



VERIFICATION REPORT

- 2ND PERIODIC –

OJSC — OIL COMPANY ROSNEFT

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

Monitoring Period: 2009-01-01 TO 2009-12-31

(incl. both days)

Report No: 8000369890-10/72

Date: 2010-05-28

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|--|--|--------------------------------|--------------------------------------|--------------------------|---------------------|---------|--------|--------------------|---------|--------|----------|---|--------|-----------------------------|----------------|---------------|
| Verification Report: | Report No. | Rev. No. | Date of 1st issue: | Date of this rev. | | | | | | | | | | | | |
| | 8000369890-10/72 | 0 | 2010-05-28 | 2010-05-28 | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | |
| | 2009-01-01 to 2009-12-31 - both days included | 365 | 2 | | | | | | | | | | | | | |
| Monitoring report: | Title: | Draft version: | Final version: | | | | | | | | | | | | | |
| | "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field" | 0 | | | | | | | | | | | | | | |
| Verification team / Technical Review and Final Approval | Verification Team: | Technical review: | Final approval: | | | | | | | | | | | | | |
| | Rainer Winter Anton Yarushin | Walter Ulrich | Eric Krupp | | | | | | | | | | | | | |
| | Evgeni Sud | | | | | | | | | | | | | | | |
| Emission reductions: [t CO_{2e}] | Verified amount | As per Draft MR: | As per PDD: | | | | | | | | | | | | | |
| | 113,791 | 114,448 | 128,931 | | | | | | | | | | | | | |
| Summary of Verification Opinion: | <p>TÜV NORD JI/CDM Certification Program has carried out the 2nd 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 2009-01-01 to 2009-12-31 (including both days).</p> <p>In the course of the verification 5 Corrective Action Requests (CAR) and 3 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: 2010-02-05^{MR-1/}), final monitoring report (dated: 2010-03-10^{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.</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 2nd 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:</p> <table><tr><td>Baseline emissions:</td><td>265,256</td><td>t CO2e</td></tr><tr><td>Project emissions:</td><td>151,464</td><td>t CO2e</td></tr><tr><td>Leakage:</td><td>-</td><td>t CO2e</td></tr><tr><td>Emission reductions:</td><td>113,791</td><td>t CO2e</td></tr></table> | | | | Baseline emissions: | 265,256 | t CO2e | Project emissions: | 151,464 | t CO2e | Leakage: | - | t CO2e | Emission reductions: | 113,791 | t CO2e |
| Baseline emissions: | 265,256 | t CO2e | | | | | | | | | | | | | | |
| Project emissions: | 151,464 | t CO2e | | | | | | | | | | | | | | |
| Leakage: | - | t CO2e | | | | | | | | | | | | | | |
| Emission reductions: | 113,791 | t CO2e | | | | | | | | | | | | | | |
| Document information: | Filename: | | | Num. of pages: | | | | | | | | | | | | |
| | 2010-06-01 FVR Khasyrey 2nd verif_rev2 | | | 53 | | | | | | | | | | | | |

Abbreviations:

| | |
|-------------------------|--|
| CA | Corrective Action / Clarification Action |
| CAR | Corrective Action Request |
| CDM | Clean Development Mechanism |
| CER | Certified Emission Reduction |
| CO₂ | Carbon dioxide |
| CO_{2eq} | Carbon dioxide equivalent |
| CR | Clarification Request |
| DH | District Heating |
| DVM | JI Determination and Verification Manual |
| 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 2nd 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 2009-01-01 to 2009-12-31 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 2nd 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,
- JI Determination and Verification Manual^{/DVM/},
- 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 | <input checked="" type="checkbox"/> Large Scale | <input type="checkbox"/> 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 | 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 |

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 JI 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 | 2009-12-22 |
| On-site-visit | From 2010-02-14 till 2010-02.19 |
| Draft reporting finalised | 2010-22-02 |
| Final reporting finalised | 2010-05-26 |
| Technical review finalised | 2010-05-28 |

