are defined in the PDD and monitoring plan 	<ul style="list-style-type: none"> Unintended or intended Modification of calculation parameters Wrong application of values Misinterpretations of the applied methodology and/ or the PDD Missing update of applicable regulatory framework (e.g. IPCC values) 	<ul style="list-style-type: none"> Update-check of regulatory framework Countercheck of the applied MP in the MR against the approved version 	<ul style="list-style-type: none"> See Table A-2
Calculation Methods				

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> Applied formulae Miscalculation Mistakes in spread-sheet calculation 	<ul style="list-style-type: none"> Advanced calculation and reporting tools A JI coordinator is in charge of the JI related calculations Usage of tested / counterchecked Excel spreadsheets Involvement of external consultants 	<ul style="list-style-type: none"> The danger of miscalculation can only be minimized. 	<ul style="list-style-type: none"> Countercheck on the basis of own calculation. Spread sheet walk-through. Plausibility checks Check of plots 	<ul style="list-style-type: none"> See Table A-2
Monitoring reporting				
<ul style="list-style-type: none"> Data transfer to the author of the monitoring report Data transfer to the monitoring report Unintended use of outdated versions 	<ul style="list-style-type: none"> An experienced JI consultant is responsible for monitoring reporting. JI QMS procedures are defined 	<ul style="list-style-type: none"> The danger of data transfer mistakes can only be minimized Inappropriate application of QMS procedures 	<ul style="list-style-type: none"> Counter check with evidences provided. Audit of procedure application 	<ul style="list-style-type: none"> See Table A-2

Table A-2: (Project specific) Periodic Verification Checklist

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
A	Project Approvals by Parties involved					
A.1	<i>DVM § 90</i> Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	<p><i>Description:</i> This is the third verification. The Letter of Approval of the Host Country^{HCA/} (Russia) has not been issued by the Russian DFPs.</p> <p>The Letter of Approval (LoA) of the Investor Party (Netherlands) was received.</p> <p><i>Means of determination:</i></p> <p>Based on the provided Letter of Approval of the Investor Country^{LoA/} (Netherlands) it could be verified that Letter of Approval has been issued by the corresponding DFPs.</p> <p><i>Conclusion:</i></p> <p>CAR A1 was raised due to the pending Host Country Approval.</p>	LoA /dfp/	CAR A1		
A.2	<i>DVM § 91</i> Are all the written project approvals by Parties involved	<p><i>Description:</i> This is the third verification. The Letter of Approval of the Host Country^{HCA/} (Russia) has not been issued by the corresponding DFPs.</p>	LoA	CAR A1		

