VERIFICATION REPORT

- 1ST PERIODIC –

OJSC — OIL COMPANY ROSNEFT

"ASSOCIATED PETROLEUM GAS FLARING REDUCTION AND ELECTRICITY GENERATION AT THE KHASYREY OIL FIELD"

Monitoring Period: 2008-01-01 TO 2008-12-31

(incl. both days)

Report No: 8000369890-09/417

Date: 2009-11-15

TÜV NORD CERT GmbH
JI/CDM Certification Program
Langemarckstraße, 20
45141 Essen, Germany
Phone: +49-201-825-3335
Fax: +49-201-825-3290
www.tuev-nord.de
www.global-warming.de

Verification Report:	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
	8000369890-09/417	0	2009-11-15	2009-11-15
Project:	***Title:***		***Registration date:***	***UNFCCC-No.:***
	"Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field"		N/A	Track 2 project
Project Participant(s):	***Host party:***		***Other involved parties:***	
	The Russian Federation			
Applied methodology/ies:	***Title:***		***No.:***	***Scope:***
	Project specific methodology		N/A	1, 10
Monitoring:	***Monitoring period (MP):***		***No. of days:***	***MP No.***
	2008-01-01 to 2008-12-31 - both days included		365	1
Monitoring report:	***Title:***		***Draft version:***	***Final version:***
	"Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field"		1	2
Verification team / Technical Review and Final Approval	***Verification Team:***		***Technical review:***	***Final approval:***
	Rainer Winter Evgeni Sud		Ulrich Walter	Eric Krupp
Emission reductions: [t CO_{2e}]	***Verified amount***		***As per Draft MR:***	***As per PDD:***
	111,189		111,207	138,476

Summary of Verification Opinion:

TÜV NORD JI/CDM Certification Program has carried out the 1st 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. This verification covers the period from 2008-01-01 to 2008-12-31 (including both days).

In the course of the verification 3 Corrective Action Requests (CAR) and 0 Clarification Requests (CL) 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: 2009-08-27/MR-1/), final monitoring report (dated 2009-11-13/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 1st 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:	271,161	t CO_{2e}
Project emissions:	159,972	t CO_{2e}
Leakage:	-	t CO_{2e}
Emission reductions:	**111,189**	t CO_{2e}

Document information:	*Filename:*	*Num. of pages:*
	2010-06-01 FVR Khasyrey 1st ver_rev2	49

Abbreviations:

CA	**Corrective Action / Clarification Action**
CAR	**Corrective Action Request**
CDM	**Clean Development Mechanism**
CER	**Certified Emission Reduction**
CO_2	**Carbon dioxide**
CO_{2eq}	**Carbon dioxide equivalent**
CR	**Clarification Request**
DH	**District Heating**
ER	**Emission Reduction**
ERU	**Emission Reduction Unit**
FAR	**Forward Action Request**
GHG	**Greenhouse gas(es)**
JI	**Joint Implementation**
JISC	**Joint Implementation Supervisory Committee**
MP	**Monitoring Plan**
MR	**Monitoring Report**
PDD	**Project Design Document**
PP	**Project Participant**
SHP	**Small hydro projects**
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 1st 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. The verifiers have reviewed the implementation of the monitoring plan (MP) in the JI project activity number 0171.

GHG data for the monitoring period covering 2008-01-01 to 2008-12-31 was verified in detailed manner applying the set of requirements, audit practices and principles of the UNFCCC.

This report summarizes the findings and conclusions of this 1st periodic verification of the above mentioned JI 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 the provisions of the 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 validated project design document/PDD/ including baseline, the monitoring report/MR-1//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 by the UNFCCC/Kyoto Protocol requirements, in particular, the requirements of

the JI as set out in decision 9/CMP.1, the present annex and relevant decisions by the JISC,
- other relevant rules, including the host country legislation,
- CDM Validation and Verification Manual /VVM/,
- monitoring plan as given in the registered PDD /PDD/,
- Applied Methodology: the project activity applies **project specific baseline and monitoring methodology** which was positively validated in the course of determination PDD.

2. GHG PROJECT DESCRIPTION

2.1. Project Characteristics

Essential data of the project is presented in the following 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	
Project size	☒ Large Scale ☐ Small Scale	
JI registration No.	Registered as per the Track 2 procedures	
Project Scope (according to UNFCCC sectoral scope numbers for JI)	1	Energy Industries (renewable - / non-renewable sources)
	10	Fugitive emissions from fuels (solid, oil and gas)
Applied Methodology	Project specific methodology	

2.2. Involved Parties and Project Participants

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

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	Russian Federation	OJSC "Rosneft"
Other Involved Party/ies	Party will be defined later	

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.

2.3. Project Location

The details of the project location are given in table 2-3:

Table 2-3: 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

2.4. Technical Project Description

The technical key data are provided in the table 2-4 below:

Table 2-4: 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	Yet not finally fixed[1]
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

[1] During the determination the GTU has been installed and in testing phase. The commissioning of the unit is expected to be in 2009.