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 |
|---|----------------|--------------------|------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms. | Rainer Winter | TÜV Nord Cert GmbH | TL | SA | <input checked="" type="checkbox"/> | K | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms. | Evgeni Sud | TÜV Nord Cert GmbH | TM | E | <input checked="" type="checkbox"/> | - | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms. | Anton Yarushin | TÜV NORD Russia | TM | E | <input 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⁾ | E | <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

3.4. 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) |
| <i>The following potential risks were identified 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 (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. |
| <i>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.</i> | <i>Description of circumstances and further commendation to the conclusion.</i> | <i>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</i> | <i>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.</i> |

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 | <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 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 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 | 1 | 0 |
| P – Monitoring Parameters | 2 | 2 | 0 |
| C – Emission Reduction Calculation | 1 | 0 | 0 |
| Q – Quality Management | 0 | 0 | 0 |
| SUM | 5 | 3 | 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 | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None |
| 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. |
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | On 4 th 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. |

| CAR H1 | |
|---|--|
| 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 determination ERU <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 CAR / CL is closed, <input type="checkbox"/> The CAR / CL could not be closed. |

| CAR R1 | | | | |
|---|---|------------------------------|-----------------------------|-------------------------------|
| Classification | <input checked="" type="checkbox"/> CAR | <input type="checkbox"/> FAR | <input type="checkbox"/> CR | <input type="checkbox"/> None |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | Please use the numbering of the monitoring points as indicated in the PDD. | | | |
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | Parameter FC _{APG,PJ} "Amount of APG provided to Power Center" has been excluded from the monitoring plan and numbering revised accordingly. See explanation below. | | | |
| 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 numbering has been duly revised. The monitoring report provides a clear and transparent numbering of the monitoring points. | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | <input type="checkbox"/> To be checked during the first periodic determination ERU <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 CAR / CL is closed, <input type="checkbox"/> The CAR / CL could not be closed. | | | |

| CR R2 | | | | |
|---|---|------------------------------|--|-------------------------------|
| Classification | <input type="checkbox"/> CAR | <input type="checkbox"/> FAR | <input checked="" type="checkbox"/> CR | <input type="checkbox"/> None |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | FC _{APG,PJ} Amount of APG provided to Power Center has been not included in the monitoring report. Please clarify the reasons for exclusion. | | | |

| CR R2 | |
|---|---|
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | <p>The parameter was initially included in the monitoring plan in the PDD to provide a possibility for the cross check of the APG volume consumed by GTUs. It has no influence to the ERUs calculation. However in autumn 2008 the clarification was received from Severnaya Neft that gas turbines are not the only APG consumers. Apart from them the Energy Center has heaters fed by APG, also some amount of the APG is consumed during the purification of the gas prior to turbines inlet feeding. It means that the volume of APG supplied to Power Center will always be less than APG consumption in GTUs which makes a cross check to be impossible. Thus the parameter of APG supplied to Power Center was excluded from the monitoring report as irrelevant. The deviation from the monitoring plan in the PDD was additionally justified in the table B.2.1. of the monitoring report, version 2.0 of 10.01.2010.</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>Determination team confirms that according to the monitoring plan as per the PDD this parameter has been included for crosscheck purposes only. As indicated in the PDD this metering point provides information about the amount of APG sent to the Power Center and to the flare. Thus already at the determination stage it was evident that potential for crosscheck analysis is limited.</p> <p>As further consumers have been added determination team agreed that potential for crosscheck analysis is not given. Hence the exclusion has been assessed as appropriate. Exclusion has been duly justified in the Monitoring report. The special Siemens program is maintained and checked on a regular basis by the manufacturer. For this reason it has been concluded that accurateness of APG measurements are sufficiently ensured by this program.</p> |
| Conclusion <i>Tick the appropriate checkbox</i> | <p> <input type="checkbox"/> To be checked during the first periodic determination ERU <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 CAR / CL is closed, <input type="checkbox"/> The CAR / CL could not be closed. </p> |