² JISC 19 Annex 4

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	unconditional?	<p>The approval of the Investor Party is unconditional.</p> <p><i>Means of determination:</i></p> <p>Based on the provided LoA of the Investor Party it could be verified that the approval of the Investor Party is unconditional.</p> <p><i>Conclusion:</i></p> <p>CAR A1 was raised due to the pending Host Country Approval.</p>				
B	Project implementation					
B.1	<p><i>DVM § 92</i></p> <p>Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?</p>	<p><i>Description:</i></p> <p>The project stipulates the utilization of associated petroleum gas (APG), which would otherwise be flared in order to produce electric power at new 33 MW Gas Power-Producing Center installed at Khasyrey oil field, located on Gamburtsev Swell in the Nenets Autonomous Okrug (area), Russian Federation.</p> <p>The project has been implemented and operated as per the PDD.</p> <p><i>Means of determination:</i></p> <p>This was verified by means of the observations made during</p>	/TS/ /PDD/	CLB1	CLB1	OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>the onsite assessment. The same could be confirmed within the previous verifications.</p> <p>In the course of this verification the verification team has interviewed the operational personnel and reviewed the instrument specifications. Based on this it was evidenced, that no relevant equipment was exchanged within the monitoring period. The same was confirmed during the interviews.</p> <p>By means of the document review and the interviews with the operational personnel it was evidenced, that no significant operation modes were changed during the monitoring period. Neither major changes in the operation of the oil production facilities, nor of the project equipment (collection equipment, GTUs,) etc. has been identified.</p> <p><i>Conclusion:</i></p> <p>Taking the above mentioned into account it could be concluded that the project been implemented in accordance with the PDD and the requirement is fulfilled except for the clarification request summarized in the CL B1.</p>				
B.2	<p><i>DVM § 93</i></p> <p>What is the status of operation of the project during the monitoring period?</p>	<p><i>Description:</i> The project activity was operational during the monitoring period. No significant deviations have been observed.</p> <p><i>Means of determination:</i></p>	/IM01/ /MR/			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclu- sion																																				
		<p>The same could be concluded by considering the main operation parameters of the project.</p> <table><tr><th rowspan="2"></th><th rowspan="2">Data Unit</th><th colspan="2">Monitoring period</th><th rowspan="2">Deviation</th></tr><tr><th>2009</th><th>2010</th></tr><tr><td>Electricity output</td><td>MWh</td><td>144.929,348</td><td>144.181,917</td><td>-1%</td></tr><tr><td>APG consumption</td><td>ths. nm3</td><td>68.399,002</td><td>65.457,000</td><td>-4%</td></tr><tr><td>Diesel Consumption</td><td>tons</td><td>710,803</td><td>474,095</td><td>-33%</td></tr><tr><td>NCV APG</td><td>Kcal/m3</td><td>9.027,450</td><td>8.913,829</td><td>-1%</td></tr><tr><td>CO2 emission factor for burning of APG in flare</td><td>tCO2/ths. m3</td><td>2,138</td><td>2,114</td><td>-1%</td></tr><tr><td>CO2 emission factor for burning of APG in GTU</td><td>tCO2/ths. m3</td><td>2,182</td><td>2,157</td><td>-1%</td></tr></table> <p>As evident from the comparison above the main monitoring parameters in the actual monitoring period are plausible with regards to the values verified within the previous verification.</p> <p>The observed decrease of the diesel consumption corresponds to the main purpose of the project (reduction of the diesel fuel consumption) and hence deemed to be plausible.</p> <p>It should be noted that the electricity generation was less than it has been predicted in PDD that is why the amount of burnt APG has been reduced in comparison with planned.</p>		Data Unit	Monitoring period		Deviation	2009	2010	Electricity output	MWh	144.929,348	144.181,917	-1%	APG consumption	ths. nm3	68.399,002	65.457,000	-4%	Diesel Consumption	tons	710,803	474,095	-33%	NCV APG	Kcal/m3	9.027,450	8.913,829	-1%	CO2 emission factor for burning of APG in flare	tCO2/ths. m3	2,138	2,114	-1%	CO2 emission factor for burning of APG in GTU	tCO2/ths. m3	2,182	2,157	-1%			
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		<p>According to PDD the expected emission reduction in 2010 is 129,687 tons of CO₂, but actually the emission reduction is 113,268 tons of CO₂.</p> <p><i>Conclusion:</i></p> <p>The appropriate operation of the new installations was also confirmed within the interviews^{/IM01/} with project participants and observed during the on-site inspections.</p>				
C	Compliance with monitoring plan					
C.1	<p><i>DVM § 94</i></p> <p>Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?</p>	<p><i>Description:</i></p> <p>The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final. Nevertheless some deviations have been introduced in order to adapt the monitoring plan to the existing system of data collection.</p> <p><i>Means of determination:</i></p> <p>General aspects of the monitoring</p> <p>The implemented monitoring procedures have been crosschecked against the requirements specified in the registered PDD^{/PDD/} and found consistent. The same has been confirmed within the interviews with responsible personnel.</p>	<p>/PDD/ /FDR/ /MR/ /XLS/ /Chro/ /ER/ /TS/</p>	CAR-E1	CAR-E1	OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>The monitoring report includes an accurate and clear description of the project activity, a short month wise data on the main monitoring parameters like the electricity generation and diesel fuel consumption. Furthermore, the monitoring report clearly indicates the generated amount of emission reductions. All the information is provided clear and transparently in the table format. No ambiguous statements have been identified.</p> <p>The emission reduction calculation is based on the formulae specified in the chapter D, E (esp. D.1.1.2, D.1.1.4.) of the PDD^{/PDD/}.</p> <p>The 3rd monitoring period lasts from 2010-01-01 to 2010-12-31. Both days are included. This is in line with JI Guidelines.</p> <p>Deviations to the provisions of the PDD</p> <p>The following deviations to the provisions as per the PDD were introduced:</p> <ul style="list-style-type: none"> The APG consumption is calculated by IT supported software system³ on the basis of the APG need in kW (instant APG consumption), work duration in seconds and NCV of APG. The IT supported system 				