3. METHODOLOGY AND VERIFICATION SEQUENCE

3.1. 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 /MR-1/ submitted by the client and additional supporting documents with the use of customised verification protocol /CPM/ according to the Validation and Verification Manual /VVM/,
- 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	2009-08-27
On-site-visit	From 2009-03-31 till 2009-04-03
Draft reporting finalised	2009-09-27
Final reporting finalised	2009-11-15
Technical review finalised	2009-11-15

3.2. 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.

3.3. 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, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	Company	Function [1]	Qualification Status [2]	Scheme competence	Technical competence [4]	Host country Competence	Team Leading competence
☒ Mr. ☐ Ms.	Rainer Winter	TÜV Nord Cert GmbH	TL	SA	☒	K	☐	☒
☒ Mr. ☐ Ms.	Evgeni Sud	TÜV Nord Cert GmbH	TM	E	☒	-	☒	☐
☒ Mr. ☐ Ms.	Walter Ulrich	TÜV Nord Cert GmbH	TR[3]	E	☒	K	☐	☐
☒ Mr. ☐ Ms.	Eric Krupp	TÜV Nord Cert GmbH	TR, FA[3]	SA	☐	-	☐	☒

[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

3.4. Publication of the Monitoring Report

In accordance with JI Guidelines 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.

3.5. 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 3-3 below.

Table 3-3: 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*)**
The following potential risks were identified and structured according to the possible areas of occurance.	*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:*	*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.*	*The additional verification testing performed is described. Testing may include:* - *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* *Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.*	*Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.*

The completed table A-1 is enclosed in the annex (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 DOE 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 3-4.

Table 3-4: Structure of the project specific periodic verification checklist

Table A-2: Periodic Verification Checklist			
Expectations for GHG data management system/controls	***Comments***	***Draft Concl.***	***Final Concl.***
The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/control's ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table.	*Description of circumstances and further commendation to the conclusion.*	*This is either acceptable based on review of MR and supporting Documents (**OK**), or a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Draft Verification report. The Initial Verification has additional **Forward Action Requests (FAR)**. FAR indicates essential risks for further periodic verifications*	*CARs and CRs raised in the Draft Conclusion have to be closed or resolved. The final conclusion determines the final statement. FARs could remain in this section as they are subject in the next consecutive verification.*

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

3.6. 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 PDD report/FDR/,
- the monitoring report, including the claimed emission reductions for the project/MR-1/,
- the emission reduction calculation spreadsheets/XLS/

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

3.7. 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.

The on-site audit was carried out. 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 OJSC "Rosneft" including the operational staff of the plant were interviewed. The main topics of the interviews are summarised in Table 3-5.

Table 3-5: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project participant	- General aspects of the project

Interviewed Persons / Entities	Interview topics
	- 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 calculation - Procedural aspects of the verification - Maintenance - Environmental aspects

3.8. 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, CRs and FARs.

3.9. Resolution of CARs, CRs 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; or
- 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.

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.

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

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

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

3.10. Final reporting

Upon successful closure of all raised CARs and CRs 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 validation opinion is issued.

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

3.11. 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.

3.12. 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.

4. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report/MR-1/, the calculation spreadsheet/XLS/, PDD/PDD/, the Determination PDD report/FDR/ and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

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

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

Verification topic	No. of CAR	No. of CR	No. of FAR
H – Project history	1	0	0
U – Update on Changes and Incidents	0	0	0
R – Monitoring Report – General	1	0	0
P – Monitoring Parameters	0	0	0
C – Emission Reduction Calculation	0	0	0
Q – Quality Management	1	0	0
SUM	**3**	**0**	**0**

The following tables include all raised CARs, CRs 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).

	CAR H1			
Classification	☒ CAR	☐ FAR	☐ CR	☐ None
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Letter of Approval from all parties involved are pending.			
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*				
AIE Assessment #1 *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.*				

	CAR H1
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic determination ERU ☐ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The CAR / CL is closed, ☐ The CAR / CL could **not** be closed.

Monitoring Report	**CAR R1**			
Classification	☒ CAR	☐ FAR	☐ CR	☐ None
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Volumetric fraction of component propane (C_3H_8) in the calculation excel spreadsheet should be checked.			
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The formula has been corrected.			
AIE Assessment #1 *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.*	The formula for calculation volumetric fraction of component propane (C_3H_8) has been corrected.			
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic determination ERU ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The CAR / CL is closed, ☐ The CAR / CL could **not** be closed.			

Monitoring Report	**CAR Q1**			
Classification	☒ CAR	☐ FAR	☐ CR	☐ None
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Please provide information about the calibration (control) of the measurement devices, including the date of control and entity performed the calibration.			
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The required information has been provided in the Annex 2 of the monitoring report.			
AIE Assessment #1 *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.*	The monitoring report provides required information in a table form. The information has been proved and found to be correct.			