| CAR P1 | | | | |
|---|--|------------------------------|-----------------------------|-------------------------------|
| Classification | <input checked="" type="checkbox"/> CAR | <input type="checkbox"/> FAR | <input type="checkbox"/> CR | <input type="checkbox"/> None |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | <p>Automatic special Siemens program does not archive the instant consumption of APG in i-GTU of Power Center as indicated in the monitoring plan. Only total daily APG consumption of all 5 GTUs is archived by the system.</p> <p>Please explain how this affects the accuracy of the generated emission reductions.</p> | | | |

| | CAR P1 |
|---|---|
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | <p>There is no influence to the accuracy to the emission reduction calculations because the excel spreadsheet anyhow operates with total APG consumption in Khasyrey GPP (Power Center). Just for transparency the division for each of 5 turbines has been made.</p> <p>However following your comment the up-date will be made in the internal monitoring procedure of Severnaya neft and as well in the monitoring report for 2010 to reflect the up-date in the indication specifics of Automatic special Siemens program.</p> <p>The only parameters of total daily APG consumption of all turbines and number of days in month will be monitored and results for the year summarised.</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>Determination concluded that the way of presenting monitoring parameters has no impact on the accuracy of the emission reduction calculations. This is because emission reductions are computed based on the total amount of APG consumed by the GTUs. This parameter is appropriately monitored and archived.</p> <p>Taking this into account it has been concluded that determination of the achieved emission reductions is accurate and in line with provisions of the monitoring plan as indicated in the PDD.</p> |
| Conclusion <i>Tick the appropriate checkbox</i> | <p><input type="checkbox"/> To be checked during the first periodic determination ERU</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The CAR / CL is closed,</p> <p><input type="checkbox"/> The CAR / CL could not be closed.</p> |
| Conclusion <i>Tick the appropriate checkbox</i> | |

| | CAR P2 |
|--|---|
| Classification | <input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | <p>Recordings of diesel fuel consumption for GTUs in the special inventory book are carried 1-2 times in month. The additions to the diesel reservoir have been not recorded in this journal. This is not as per the monitoring plan.</p> <p>Please explain how this affects the accuracy of the generated emission reductions.</p> |
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | <p>The monitoring plan in the PDD, version 05, for parameter M-5, «diesel fuel consumption by gas-turbine unit» contains following comment:</p> <p>“Diesel fuel consumption is defined by measuring the reservoir level three times per month (data are put into the special inventory book). And at the end of the shift (once a month) petroleum inventory report is composed. Additional fuel portions in the reservoir will be considered too”.</p> <p>It means that the finding mentioned is in line with the monitoring</p> |

| | CAR P2 |
|---|--|
| | <p>plan. The measurement of the fuel level is done at least at the end of working of each shift team to ensure that material value (diesel fuel) is handed in to the other shift in the documented amount.</p> <p>Since the diesel fuel tank for Power Center turbines has much more capacity in comparison with small consumption by the turbines for maintenance reasons, the inventory write-off report for diesel fuel consumed by GTUs is done not always monthly. In 2009 it was arranged just twice, in August and in December. The data from these reports were transferred to the monitoring report and excel spreadsheet as officially confirmed data.</p> <p>However, indeed, according to the internal instruction of Severnaya neft the shifts of Energy Center are obliged to report on the use of material values during their working. This includes among the others the diesel fuel use in gas turbines and diesel fuel use for filling the GTUs diesel fuel tank.</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>In the course of the on-site inspection it could be verified that measurements of the reservoir are carried out at the end of the shift (at least once a month). Though the fuel adding to the reservoir during the shift are not recorded in the inventory book, they could be verified based on the information provided by the company's internal reporting and invoicing system. The inventory write-off reports for diesel fuel consumed by GTUs have been provided and the amount of fuel consumed could be verified.</p> <p>As the amount of the diesel consumption is of a minor relevance verification team was able to conclude that the determination of the emission reductions has been carried out accurately and appropriately.</p> |
| Conclusion <i>Tick the appropriate checkbox</i> | <p><input type="checkbox"/> To be checked during the first periodic determination ERU</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The CAR / CL is closed,</p> <p><input type="checkbox"/> The CAR / CL could not be closed.</p> |