³ The IT supported control system of the GTUs developed by Siemens

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>records the total APG consumption for all GTUs and not for separately for each GTU. According to the monitoring plan that total consumption is the relevant monitoring parameter, which is used in the ER calculation. Due to this the deviation has no impact on the accuracy of the measurements and was accepted by the verification team.</p> <ul style="list-style-type: none"> The following parameters have been excluded from the monitoring of the volumetric fraction of component of the APG: $y_{C_7H_{16}}$ – volume fraction of C_7H_{16}; $y_{C_8H_{18}}$ – volume fraction of C_8H_{18}. This was done because heptane and octane were systematically are not found out in standard sampling of APG composition of Laboratory “Nauka II”. The same is evident from the analysis of the APG composition. For this reason, the deviation was accepted. $FC_{APG,PJ}$ (Amount of APG provided to Power Center). The exclusion of this parameter has been accepted for the following reasons: The parameter was initially included in the monitoring plan in the PDD to provide a possibility for the cross check of 				

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		<p>the APG volume consumed by GTUs. It has no influence to the ERUs calculation. However, it was identified that the GTUs of the Power-producing center are not the sole APG consumers. The heaters of the Power-producing center consume APG. Also some amount of the APG is consumed during the purification of the gas prior to turbines inlet. It means that the volume of APG supplied to Power-producing center will always be less than APG consumption in GTUs and to make a cross check is impossible. Thus, the parameter of APG supplied to Power-producing center was excluded from the monitoring report as irrelevant. Due to the exclusion, the remaining parameters were re-numbered accordingly.</p> <p>The above mentioned deviations have been transparently listed in the monitoring report and appropriateness of the monitoring justified. The changes have been made in order to adapt the monitoring plan for existing system of data collection. As explained above the deviations do not have an impact on the accuracy of the generated emission reductions and have been accepted by the verification team.</p> <p>In addition it should be noted that the averaged data of the chemical composition of APG for 1st and 2nd quarter 2010 was determined as an average of the two measurements</p>				

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>carried out in each quarter. The monitoring plan specifies to carry one measurement per quarter. The deviation was accepted by the verification team because it increases the accuracy of the measurements.</p> <p>All other parameters and formulae are the same as mentioned in the PDD.</p> <p><i>Conclusion:</i></p> <p>The monitoring plan has been developed according to the project specific methodology. The monitoring of the project activity has been carried out in accordance with the developed monitoring plan.</p> <p>The requirement is fulfilled.</p>				
C.2	<p><i>DVM § 95a)</i></p> <p>For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account,</p>	<p><i>Description:</i></p> <p>The key factors, which influence the baseline emissions are:</p> <ul style="list-style-type: none"> • Net calorific value of diesel fuel • CO₂ emission factor for diesel fuel • CO₂ emission factor of APG burned in the flare • CH₄ emission factor in terms of tCO_{2e}/th.m³ <p><i>Means of determination:</i></p> <p>The above mentioned key factors have been crosschecked with the values defined in the PDD and found consistent. In</p>	<p>/PDD/ /MR/ /TS/ /XLS/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	as appropriate?	<p>particular,</p> <ul style="list-style-type: none"> • Net calorific value of diesel fuel (42.7 TJ/thousand tonnes). This is in line with the IPCC value. • CO₂ emission factor for diesel fuel 74,1 TCO₂/TJ. This value is also in line with IPCC value. <p>Also, the following two parameters are calculated on the basis of scientific statistical research.</p> <ul style="list-style-type: none"> • EF_{CO₂,F} – CO₂ emission factor of APG burned in the flare (see section E.1.), tCO₂/th.m³; • EF_{CH₄,F} – CH₄ emission factor (see section E.1.) in terms of CO₂, tCO₂e/th.m³; <p>The formulae used to calculate these parameters have been reviewed and found in line with the requirements of the registered monitoring plan^{/PDD/}.</p> <p>The density of the CO₂ (fixed parameter) has been slightly changed (from 1,831 to 1,839)⁴. The applied density of the CO₂ (fixed parameter) is in line with conditions of the chemical composition of APG carried out by independent laboratory. No further deviations of parameter values have been done in the calculation sheet.</p>				

⁴ The same was done in the previous monitoring periods and assessed as appropriate.