Monitoring Report	**CAR Q1**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic determination ERU ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The CAR / CL is closed, ☐ The CAR / CL could **not** be closed.

5. 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).

5.1. 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-PA//PDD/.

5.2. Project history

During the determination PDD process, the AIE might have raised a forward action request to highlight issues related to project implementation that require review during the first verification of the project activity. However for this project, no FAR was raised in the determination PDD process.

5.3. Special events

The last 5th GTU has been installed later than planed. For this reason the achieved amount of emission reduction is slightly below the forecasted amount as per the PDD. No further special events with effect on the monitoring of the project have been observed.

5.4. Compliance with the monitoring plan

The monitoring system and all applied procedures have been reviewed. It has been verified that the monitoring system and all applied procedures are completely in compliance to the validated monitoring plan. The CARs and CRs raised in this context have been successfully closed.

The validated monitoring plan specifies procedures for data collecting and reporting. These procedures have been appropriately followed by the project participant within the monitoring. It could be verified that appropriate measurement equipment has been used. Also the collection and recording of the monitoring parameters has been duly carried out by the responsible personnel.

The calculation of the ERUs in the corresponding Excel spreadsheet has been appropriately carried out.

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.

5.5. Compliance with the monitoring methodology

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.

5.6. Monitoring parameters

During the verification all relevant monitoring parameters 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 in the project specific verification checklist.

After appropriate corrections were carried out by the project participant, 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.

5.7. 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.

5.8. ER Calculation

During the verification CAR R1 has been raised due to slight deviation of the applied value. Excel spreadsheet has been corrected and CAR R1 has been closed. Thus it is confirmed that the ER calculation is overall correct.

5.9. 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.

5.10. 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 project site 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 applicable UNFCCC criteria and relevant guidance provided by the COP/CMP and the JISC (clarifications and/or guidance).

5.11. Hints for next Periodic Verification

No FARs have been raised.

6. VERIFICATION OPINION

TÜV NORD JI/CDM Certification Program has carried out the 1st 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. This verification covers the period from 2008-01-01 to 2008-12-31 (including both days).

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The verification is based on the hosted monitoring report (dated: 2009-08-27/MR-1/), final monitoring report (dated: 2009-11-13/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 verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document;
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Essen, 2009-11-15

Mr. Rainer Winter
Verification Team Leader
TÜV NORD JI/CDM Certification Program

Essen, 2009-11-15

Mr. Eric Krupp
Final Approver
TÜV NORD JI/CDM Certification Program

7. REFERENCES

Table 7-1: Documents provided by the project participant(s)

Reference	Document
/**APG**/	Amount of the associated petroleum gas for electricity generation (GTU) in 2008
/**Cal-E**/	Calibration (control) certificates for the electricity meters
/**Chro**/	Chemical composition of APG as per the measurements carried out by an independent laboratory – Nauka II as per the analysis nr. 672 dated 12.08.08, Nr. 879 dated 27.10.08 and Nr. 944 dated 18.11.08.
/**DPP-C**/	Diesel consumption DPP Cherpaju
/**DPP-K**/	Diesel consumption DPP Khasyrey
/**DPP-N**/	Diesel consumption DPP Nadeju
/**Elec**/	Electricity output (Main Engineer)
/**GrTab**/	Certified measurements conversion table
/**GTU-D**/	Diesel consumption at GTU Khasyrey
/**FDR**/	Final Determination Report, dated 06.08.2009 Associated petroleum gas flaring reduction and electricity generation at the Khasyrey Oil Field"
/**Inv-B**/	Measurements of the reservoir level and diesel amount (inventory book)
/**Mt-APG**/	Technical specification for the 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 metering equipment: Electricity meter(s)
/**MR-1**/	Monitoring report of GHGs emission reductions (01.01.2008 – 31.12.2008) "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field" dated 2009-08-27.
/**MR**/	Monitoring report of GHGs emission reductions (01.01.2008 – 31.12.2008) "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field" dated 2009-11-13

Reference	Document
/**PDD**/	Project Design Document Version 5 " dated 05.08.2009 Associated petroleum gas flaring reduction and electricity generation at the Khasyrey Oil Field"
/**TS**/	Technical specification project activity Two gas turbine units (GTU) of 4.7 MW each (already operational) and Two GTU of 7.9 MW each
/**XLS**/	ERU Excel calculation spreadsheet

Table 7-2: Background investigation and assessment documents

Reference	Document
/**B-1**/	Emisssion 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)

Reference	Document
/**CPM**/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/**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
/**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).
/**VVM**/	Validation and Verification Manual (Version 1, Annex 3; EB 44)

Table 7-3: 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
/**I-GTU**/	http://energy.ihs.com/News/Press-Releases/2008/IHS-CERA-Power-Capital-Costs-Index.htm	IHS, Construction Costs for New Power Plants Continue to Escalate: IHS CERA Power Capital Costs Index