| | CR P3 |
|---|--|
| Classification | <input type="checkbox"/> CAR <input type="checkbox"/> FAR <input checked="" type="checkbox"/> CR <input type="checkbox"/> None |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | <p>Monthly data of the electricity generation and output are provided by the chief of the shift team and not by electrician as indicated in the monitoring report. Please clarify procedures for data recordings and collecting.</p> |

| | CR P3 |
|---|---|
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | <p>Monthly data on electricity output (and generation) from Power Center to customers are in fact provided by the Power Center shift head to the Power engineering department as indicated at the Principal scheme of monitoring of greenhouse gases emission reduction in the "RN-Severnaya Neft", page 6.</p> <p>However physically the values of electricity meters in the cells are recorded by the electricians on duty as per Table B.3.1. "Points and parameters monitoring of GHGs emission reductions".</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>During the on-site visit verification team has interviewed the involved personnel and carried out document review to assess this issue. Based on this it could be concluded that recording electricity generation is carried out by well-qualified personnel of the shift of the Power Center.</p> <p>Monthly data of the electricity generation are collected by the electrician and provided by chief of the shift team. Nevertheless the chief of the shift team is responsible for accuracy and appropriateness of the recording and reporting of the electricity generation. Taking this into account it could be concluded that electricity generation is carried out in a appropriate manner and complies with provisions of the monitoring plan.</p> |
| Conclusion <i>Tick the appropriate checkbox</i> | <p><input type="checkbox"/> To be checked during the first periodic determination ERU</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The CAR / CL is closed,</p> <p><input type="checkbox"/> The CAR / CL could not be closed.</p> |

| | CR P4 |
|--|---|
| Classification | <input type="checkbox"/> CAR <input type="checkbox"/> FAR <input checked="" type="checkbox"/> CR <input type="checkbox"/> None |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | <p>Diesel fuel consumption for GTUs in 2009 as per the bill is not in line with data as per the inventory book. Please clarify the deviation.</p> |
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | <p>Since the diesel fuel tank for Power Center turbines has much more capacity in comparison with small consumption by the turbines for maintenance reasons, the inventory write-off report for diesel fuel consumed by GTUs is done not always monthly. In 2009 it was arranged just twice, in August and in December. The data from these reports were transferred to the monitoring report and excel spreadsheet as officially confirmed data.</p> <p>Thus the total diesel consumption in 2009 is a sum of two write-off report (August and December).</p> <p>Anyhow as the opportunity for improvement Severnaya Neft will be requested to provide write-off report for diesel fuel consumed in GTUs for every month when it took place.</p> |

| CR P4 | |
|---|---|
| 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 corresponding evidences have been provided and it could be confirmed that the total diesel consumption in 2009 is a sum of two write-off reports. This is appropriate. |
| Conclusion <i>Tick the appropriate checkbox</i> | <input type="checkbox"/> To be checked during the first periodic determination ERU <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 CAR / CL is closed, <input type="checkbox"/> The CAR / CL could not be closed. |

| CAR C1 | | | | |
|---|---|------------------------------|--|-------------------------------|
| Classification | <input type="checkbox"/> CAR | <input type="checkbox"/> FAR | <input checked="" type="checkbox"/> CR | <input type="checkbox"/> None |
| Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i> | The electricity generation and output values for November 2009 in the excel spreadsheet are not in line with provided evidences. Please correct. | | | |
| Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i> | Indeed the typing error was identified. The correct figures of electricity generation and output in Nov 2009 have been inserted to the excel spreadsheet and to the monitoring report. The version of the spreadsheet and monitoring report were revised to 2.0 of 10.03.2010. Updated ERUs amount for 2009 is 113 791 tones CO _{2eq} . | | | |
| 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 minor miscalculations have been duly corrected. It could be confirmed that the calculation is now appropriate. | | | |
| Conclusion <i>Tick the appropriate checkbox</i> | <input type="checkbox"/> To be checked during the first periodic determination ERU <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 CAR / CL is closed, <input type="checkbox"/> 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.

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 during the monitoring period.

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 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.

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 2nd 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 2009-01-01 to 2009-12-31 (including both days).