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		<p>The Excel calculation sheet is completely in line with the MR.</p> <p><i>Conclusion:</i></p> <p>Considering the above mentioned it was concluded that the requirement is fulfilled.</p>				
C.3	<p><i>DVM § 95b)</i></p> <p>Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?</p>	<p>Electricity generation / output.</p> <p><i>Description:</i></p> <p>The monitoring of the electricity generation and output is based on the monthly meter readings installed at switchgear of Power Centre Substation.</p> <p><i>Means of determination:</i></p> <p>The electricity output is measured continuously and the measurements are recorded on the monthly basis in log book. This is in line with the monitoring plan as per the PDD^{PDD/}. During the on-site-visit it could be observed that there are separate meters for:</p> <ul style="list-style-type: none"> (a) power supplied to equipment attributable to project activity (compressor station, gas preparation equipment) and (b) power is supplied to other consumers (oil production equipment etc.) 	<p>/MP/ /XLS/ /Mt-E/ /Elec/ /PDD/ /MR/ /nzif/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>During the on-site visit it could be observed the measurements and the recording frequency (i.e. archiving in log book) are accurate and in line with the provisions of the PDD. The determination team has reviewed the log books and checked the plausibility of the recorded figures. The handling of the monitoring procedures for the power generation has been assessed as accurate and appropriate. The recorded figures have been cross checked with aggregated data in electronic form and it could be verified that the monitoring of net power generation has been established in an appropriate and accurate manner.</p> <p>The information about the electricity generation and the output within the monitoring period has been provided^{/Elec/}. It could be verified that the amount as indicated in the monitoring report^{/MR/} and the excel spreadsheet^{/XLS/} is in line with provided evidences^{/Elec/}.</p> <p>The recorded figures as per provided evidences^{/Elec/} are submitted for review that is carried out by the responsible personal. By doing this, the monitoring figures undergo plausibility and accuracy check. Based on this determination team has gained a sufficient confidence that the double check procedures for the monitoring parameters have been introduced and are in line with requirements of the monitoring plan.</p>				

3rd Periodic Verification Report: “Associated petroleum gas flaring reduction and electricity generation at the Khasyre oil field”

TÜV NORD JI/CDM Certification Program

P-No: 8000392934-11/096 V03



No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>All applied electricity meters have been verified (calibrated) before installation. The dates of the verification (calibration) and the verification interval as indicated in the monitoring plan could be verified based on the provided technical specifications^{/Mt-E/} of the installed electricity meters. Based on this it could be verified that only calibrated meters were applied in the considered monitoring period.</p> <p>Also the accuracy class of the installed equipment has been checked based on the technical specification^{/Mt-E/} and the technical data as provided by the manufacturer^{/nzi/}. The accuracy class when measuring in the forward and reverse direction is 0.2 S/0.5 as evident from the manufacturer's technical data^{/nzi/}. The applied accuracy has been assessed as suitable and appropriate for the specific context of the project activity⁵.</p> <p><i>Conclusion:</i></p> <p>Considering the above mentioned it was concluded that the requirement is fulfilled.</p>				

⁵ Maximum permissible main relative error when measuring voltage, current, frequency, etc. Can be found on the official website of the manufacturer (<http://www.zifnn.com/multifunction-meters/set-4tm.03m-set-4tm.02.2m.html>)

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>Chemical composition of APG.</p> <p><i>Description:</i></p> <p>The chemical composition of APG is measured by chromatograph. Measurements are carried out by an independent laboratory – Nauka II. The measurements in 2010 have been provided and it could be verified that they are carried out in accordance official standards^{/Chro/}.</p> <p>The independent laboratory is responsible for the measurements and the proper maintenance of the monitoring equipment (i.e. the chromatograph). The accreditation certificate of the laboratory has been provided^{/Lab-1/}. Training certificates of the laboratory personnel involved in the analysis of the APG components have been provided^{/Lab-2/}.</p> <p><i>Means of determination:</i></p> <p>The information about the volumetric fraction of the APG as per the analysis of the independent laboratory has been provided^{/Chro/}. It could be verified that the amount as indicated in the monitoring report^{/MR/} and the excel spreadsheet^{/XLS/} is in line with provided evidences^{/Chro/}.</p> <p>In addition it should be noted that the chemical composition of APG for 1st and 2nd quarter 2010 was determined as an</p>	<p>/MR/ /XLS/ /Chro/ /PDD/ /Lab-1/ /Lab-2/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>average of two measurements carried out in each quarter. Although the monitoring plan requires to carry out these measurements on a quarter basis the deviation was accepted by the verification team because it only increases the accuracy of the measurements.</p> <p>It could be also verified that Nauka II is an independent laboratory accredited with respect to technical competence according to Russian standards for accreditation (GOST). Hence a sufficient confidence that the monitoring plan for this parameter specifies procedures for quality control and thus will provide a sufficient level quality assurance.</p> <p>The accuracy class (0.3%) of the measurement equipment (i.e. chromatograph) has been crosschecked with provided evidences and found consistent.</p> <p>The information about volumetric fraction of the APG as per the analysis of the independent laboratory has been provided^{/Chro/}. The amount as indicated in the monitoring report^{/MR/} and the excel spreadsheet^{/XLS/} is in line with provided evidences^{/Chro/}.</p> <p><i>Conclusion:</i></p> <p>Considering the above mentioned it was concluded that the requirement is fulfilled.</p>				