Reference	Link	Organisation
/**nfg**/	http://www.neftegaz.ru/	Oil gas news website
/**ngv**/	http://www.ngv.ru/	OIl and gas vertical
/**mert**/	http ://www.economy.gov.ru/wps/wcm/connect/economylib/mert/welcome/economy/kiorealize/analiticmath/	Ministry for economic Development of the Russian Federation
/**unfccc**/	http://cdm.unfccc.int	UNFCCC

Table 7-4: Interviewed Persons

Reference	MoI[1]		Name	Organisation / Function
/**IM01**/	V	☒ Mr. ☐ Ms	D. N. Isaenko	Severnaya Neft LLC
/**IM01**/	V	☒ Mr. ☐ Ms	G. A. Dertev	Severnaya Neft LLC
/**IM01**/	V	☒ Mr. ☐ Ms	A. W. Uljanow	Severnaya Neft LLC
/**IM01**/	V	☒ Mr. ☐ Ms	M. F. Latypov	National carbon sequestration foundation
/**IM01**/	V	☒ Mr. ☐ Ms	D. Ukhanov	National carbon sequestration foundation

ANNEX

Verification Protocol

ANNEX: 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 *Forward Action Requests*)
Raw data generation				
• 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	• Installation of modern and state of the art equipment • Process control automation. • Internal data review • Regular visual inspect-ions of installed equip-ment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment • Stand-by duty is	• 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 • Insufficient accuracy	• Site – visit • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees. • Check of calibration records, if applicable • Check of maintenance records • Export and countercheck of raw data in EXCEL. • Counter-check of raw data and commercial	• **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 *Forward Action Requests*)
technology • Accuracy of values supplied by Third Parties	organized • Training • Internal audit procedures • Internal check of QA/QC measures of involved Third Parties	• Inappropriate QA/QC measures of Third Parties	data • Check of JI management system • Check of JI related procedures • Application of CDM 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				
• Wrong data transfer from raw data to daily and monthly aggregated reporting forms • IT Systems • Spread sheet	• Cross-check of data • Plausibility checks of various parameters. • Appropriate archiving system • Clear allocation of responsibilities	• Unintended usage of old data that has been revised • Incomplete documentation • Ex-post corrections of records • Ambiguous sources of information	• Check of data aggregation steps • Counter-calculation • Data integrity checks by means of graphical data analysis and calculation of specific performance	• **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 *Forward Action Requests*)
programming • Manual data transmission • Data protection • Responsibilities	• Application of JI Management system procedures • Usage of standard software solutions (Spreadsheets) • Limited access to IT systems • Data protection procedures	• Non-application of management system procedures • Manual data transfer mistakes • Unintended change of spread sheet programming or data base entries • Problems caused by updating/upgrading or change of applied software	figures • Check of data archiving system • Check of application of Management system procedures	
Other calculation parameters				
• Emission factors, oxidation factors, coefficients	• The values and data sources applied are defined in the PDD and monitoring plan.	• 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	• Update-check of regulatory framework • Countercheck of the applied MP in the MR against the methodology and the PDD.	• **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 *Forward Action Requests*)
		values).		
Calculation Methods				
• Applied formulae • Miscalculation • Mistakes in spread-sheet calculation	• 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	• The danger of miscal-culation can only be minimized.	• Countercheck on the basis of own calculation. • Spread sheet walk-trough. • Plausibility checks • Check of plots	• **See Table A-2**
Monitoring reporting				
• Data transfer to the author of the monitoring report • Data transfer to the monitoring report • Unintended use of	• An experienced JI consultant is responsible for monitoring reporting. • JI QMS procedures are defined	• The danger of data transfer mistakes can only be minimized • Inappropriate application of QMS procedures	• Counter check with evidences provided. • Audit of procedure application	• **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 *Forward Action Requests*)
outdated versions				