In the course of the verification 5 Corrective Action Requests (CAR) and 3 Clarification Requests (CR) were raised and successfully closed. No FARs has been raised to improve the monitoring system in the future.

The verification is based on the hosted monitoring report (dated: 2010-02-05^{/MR-1/}), final monitoring report (dated: 2010-03-10^{/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 2nd 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: | 265,256 | t CO2e |
| Project emissions: | 151,464 | t CO2e |
| Leakage: | - | t CO2e |
| Emission reductions: | 113,791 | t CO2e |

Essen, 2010-03-29

Essen, 2010-03-29

Mr. Rainer Winter

Mr. Eric Krupp

Verification Team Leader

Final Approver

TÜV NORD JI/CDM Certification Program

TÜV NORD JI/CDM Certification Program

7. REFERENCES

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

| Reference | Document |
|-----------|---|
| /APG/ | Consumption of the associated petroleum gas for electricity generation (GTU) in 2009 |
| /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 Nr. 944 dated 18.11.08, Nr 40 dated 20.01.2009, Nr 335 dated 15.04.2009, Nr 569 dated 30-06.2009, Nr.696 dated 13.08.2009 |
| /DPP-C/ | Diesel consumption DPP Cherpaju |
| /DPP-K/ | Diesel consumption DPP KhasyreY |
| /DPP-N/ | Diesel consumption DPP Nadeju |
| /Elec/ | Data of the electricity generation and output in 2009 |
| /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) |
| /Lab-1/ | Accreditation certificate of the Laboratory Nauka II valid till 04.09.2010 |
| /Lab-2/ | Training certificates of the laboratory personnel involved in the analysis of the APG components |
| /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 |

| Reference | Document |
|---------------|---|
| /Mt-E/ | Technical specification for the electricity metering equipment including the information about the initial verification (calibration) and verification interval |
| /MR-1/ | Monitoring report of GHGs emission reductions (01.01.2009 – 31.12.2009) "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field" dated 2010-02-05 |
| /MR/ | Monitoring report of GHGs emission reductions (01.01.2009 – 31.12.2009) "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey oil field" dated 2010-03-10. |
| /PDD/ | Project Design Document Version 5 " dated 05.08.2009 "Associated petroleum gas flaring reduction and electricity generation at the Khasyrey Oil Field" |
| /Tr/ | Implementation of the 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 7-2: 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 |

| Reference | Document |
|-----------|---|
| /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 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 |
| /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 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 |

| Reference | Link | Organisation |
|-----------|---|---|
| /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 |
| /mert/ | http://www.economy.gov.ru/wps/wcm/connect/economylib/mert/welcome/economy/kior_ealize/analiticmath/ | Ministry for economic Development of the Russian Federation |
| /unfccc/ | http://cdm.unfccc.int | UNFCCC |

Table 7-4: Interviewed Persons

| Reference | Mol ¹ | | Name | Organisation / Function |
|-----------|------------------|--|----------------|---|
| /IM01/ | V | <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms | A. W. Uljanow | Chief energy engineer "RN-Severnaya Neft" LLC |
| /IM01/ | V | <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms | V. N. Lukasjow | Environmental Safety department "RN-Severnaya Neft" LLC |
| /IM01/ | V | <input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms | G. Arteminko | Engineer 1 st category Environmental Safety department "RN-Severnaya Neft" LLC |
| /IM01/ | V | <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms | I. Korovin | Deputy of the chief of the Power Center "RN-Severnaya Neft" LLC |
| /IM01/ | V | <input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms | K. Myachin | Carbon projects manager CTF Consulting |

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 <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 • Stand-by duty is | <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 • Insufficient accuracy | <ul style="list-style-type: none"> • 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 | <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>) |
|---|---|--|---|---|
| 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 <i>Forward Action Requests</i>) |
|---|---|--|---|---|
| programming <ul style="list-style-type: none"> Manual data transmission Data protection Responsibilities | <ul style="list-style-type: none"> Application of JI Management system procedures Usage of standard software solutions (Spreadsheets) Limited access to IT systems Data protection procedures | <ul style="list-style-type: none"> 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 <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 | <ul style="list-style-type: none"> Update-check of regulatory framework Countercheck of the applied MP in the MR against the methodology and the PDD. | <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>) |
|---|--|---|--|---|
| | | values). | | |
| Calculation Methods | | | | |
| <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 | <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 |

| 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>) |
|--|---|-------------------------|---------------------------------|---|
| outdated versions | | | | |