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>Total APG consumption in GTUs.</p> <p><i>Description:</i></p> <p>The APG consumption of GTUs is measured by the IT supported system (i.e. special Siemens program) based on the data of the instant consumption. The IT supported system has been installed as an integral part of the project activity. It enables an accurate monitoring of the APG consumption in GTUs.</p> <p><i>Means of determination:</i></p> <p>The verification team has gained as sufficient confidence that the IT supported system is functioning. The same was observed within the previous on-site inspections.</p> <p>The APG consumption in GTUs has been provided^{/APG/}. It could be verified that the amount as indicated in the monitoring report^{/MR/} and the excel spreadsheet^{/XLS/} is in line with provided evidences^{/APG/}.</p> <p>The calibration and the control of the Siemens program for instant consumption have been carried out by the technology supplier in the course of the special manufacturer inspection. The same could be evidenced by the PP.</p> <p>Hence, it could be concluded that calibration and</p>	<p>MR/ /XLS/ /Chro/ /PDD/ /APG/ /TS/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>maintenance of the monitoring equipment is appropriate and has been carried out by the competent personnel.</p> <p>The applied measurement equipment is in line with that indicated in the PDD. The indicated accuracy (1%) of the system measurements could be verified. It is in line with that indicated in the monitoring plan^{/PDD/}.</p> <p>The daily handling of the monitoring procedures for the APG consumption has been assessed as accurate and appropriate. It could be verified that the monitoring procedures and the daily handling are in line with the monitoring plan. The recorded figures have been cross checked with the aggregated data in the electronic form and it could be verified that the monitoring of APG consumption has been established in an appropriate and accurate manner.</p> <p><i>Conclusion:</i></p> <p>Considering the above mentioned it was concluded that the requirement is fulfilled.</p>				
		<p>Diesel consumption in GTUs.</p> <p><i>Description:</i></p> <p>The diesel consumption in GTUs is monitored based on the recordings of the reservoir level. The bill of the fuel is made</p>	<p>/MR/ /XLS/ /PDD/ /GTU-D/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>at the end of the shift by each shift team.</p> <p><i>Means of determination:</i></p> <p>The diesel amount is recorded in the special inventory book. This is done 1-2 times in month in accordance with measurements conversion table^{/GrTab/}. This could be verified based on provided inventory book^{/Inv-b/} and measurements conversion table^{/GrTab/}. The adding to the diesel reservoir has been verified based on provided bill of the fuel^{/GTU-D/}. The applied monitoring procedures are in line with that provided in the PDD.</p> <p>The diesel consumption in GTUs has been provided^{/GTU-D/Inv-b/GrTab/}. It could be verified that the amount as indicated in the monitoring report^{/MR/} and the excel spreadsheet^{/XLS/} is in line with provided evidences^{/GTU-D/}.</p> <p>The calibration and control of the metering equipment has been carried out.</p> <p>During the on-site visit verification team has checked the procedures for the monitoring of the diesel consumption for the GTUs operation. It could be verified that the monitoring procedures and the data handling are appropriate and in line with the monitoring plan.</p> <p><i>Conclusion:</i></p>	<p>/Inv-b/ /GrTab/</p>			