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

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
1. Project history				
Open issues from determination PDD *Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?*	/PDD/ /FDR/	This is the first periodic verification. There are no open issues (FARs) indicated in the determination PDD report/FDR/. CAR H1 has been raised because Letter of Approval from all parties involved are pending.	CAR H1	
Open issues from previous verification *Check in case of further periodic verifications whether there are any open issues indicated in previous verification (FAR)?*		N/A. This is the first periodic verification.	OK	OK
Requests for Deviations / Revisions of MP *Check if there have been any requests for deviations from the registered monitoring plan or requests for revisions of the monitoring plan. If any, make sure that they are considered during verification?*	/PDD/ /FDR/	The published project related documentation was checked. No requests for deviations or revision of monitoring plan have been published before the start of the verification.	OK	OK
Initial verification *In case an initial verification has been carried out, check if all FARs, recommendations etc. have been addressed appropriately.*		N/A	OK	OK
Initial project implementation *In case of first periodic verification: Assess whether the project has been implemented and operated as per the registered PDD and are all physical features*	/PDD/ /FDR/ /TS-PA/	The project has been implemented and operated as per PDD. This was verified by onsite observation and crosschecked with the Project Engineering Monitoring Report and technical specification of the equipment/TS-PA/.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
of the project in place? *In case of further periodic verifications: Go to next chapter.*				
2. Update on Changes and Incidents (during the Monitoring Period)				
Technical equipment *Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period.* *Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.* *In case of changes, check whether the project is still in line with the registered PDD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.*	/PDD/ /FDR/ /TS-PA/	In the course of this verification the verification team has inspected the project site and interviewed the operational personnel. During the audit by means of instrument specifications it was evidenced, that no relevant equipment was exchanged within the monitoring period.	OK	OK
Operation modes *Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.* *Consider e.g. interviews with operational personnel, operation log sheets, data management system records.* *In case of changes, check whether the project is still in line with the registered PDD and assure that these*	/PDD/ /FDR/	By means of 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.) have been identified.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
changes have been considered in the monitoring report and the emission reduction calculation.				
Incidents *Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?* *Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.*	/PDD/ /FDR/ /MR/	No significant incidents have occurred during the monitoring period. This was also backed up by the data integrity check. A decrease of the electricity generation has been observed. It was caused by the delayed implementation of the 5th turbine. Additionally, a decrease of diesel fuel consumption on DPPs and GTPP has been identified, as compared with the registered PDD.	OK	OK
Personnel *Find out, if relevant personnel w.r.t. monitoring has been exchanged?* *In case of changes, assure that the implemented monitoring procedures have not been affected.*	/PDD/ /FDR/ /MR/	A well elaborated operational and management structure has been introduced. In the course of the verification it has been observed that roles and responsibilities of personnel and departments performing the monitoring of the project as indicated in the monitoring report reflect the actual situation.	OK	OK
Legislation Find out whether relevant legislation with effect on the project activity in the host country has been changed.	/PDD/ /FDR/ /MR/	Relevant legislation was considered. No relevant changes since the validation were identified.	OK	OK
3. Monitoring Report – General				
Monitoring period *Check if the monitoring period is in line with a) the crediting period and/or b) previous monitoring periods?*	/PDD/ /FDR/ /MR/	The 1st monitoring period lasts from 2008-01-01 to 2008-12-31. Both days are included. This is in line with JI Guidelines.	OK	OK
References	/PDD/	The monitoring report has been checked. It could be verified that it provides the correct references like project title, applied	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Check if the monitoring report provides the correct references, in detail: project title, applied methodology/ies, meth tools.	/FDR/ /MR/	methodology.		
Completeness *Assess if the monitoring report is complete, i.e. have all relevant issues been addressed?*	/PDD/ /FDR/ /MR/	The covered issues in detail are as follows: ☒ (i) Implementation status ☒ (ii) Monitoring systems and procedures (esp. QA/QC) ☒ (iii) All parameters and corresponding intervals ☒ (iv) Information on calibration of monitoring instruments ☒ (v) Emission factors, IPCC default values, etc. ☒ (vi) Reference to deviations, if applicable ☒ (vii) Calculation of emission reductions ☒ (viii) Comparison of ER with PDD estimation	~~CAR Q1~~	OK
Transparency *Assess if the monitoring report is transparent, i.e. clear and unequivocal in all respect?*	/PDD/ /FDR/ /MR/ /XLS/	The monitoring report includes an accurate and clear description of the project activity, a list of the month wise data of 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 information is provided in a clear and transparent manner in the table format. No ambiguous statements have been identified.	OK	OK
Misstatements on general issues *Assess whether the monitoring report is free of*	/MR/	The information w.r.t the calibration/control of the measurement equipment has been not provided. CAR Q1 has been raised in this context and successfully closed.	~~CAR Q1~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
material misstatements regarding issues other than the monitoring parameters. *Discuss the monitoring parameters in detail in chapter "Monitoring Parameters".*				
Deviations from the validated monitoring plan *Assess whether the MR in line with the validated monitoring plan?*	/PDD/ /FDR/ /MR/	The monitoring system and all applied procedures have been reviewed. It has been verified that the monitoring system and all applied procedures are completely in compliance to the validated monitoring plan. The CARs and CRs raised in this context have been successfully closed. The validated monitoring plan specifies procedures for data collecting and reporting. These procedures have been appropriately followed by the project participant within the monitoring. It could be verified that appropriate measurement equipment has been used. Also the collection and recording of the monitoring parameters has been duly carried out by the responsible personnel. Furthermore the monitoring plan provides an Excel calculation spreadsheet. Emission reductions have been appropriately computed in the provided Excel spreadsheet. There are some deviations due to the fact that the considered monitoring period has been carried before the determination of the monitoring plan. These deviations have been transparently listed in the monitoring report and appropriately justified. Verification team has assessed that these deviations do not have an impact on the accuracy of the generated emission reductions. For this reason the deviations have been accepted by the verification team. For details please refer to the monitoring of APG consumption by the GTUs.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Deviations from the approved methodology *Assess whether the MR in line with the applied monitoring methodology?*	/MR/	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. For further details please refer to the comment above. The verification team has come to the conclusion that the applied methodology for determination of the emission reductions is in line with the validated monitoring plan.	OK	OK
4. Monitoring Parameters *(List all parameters of the PDD chapter B.7.1; pl. copy the 6 lines below for each parameter)*				
4.1. Electricity output				
Measurement / Determination method *Describe how the monitoring parameter was measured / determined.* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/MP/ /XLS/ /Mt-E/ /Elec/ /PDD/	The monitoring of the net power generation is based on monthly meter readings installed at switchgear of Power Center Substation. 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. During the on-site-visit it could be observed that there are separate meters for: (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.) All relevant data are recorded appropriately and in accordance with the monitoring plan. Hence it could be concluded that	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		monitoring system provides for a clear and accurate monitoring.		
Correctness *Determine whether the value given in the monitoring report is correct.* *In case of mistakes pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /Elec/	☒ Correct ☐ Not correct Comment: The information about electricity 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/.	OK	OK
QA/QC Procedure *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.*	/MR/ /XLS/ /Elec/	The recorded figures as per the log book are submitted for review that is carried out by the responsible personal. By doing this the monitoring figures undergo plausibility and accuracy check review. Based on this determination team has gained a sufficient confidence that double check procedures for monitoring parameters have been introduced and are in line with requirements of the monitoring plan. The monitoring report includes a principal scheme of the monitoring plan including the information about roles and responsibilities. Provided evidences has been approved by the responsible department/Elec/.	OK	OK
Accuracy *In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.*	/MR/ /XLS/ /Elec/ /Mt-E/ /Cal-E/	It could be proved that the accuracy class and the calibration of the applied electricity meters are as per the provided technical specification/Mt-E/ and calibration certificates/Cal-E/. The accuracy class of the installed equipment is in line with information provided in the monitoring report.	OK	OK
Verification *Describe how the value was verified. Consider the measurement / determination procedure, accuracies,*	/MR/ /XLS/	During the on-site visit the accurate measurement and recording frequency (i.e. archiving in log book) could be observed. The determination team has reviewed the log books and checked the	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
QA/QC procedures. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences.	/APG/	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.		
4.2. Chemical composition of APG				
Measurement / Determination method *Describe how the monitoring parameter was measured / determined.* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/MR/ /XLS/ /Chro/ /PDD/	The chemical composition of APG is measured by chromatograph. Measurements have been carried out by an independent laboratory – Nauka II. The independent laboratory is responsible for measurement and proper maintenance of the monitoring equipment – Chromatograph. The measurements in 2008 have been provided and it could be verified that they are carried out in accordance official standards/Chro/. According to the monitoring plan the measurements have to be carried out quarterly. However for the considered monitoring period the applied chemical composition is based on the three samples. At the time of the finalization and validation of the monitoring plan the procedures for data recording were not defined in detail. Due to this deviation occurred in the considered monitoring period. Taking into account that the three samples indicate relative constant volumetric fractions of APG esp. within the considered period and the average value has been applied the verification team is of the opinion that the impact on emission reduction is of	OK	OK