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

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|------------------------|--|-----------------|-----------------|
| 1. Project history | | | | |
| Open issues from determination PDD <i>Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?</i> | /PDD/ /FDR/ | This is the second 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 <i>Check in case of further periodic verifications whether there are any open issues indicated in previous verification (FAR)?</i> | | No open FARs from the previous verification. | OK | OK |
| Requests for Deviations / Revisions of MP <i>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?</i> | /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 <i>In case an initial verification has been carried out, check if all FARs, recommendations etc. have been addressed appropriately.</i> | | N/A | OK | OK |
| Initial project implementation <i>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</i> | /PDD/ /FDR/ /TS/ | The project has been implemented and operated as per the PDD. This was verified by onsite observation and crosschecked with the Project Engineering Monitoring Report and technical specification of the equipment ^{/TS/} . | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|---------------------------------|---|-----------------|-----------------|
| <p><i>of the project in place?</i></p> <p><i>In case of further periodic verifications: Go to next chapter.</i></p> | | | | |
| 2. Update on Changes and Incidents (during the Monitoring Period) | | | | |
| <p>Technical equipment</p> <p><i>Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period.</i></p> <p><i>Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.</i></p> <p><i>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.</i></p> | <p>/PDD/ /FDR/ /TS/</p> | <p>In the course of this verification the verification team has inspected the project sites, interviewed the operational personnel and reviewed instrument specifications. Based on this it was evidenced, that no relevant equipment was exchanged within the monitoring period.</p> <p>In July 2009 the 5th Gas turbine has been put into operation.</p> | OK | OK |
| <p>Operation modes</p> <p><i>Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.</i></p> <p><i>Consider e.g. interviews with operational personnel, operation log sheets, data management system records.</i></p> <p><i>In case of changes, check whether the project is still in line with the registered PDD and assure that these</i></p> | <p>/PDD/ /FDR/</p> | <p>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. has been identified.</p> | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|------------------------|---|-----------------|-----------------|
| <i>changes have been considered in the monitoring report and the emission reduction calculation.</i> | | | | |
| Incidents <i>Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?</i> <i>Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.</i> | /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 5 th turbine. | OK | OK |
| Personnel <i>Find out, if relevant personnel w.r.t. monitoring has been exchanged?</i> <i>In case of changes, assure that the implemented monitoring procedures have not been affected.</i> | /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 people and departments performing the monitoring of the project as indicated in the monitoring report reflect the actual situation. | OK | OK |
| Legislation <i>Find out whether relevant legislation with effect on the project activity in the host country has been changed.</i> | /PDD/ /FDR/ /MR/ | Relevant legislation was considered. No relevant changes since the validation were identified. | OK | OK |
| 3. Monitoring Report – General | | | | |
| Monitoring period <i>Check if the monitoring period is in line with a) the crediting period and/or b) previous monitoring periods?</i> | /PDD/ /FDR/ /MR/ | The 2 nd monitoring period lasts from 2009-01-01 to 2009-12-31. Both days are included. This is in line with JI Guidelines. | OK | OK |
| References <i>Check if the monitoring report provides the correct</i> | /PDD/ | The monitoring report has been checked and it could be verified that it provides the correct references like project title, applied | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|--|---------------------------------|--|-----------------|-----------------|
| <i>references, in detail: project title, applied methodology/ies, meth tools.</i> | /FDR/ /MR/ | methodology. | | |
| Completeness <i>Assess if the monitoring report is complete, i.e. have all relevant issues been addressed?</i> | /PDD/ /FDR/ /MR/ | The covered issues in detail are as follows: <input checked="" type="checkbox"/> (i) Implementation status <input checked="" type="checkbox"/> (ii) Monitoring systems and procedures (esp. QA/QC) <input checked="" type="checkbox"/> (iii) All parameters and corresponding intervals <input checked="" type="checkbox"/> (iv) Information on calibration of monitoring instruments <input checked="" type="checkbox"/> (v) Emission factors, IPCC default values, etc. <input checked="" type="checkbox"/> (vi) Reference to deviations, if applicable <input checked="" type="checkbox"/> (vii) Calculation of emission reductions <input checked="" type="checkbox"/> (viii) Comparison of ER with PDD estimation | OK | OK |