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>Considering the above mentioned it was concluded that the requirement is fulfilled.</p> <p>Diesel consumption in DF.</p> <p><i>Description:</i></p> <p>In emergency cases the diesel is fired by the diesel units (DPPs). The diesel consumption is based on the daily flow meter measurements. It is recorded in the inventory books. Based on this the write-off certificates are prepared. The values applied for the ER calculation are taken from monthly the write-off certificates.</p> <p><i>Means of determination:</i></p> <p>The inventory books and the write-off certificates^{/DPP-C//DPP-K//DPP-N/} for the diesel consumption in DPPs have been provided. The values given in these data sources has been crosschecked and found consistent.</p> <p>It could be verified that the amount as indicated in the monitoring report^{/MR/} and the excel spreadsheet^{/XLS/} is in line with provided evidences^{/DPP-C//DPP-K//DPP-N/}.</p> <p>As a part of the internal QA/QC the PP calculates the (normative) diesel consumption. This is done based on the operation hours of the DPPs and the specific diesel consumption. The calculated (normative) diesel</p>	<p></p> <p>/MR/ /XLS/ /PDD/ /DPP-C/ /DPP-K/ /DPP-N/</p>	<p>CAR-C1</p>	<p>CAR-C1</p>	<p>OK</p>

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>consumption is crosschecked with the diesel consumption as per the write-off certificates^{/DPP-C//DPP-K//DPP-N/}. The crosscheck has been provided. It could be verified that the diesel consumption as per the write-off certificates is plausible with regards to the (normative) consumption (i.e. calculated based on the specific consumption and operation hours).</p> <p>The applied measurement procedures are in line with that provided in the PDD. This could be verified by means of the document review and the interviews carried out with the responsible personnel.</p> <p><i>Conclusion:</i></p> <p>Considering the above mentioned it was concluded that the requirement is fulfilled. A minor deviation was identified for the diesel consumption in Cherpaju and summarized in CAR C1.</p>				
C.4	<p><i>DVM § 95c)</i></p> <p>Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and</p>	<p><i>Description:</i></p> <p>The default factors are used for calculating the emission reductions:</p> <ol style="list-style-type: none"> 1. For the efficiency of APG combustion in flares (98%) the IPCC value has been assumed. Project participant has indicated the data source. This is the volume 2, chapter 4. Fugitive emissions, p.4.45 “... Flaring destruction 	<p>/MR/ /XLS/ /PDD/ /TS/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	reasonableness, and appropriately justified of the choice?	<p>efficiency... typically a value 0.98 is assumed for those used at production and processing facilities. The applied value could be proved.</p> <p>2. For the combustion efficiency of the GTUs the IPCC value (100%) has been assumed. Project participant has indicated the data source. This is the volume 2, chapter 2. Stationary combustion. The applied value could be proved.</p> <p>3. Net calorific value of diesel fuel (42.7 TJ/thousand tonnes). This is in line with the IPCC value.</p> <p>4. CO₂ emission factor for diesel fuel 74.1 TCO₂/TJ. This value is also in line with IPCC value.</p> <p>5. Specific consumption of diesel fuel at on-site DPPs 0.228 t/MWh. This value has been substantiated based on the historical information on the fuel consumption and electricity generation. The calculated emission factor for diesel generator systems is 0.72 kg CO₂e/kWh. This value was found to be conservative in comparison to the default emission factor for diesel generator systems (0.8 kg CO₂e/kWh as per the approved CDM methodology AMS ID.</p> <p><i>Means of determination:</i></p> <p>The above mentioned default values have been</p>				