Checklist Item (incl. guidance for the verification team)	Refe-rence	Verifiers Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		minor character. The deviation and the reasons have been transparently explained in the monitoring report and have been accepted by the verification team.		
Correctness *Determine whether the value given in the monitoring report is correct.* *In case of mistakes pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /Chro/ /PDD/	☒ Correct ☐ Not correct Comment: The information about 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/.	OK	OK
QA/QC Procedure *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.*	/MR/ /XLS/ /Chro/ /PDD/	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 has been gained that the monitoring equipment is duly calibrated and maintained. For this reason verification team has concluded that a sufficient level quality is ensured by the monitoring plan.	OK	OK
Accuracy *In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.*	/MR/ /XLS/ /Chro/ /PDD/	Calibration procedures and accuracy class (0.3%) of the measurement equipment – chromatograph – has been crosschecked with provided evidences and the appropriateness could be verified. The independent laboratory is responsible for measurement and proper maintenance of the monitoring equipment – Chromatograph. Nauka II is an independent laboratory accredited with respect to technical competence according to Russian standards for accreditation (GOST). Hence a sufficient confidence has been gained that monitoring equipment is duly calibrated and maintained.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Verification *Describe how the value was verified. Consider the measurement / determination procedure, accuracies, QA/QC procedures. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences.*	/MR/ /XLS/ /Chro/ /PDD/	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/. Also CAR R1 has been raised in this context and successfully closed.	~~CAR R1~~	OK
4.3. Total APG consumption in GTUs				
Measurement / Determination method *Describe how the monitoring parameter was measured / determined.* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*		The APG consumption of GTU is measured by the special Siemens program based on the data of the instant consumption that has been installed as an integral part of the project activity. The verification team has inspected the control room and the functioning of the Siemens program has been observed. Siemens program enables an accurate monitoring of the APG consumption in GTUs. Verification team is of the opinion that APG consumption has been monitored in accordance with provisions of the monitoring plan and in an appropriate manner. However for the considered monitoring period the instant consumption of particular GTUs has been monitored but not recorded as per the procedures of the monitoring plan. Instead of this project participant has recorded directly the APG consumption of particular GTUs. This has been done only for the monitoring period that was before the finalization and validation of the monitoring plan. At this time the procedures for data recording were not defined in detail. It is important to mention that the deviation related only to the recording procedures. The deviation has no impact on the	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
		accuracy of the monitored amount of APG consumption by GTUs. The deviation and the reasons have been transparently explained in the monitoring report. During the on-site visit verification team has checked the monitoring of APG consumption by the applied Siemens program. The program is able to generate analysis of the historical data. Historical data have been provided and the plausibility of the applied amounts of the APG consumption could be verified.		
Correctness *Determine whether the value given in the monitoring report is correct.* *In case of mistakes pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /APG/	☒ Correct ☐ Not correct Comment: 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/.	OK	OK
QA/QC Procedure *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.*	/MR/ /XLS/ /APG/	The calibration and control of the Siemens program for instant consumption has been carried out by technology supplier in the course of the special manufacturer inspection. Hence it could be concluded that calibration and maintenance of the monitoring equipment has been carried out by competent personnel.	~~CAR R1~~	OK
Accuracy *In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.*	/MR/ /XLS/ /APG/	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.	OK	OK
Verification	/MR/	During the on-site visit verification team has checked the	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Describe how the value was verified. Consider the measurement / determination procedure, accuracies, QA/QC procedures. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences.	/XLS/ /APG/	monitoring of APG consumption by the applied Siemens program. The program is able to generate analysis of the historical data. Historical data have been provided and the plausibility of the recorded figures could be verified. The daily handling of the monitoring procedures for the APG consumption has been assessed as accurate and appropriate. It could be verified that monitoring procedures and daily handling are in line with the monitoring plan. The recorded figures have been cross checked with aggregated data in electronic form and it could be verified that the monitoring of APG consumption has been established in an appropriate and accurate manner.		
4.4. Diesel consumption in GTUs				
Measurement / Determination method *Describe how the monitoring parameter was measured / determined.* *Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.* *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/MR/ /XLS/ /PDD/ /GTU-D/ /GrTab/ /Inv-b/	The diesel consumption in GTUs has to be monitored for calculation of the project emissions. This is because the GTUs can be fired with APG and Diesel. Fuel consumption in GTUs is monitored by measuring the reservoir level three times per month (data are put into the special inventory book) in accordance with measurements conversion table/GrTab/. This could be verified based on provided inventory book/Inv-b/ and measurements conversion table/GrTab/. Also the fuel added to the reservoir has been recorded. In this context it is important to note that diesel should be used only in emergency cases. Based on the recorded figures it could be observed that diesel was used within the installation and testing phase. In addition it was observed that after proper commissioning diesel was almost not used.	OK	OK