| Transparency <i>Assess if the monitoring report is transparent, i.e. clear and unequivocal in all respect?</i> | /PDD/ /FDR/ /MR/ /XLS/ | 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. | OK | OK |
| Misstatements on general issues <i>Assess whether the monitoring report is free of material misstatements regarding issues other than the monitoring parameters.</i> <i>Discuss the monitoring parameters in detail in chapter "Monitoring Parameters".</i> | /MR/ | Monitoring report is free of material misstatements. CAR R1 has been raised in this context and successfully closed. | CAR R1 | OK |
| | | | | |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|--|----------------------------------|---|------------------------|-----------------|
| Deviations from the validated monitoring plan <i>Assess whether the MR in line with the validated monitoring plan?</i> | /PDD/ /FDR/ /MR/ /Chro/ | <p>There are some deviations to the provisions as per the PDD. These deviations have been transparently listed in the monitoring report and appropriateness of the monitoring justified. 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>1. Measurements of the volumetric fraction of component carried out by independent labour have been not carried out in the 4th quarter 2009. The deviations do not have an impact on the accuracy of the generated emission reductions. This is because the volumetric fraction of the components is stable. This could be verified based on the provided component analysis for the years 2008, 2009, and 1st quarter 2010.</p> <p>2. Following parameters have been excluded from the monitoring of the volumetric fraction of component of APG : yC7H16 – volume fraction of C7H16; yC8H18 – volume fraction of C8H18.</p> <p>This has been done because heptane and octane in standard sampling of APG composition of Laboratory "Nauka II" systematically are not found out. The same has been verified based on the provided analysis of components in the previous years^{/Chro/}.</p> <p>3. The monitoring of APG slightly deviates from the procedures as indicated in the PDD. However this has no impact on the accuracy of the emission reduction calculation. For details please refer to the CAR P1.</p> | CAR P1 CR R2 | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|--|--|---|-----------------|-----------------|
| Deviations from the approved methodology <i>Assess whether the MR in line with the applied monitoring methodology?</i> | /MR/ | <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. For further details please refer to the comment above.</p> <p>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.</p> | OK | OK |
| 4. Monitoring Parameters <i>(List all parameters of the PDD chapter B.7.1; pl. copy the 6 lines below for each parameter)</i> | | | | |
| 4.1. Electricity generation / output | | | | |
| Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i> | /MP/ /XLS/ /Mt-E/ /Elec/ /PDD/ | <p>The monitoring of the electricity generation and output 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 as per the 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>All relevant data are recorded appropriately and in accordance</p> | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|-----------------------------------|--|-----------------|-----------------|
| | | with the monitoring plan. Hence it could be concluded that monitoring system provides for a clear and accurate monitoring. | | |
| Correctness <i>Determine whether the value given in the monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i> | /MR/ /XLS/ /Elec/ | <input checked="" type="checkbox"/> Correct <input type="checkbox"/> 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/} . CAR C1 has been raised in this context. | CAR C1 | OK |
| QA/QC Procedure <i>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.</i> | /MR/ /XLS/ /Elec/ /Mt-E/ | 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 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. All applied electricity meters have been verified (calibrated) before installation. Dates of the verification (calibration) and verification interval as indicated in the monitoring plan could be verified based on the provided technical specifications ^{/Mt-E/} of the installed electricity meters. | GR-P3 | OK |
| Accuracy <i>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.</i> | /MR/ /XLS/ /Elec/ /Mt-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/} . The accuracy class of the installed equipment is in line with information provided in the monitoring report. | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|--|--|---|-----------------|-----------------|
| Verification <i>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.</i> | /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 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. | OK | OK |
| 4.2. Chemical composition of APG | | | | |