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		crosschecked with the values defined in the PDD and found consistent. <i>Conclusion:</i> The requirement is fulfilled.				
C.5	DVM § 95d) Is the calculation of emission reductions or enhancements of net removals calculated based on conservative assumptions and the most plausible scenarios in a transparent manner?	<i>Description:</i> The calculation of the emission reduction has been carried out in accordance with the requirements of the monitoring plan as defined in the PDD ^{/PDD/} . In respect to the §95d) of the DVM it should be noted that the monitoring plan assumes the following: <ul style="list-style-type: none"> • efficiency of APG combustion in flares (98%) • combustion efficiency for the GTUs (100%) <i>Means of determination:</i> The above mentioned assumptions ensure the conservative nature of the ER calculations. In particular, <ol style="list-style-type: none"> 1. For the efficiency of APG combustion in flares (98%) the IPCC value has been assumed. Project participant has indicated the data source. This is the volume 2, chapter 4. Fugitive emissions, p.4.45 "... Flaring destruction efficiency... typically a value 0.98 is assumed for those used at production and processing facilities. The applied 	/PDD/ /MR/ /XLS/			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>value could be proved.</p> <p>2. For the combustion efficiency for the GTUs (100%) the IPCC value has been assumed. Project participant has indicated the data source. This is the volume 2, chapter 2. Stationary combustion. The applied value could be proved.</p> <p>As already noted the ER calculation is in line with the requirements of the monitoring plan.</p> <p><i>Conclusion:</i></p> <p>Considering the above said, it was concluded that the requirement is fulfilled.</p>				
	Applicable to JI SSC projects only					
C.6	<p><i>DVM § 96</i></p> <p>Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis?</p> <p>If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or</p>	Not applicable, since the project activity is a large scale JI project.	/PDD/			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	the bundle for the monitoring period determined?					
	Applicable to bundled JI SSC projects only					
C.7	DVM § 97a) Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	Not applicable, since the project activity is a large scale JI project.	/PDD/			OK
C.8	DVM § 97b) If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	Not applicable, since the project activity is a large scale JI project.	/PDD/			OK
C.9	DVM § 98 If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, Are the monitoring periods per component of the project clearly specified in the monitoring report?	Not applicable, since the project activity is a large scale JI project.	/PDD/			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?					
D	Revision of monitoring plan					
	Applicable only if monitoring plan is revised by project participants					
D.1	DVM § 99a) Did the project participants provide an appropriate justification for the proposed revision?	Description: The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final. Nevertheless, some deviations have been introduced in order to adapt the monitoring plan to the existing system of data collection. The deviations have been accepted by the verification team. Please refer to the section C.1.	/PDD/ /MR/ /XLS/	CAR-E1	CAR-E1	OK
D.2	DVM § 99b) Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the	Yes, as assessed in the section C.1 the proposed deviations to the monitoring plan improve the accuracy and/or applicability of information collected compared to the original monitoring plan. The proposed revisions are related to the procedures of the GHG data management. They adapt the GHG data management to the current practice of the company and	/PDD/ /MR/ /XLS/			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	relevant rules and regulations for the establishment of monitoring plans?	thus increase the accurateness of the data management. The proposed deviations do not change conformity with the relevant rules and regulations for the establishment of monitoring plans.				
E	Data management					
E.1	<i>DVM § 101a)</i> Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	<i>Description:</i> Project participant has appropriately implemented the procedures for the data management and the processing within the particular stages of the monitoring. The system includes double check procedures and is based on the four-eye principle. The monitoring of the emission reductions has been implemented by “RN-Severnaya Neft”, LLC in accordance with the corresponding internal procedure ^{/Tr/} “The JI monitoring procedures for the project activity “Associated petroleum gas flaring reduction and electricity generation at the Khasyrey Oil Field””. The above mentioned internal procedure ^{/TR/} is embedded in the ISO Environmental Management system. <i>Means of determination:</i> The internal procedure ^{/Tr/} for the GHG data management within the project activity has been provided. Based on this it could be concluded that the relevant tasks and responsibilities within the monitoring were clearly defined	/MR/ /PDD/ /Tr/ /TS/ /ISO/	CAR-E2	CAR-E2	OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>are allocated to the personnel of the different departments. The involved personnel are familiar with monitoring procedures and with the technology applied.</p> <p>In particular, a sufficient confidence has been gained that the introduced two stage quality assurance system provides procedures and provisions for an accurate and appropriate monitoring of the generated emission reductions.</p> <p>In this context it should be noted that in May 2006 «RN-Severnaya Neft» LLC has received a certificate proving that its environmental and industrial safety management system corresponds to requirements of international standards ISO14001 and OHSAS 18001.</p> <p><i>Conclusion:</i></p> <p>The procedures for data collections and QA/QC procedures have been checked and found appropriate and in line with provisions of the monitoring plan.</p>				
E.2	<p><i>DVM § 101b)</i></p> <p>Is the function of the monitoring equipment, including its calibration status, in order?</p>	<p><i>Description:</i></p> <p>The PP has introduced procedures for ensuring the timely calibration of the applied monitoring equipment.</p> <p>The information related for the calibration of the applied equipment is included in the monitoring report.</p> <p><i>Means of determination:</i></p>	<p>/MR/ /PDD/ /Tr/ /TS/ /MR/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		<p>In the course of the onsite assessment the calibration certificates have been checked. The calibration dates as indicated in the monitoring report were found consistent with dates given in the corresponding calibration certificates. For further details please refer to the section C.3. of the Annex.</p> <p><i>Conclusion:</i></p> <p>Considering the above said, it was concluded that the requirement is fulfilled.</p>				
E.3	<p><i>DVM § 101c)</i></p> <p>Are the evidence and records used for the monitoring maintained in a traceable manner?</p>	<p><i>Description:</i></p> <p>The PP has implemented procedures for GHG data management, which specify the recording the and the reporting form.</p> <p><i>Means of determination:</i></p> <p>The provided documented evidences comply with the internal requirements related to the form of the data recording and reporting.</p> <p>The evidences and records used for the monitoring are maintained in a traceable manner. It was observed that all relevant documentation is archived in hard copy and in the electronic form (i.e. as a scanned copy).</p> <p><i>Conclusion:</i></p>	<p>/MR/ /PDD/ /Tr/ /TS/ /MR/</p>			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
		The requirement is fulfilled.				
E.4	<i>DVM § 101d)</i> Is the data collection and management system for the project in accordance with the monitoring plan?	<p><i>Description:</i></p> <p>The data collection and management system are in line with provisions of the monitoring plan.</p> <p><i>Means of determination:</i></p> <p>The QA/QC procedures including the procedures for calibration have been assessed and found appropriate.</p> <p>The methodologies used in the monitoring report are consistent with those in the PDD^{PDD/}. No differences between the positively determined monitoring plan and the methodology have been identified. For further details please refer to the section C.1 and C.3 of this Annex.</p> <p><i>Conclusion:</i></p> <p>The requirement is fulfilled.</p>	<p>/IM01/</p> <p>/PDD/</p> <p>/Tr/</p> <p>/TS/</p> <p>/MR/</p>			OK
F	Verification regarding programmes of activities (additional elements for assessment)					
F.1	<i>DVM § 102</i> Is any JPA that has not been added to the JI PoA not verified?	Not applicable, since the project activity is a large scale JI project.				OK
F.2	<i>DVM § 103</i>	Not applicable, since the project activity is a large scale JI project.				OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	Is the verification based on the monitoring reports of all JPAs to be verified?					
F.3	<i>DVM § 103</i> Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	Not applicable, since the project activity is a large scale JI project.				OK
F.4	<i>DVM § 104</i> Does the monitoring period not overlap with previous monitoring periods?	Not applicable, since the project activity is a large scale JI project.				OK
F.5	<i>DVM § 105</i> <i>If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?</i>	Not applicable, since the project activity is a large scale JI project.				OK
	Applicable to sample-based approach only					
F.6	<i>DVM § 106</i>	Not applicable, since the project activity is a large scale JI project.				OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	<p><i>Does the sampling plan prepared by the AIE:</i></p> <p><i>(a) Describe its sample selection, taking into account that:</i></p> <p><i>(i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as:</i></p> <ul style="list-style-type: none"> <i>– The types of JPAs;</i> <i>– The complexity of the applicable technologies and/or measures used;</i> <i>– The geographical location of each JPA;</i> <i>– The amounts of expected</i> 					