Correctness	/MR/ /XLS/	☒ Correct ☐ Not correct Comment:	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Determine whether the value given in the monitoring report is correct. *In case of mistakes pl. provide details and descriptions of the CARs raised.*	/PDD/ /GTU-D/	The diesel consumption in GTUs has been provided/GTU-D/. 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/.		
QA/QC Procedure *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.*	/MR/ /XLS/ /PDD/ /GTU-D/	The calibration and control of the metering equipment has been carried out.	OK	OK
Accuracy *In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.*	/MR/ /XLS/ /PDD/ /GTU-D/	The applied measurement procedures are in line with procedures defined in the PDD.	OK	OK
Verification *Describe how the value was verified. Consider the measurement / determination procedure, accuracies, QA/QC procedures. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences.*	/MR/ /XLS/ /PDD/ /GTU-D/	During the on-site visit verification team has checked procedures for monitoring of the diesel consumption for GTUs operation. It could be verified that monitoring procedures and daily handling are appropriate and in line with the monitoring plan.	OK	OK
4.5. Diesel consumption in DPP				
Measurement / Determination method *Describe how the monitoring parameter was measured / determined.* *Check if relevant equipment has been exchanged*	/MR/ /XLS/ /PDD/	Diesel Fuel consumption in Diesel units in emergency cases. This parameter is monitored by flow meters and is recorded in the inventory book on daily basis. Flow meter data is registered with invoice at the end of each month. Measurement equipment	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. *Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.*	/DPP-C/ /DPP-K/ /DPP-N/	and procedure and the monitoring frequency deemed to be appropriate. Considering this it was concluded that the QA/QC procedures have been appropriately elaborated and followed by the project participant.		
Correctness *Determine whether the value given in the monitoring report is correct.* *In case of mistakes pl. provide details and descriptions of the CARs raised.*	/MR/ /XLS/ /PDD/ /DPP-C/ /DPP-K/ /DPP-N/	☒ Correct ☐ Not correct Comment: The diesel consumption in DPPs has been provided /DPP-C//DPP-K//DPP-N/. 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/.	OK	OK
QA/QC Procedure *Describe whether all applicable QA/QC procedures are met. Assess further if the calibration and maintenance of the monitoring equipment has been carried out by competent personnel.*	/MR/ /XLS/ /PDD/ /DPP-C/ /DPP-K/ /DPP-N/	Please refer to the comments above.	OK	OK
Accuracy *In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.*	/MR/ /XLS/ /PDD/ /DPP-C/ /DPP-K/	The applied measurement procedures are in line with that provided in the PDD.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
	/DPP-N/			
Verification *Describe how the value was verified. Consider the measurement / determination procedure, accuracies, QA/QC procedures. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences.*	/MR/ /XLS/ /PDD/ /DPP-C/ /DPP-K/ /DPP-N/	During the on-site visit verification team has checked the log books and meter readings. It could be verified that monitoring procedures and daily handling are appropriate and in line with the monitoring plan.	OK	OK
5. ER Calculation				
Traceability *Assess if the calculation is fully traceable. In case of complex calculations an Excel calculation spread-sheet shall be used. All applied formulae must be visible.*	/MR/ /XLS/	The calculation is completely traceable. All applied formulae are visible. No information gaps have been identified.	~~CAR R1~~	OK
Parameter consistency *Assess whether all internal and external parameters and data used for calculation are applied consistently in the monitoring report and the calculation spreadsheet?* *Consider only the correct data exchange between the monitoring report and the calculation spreadsheet (if any). The evaluation of the correctness of the parameter values itself should be discussed in the chapter "Monitoring Parameters".*	/MR/ /XLS/	The Excel calculation sheet is completely in line with the MR. No deviant parameter values have been used in the calculation sheet.	OK	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Applied formulae *Check if the applied formulae are in accordance with the monitoring plan and / or the approved methodology.*	/MR/ /XLS/	The verification team has reproduced the calculation of emission reductions based on the provided parameters and the amount of the emission reduction has been verified. The applied spreadsheet has been also reviewed and examined. It has been verified that the formulae and procedures as defined within the monitoring plan have been appropriately applied. No changes and deviations to the approved spreadsheet have been observed.	OK	OK
Completeness of calculation *Assess whether the provided calculations are complete and reflect all requirements of the monitoring plan.* *Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.*	/MR/ /XLS/	The calculation is completely traceable. No information or calculation gaps have been identified.	OK	OK
6. Quality Management; defined organisational structure, responsibilities and competencies Internal QA/QC and document control				
Management System *Check if the GHG data monitoring system is embedded in a (certified) company quality management system, if so, check if all JI monitoring procedures been fully integrated in the project participant's quality management system. If not how the GHG management system has been*	/MP/ /PDD/	Project participant has appropriately implemented procedures for data management and processing within the particular stages of the monitoring. The improved system is based on the four-eye principle and provides procedures for double check procedures. A sufficient confidence has been gained that these procedures	~~CAR H1~~	OK