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	<p><i>emission reductions of the JPAs being verified;</i></p> <ul style="list-style-type: none"> <i>– The number of JPAs for which emission reductions are being verified;</i> <i>– The length of monitoring periods of the JPAs being verified; and</i> <i>– The samples selected for prior verifications, if any?</i> <p><i>(ii) If, in its sample selection, the AIE does not identify and take into account such differences among JPAs, then (does the sampling plan) provide a reasonable explanation and justification for not doing so?</i></p> <p><i>(b) Provide a list of JPAs selected for site inspections, based on a statistically sound selection of sites for inspection</i></p>					

3rd Periodic Verification Report: “Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field”

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No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
	<i>in accordance with the criteria listed in (a) (i) above?</i>					
F.7	DVM § 107 <i>Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?</i>	<i>Please refer to F.6.</i>				OK
F.8	DVM § 108 <i>Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?</i>	<i>Please refer to F.6.</i>	/T-S/			OK

No.	DVM ² paragraph / Checklist Item (incl. guidance for the determination team)	Initial Finding (Means and results of assessment)	Ref.	Action requested to PPs (CAR, CL, FAR)	Review of PP's action	Conclusion
F.9	DVM § 109 <i>Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)</i>	<i>Please refer to F.6.</i>	/T-S/			OK
Applicable to both sample based and non-sample based approaches						
F.10	DVM § 110 If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	<i>Please refer to F.6.</i>	/T-S/			OK

ANNEX 2: STATEMENTS OF COMPETENCE OF TEAM MEMBERS