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
implemented.		ensure high quality project management of all sub-projects.		
Roles and Positions *Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented, from raw data generation to submission of the final data.* *Check further if only duly qualified personnel is involved in the monitoring procedures.*	/MP/ /PDD/	Different tasks within the monitoring are clearly allocated to the personal of the different departments of the project participant and/or responsible companies. Personal and the corresponding tasks/responsibilities of the project monitoring are clearly defined. Furthermore all procedures have been clearly documented. 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 generated emission reductions.	OK	OK
Trainings *Check if initial trainings have been carried out, in case deemed necessary.*	/MP/ /PDD/	In the course of the verification a sufficient confidence has been gained that the competences of involved staff and responsible persons ensure an appropriate quality of data. The involved personnel are familiar with monitoring procedures and with the technology applied.	OK	
Troubleshooting procedures *Assess whether troubleshooting procedures have been implemented.*	/MP/ /PDD/	Please refer to the comment under QA/QC Procedures	OK	OK
Maintenance procedures Are appropriate maintenance procedures in place?	/MP/ /PDD/	All relevant meters are calibrated and sealed.	OK	

Checklist Item (incl. guidance for the verification team)	**Refe-rence**	**Verifiers Comments** (Means and results of assessment)	**Draft Concl.**	**Final Concl.**
Internal QA/QC *Assess whether there are any procedures in place on when, where and how checks and reviews are to be carried out, and what evidence needs to be documented? (This might include spot checks by a second person not performing the calculations over manual data transfers, changes in assumptions and the overall reliability of the calculation processes.)*	/MP/ /PDD/	Please refer to the comment under QA/QC Procedures	OK	OK
Data archive Check whether all records of monitoring parameters are archived according to the monitoring plan.	/MP/ /PDD/	Yes, the data archiving is in line with provisions of the monitoring plan.	OK	OK
Data protection Assess whether appropriate measures have been take in order to avoid unintended or intended manipulation of the measured data.	/MP/ /PDD/	This issue has been discussed and a sufficient confidence has been gained that appropriate measures have been taken in order to avoid unintended or intended manipulation of the measured data	OK	OK