| Measurement / Determination method <i>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.</i> | /MR/ /XLS/ /Chro/ /PDD/ /Lab-1/ /Lab-2/ | 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. 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/} . The measurements in 2009 have been provided and it could be verified that they are carried out in accordance official standards ^{/Chro/} . Assessment of the deviations to the monitoring plan is included in section 3 (Deviation from the validated monitoring plan). The | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|----------------------------------|--|-----------------|-----------------|
| | | deviation and the reasons have been transparently explained in the monitoring report and have been accepted by the verification team. | | |
| Correctness <i>Determine whether the value given in the monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i> | /MR/ /XLS/ /Chro/ /PDD/ | <input checked="" type="checkbox"/> Correct <input type="checkbox"/> 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 <i>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.</i> | /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 that the monitoring plan for this parameter specifies procedures for quality control and thus will provide a sufficient level quality assurance. | OK | OK |
| Accuracy <i>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.</i> | /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 the monitoring equipment is duly calibrated and maintained. | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|--|----------------------------------|--|-----------------|-----------------|
| Verification <i>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.</i> | /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/} . | OK | OK |
| 4.3. Total APG consumption in GTUs | | | | |
| Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i> | MR/ /XLS/ /Chro/ /PDD/ | <p>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.</p> <p>Verification team is of the opinion that APG consumption has been monitored in accordance with provisions of the monitoring plan and in a appropriate manner.</p> <p>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 the total daily APG consumption of GTUs. CAR P1 has been raised in this context.</p> <p>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 accuracy of the monitored amount of APG consumption by GTUs. The deviation and the reasons have been transparently</p> | CAR P1 | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|--------------------------------|---|-----------------|-----------------|
| | | 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 <i>Determine whether the value given in the monitoring report is correct.</i> <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i> | /MR/ /XLS/ /APG/ | <input checked="" type="checkbox"/> Correct <input type="checkbox"/> 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 <i>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.</i> | /MR/ /XLS/ /TS/ | As per the technical specification of the GTUs 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 is appropriate and has been carried out by competent personnel. | OK | OK |
| Accuracy <i>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.</i> | /MR/ /XLS/ /APG/ /TS/ | 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 |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|--|---|---|------------------------|-----------------|
| Verification <i>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.</i> | /MR/ /XLS/ /APG/ /TS/ | <p>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 recorded figures could be verified.</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 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.</p> | OK | OK |
| 4.4. Diesel consumption in GTUs | | | | |
| Measurement / Determination method <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i> | /MR/ /XLS/ /PDD/ /GTU-D/ /Inv-b/ /GrTab/ | <p>Recordings of reservoir level and diesel amount in the special inventory book are carried 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/}.</p> <p>CAR P2 and CR P4 have been raised in this context.</p> | CAR P2 CR P4 | OK |
| Correctness <i>Determine whether the value given in the monitoring report is correct.</i> | /MR/ /XLS/ /PDD/ | <p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p>Comment: The diesel consumption in GTUs has been provided^{/GTU-D/Inv-}</p> | CR P4 | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|--|---|-----------------|-----------------|
| <i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i> | /GTU-D/ /Inv-b/ /GrTab/ | 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/} . CR P4 has been raised in this context and successfully closed. | | |
| QA/QC Procedure <i>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.</i> | /MR/ /XLS/ /PDD/ /GTU-D/ | The calibration and control of the metering equipment has been carried out. | OK | OK |
| Accuracy <i>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.</i> | /MR/ /XLS/ /PDD/ /GTU-D/ /GrTab/ | The applied measurement procedures are in line with that provided in the PDD. | OK | OK |
| Verification <i>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.</i> | /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 handling are appropriate and in line with the monitoring plan. | OK | OK |
| 4.5. Diesel consumption in DPP | | | | |
| Measurement / Determination method <i>Describe how the monitoring parameter was</i> | /MR/ /XLS/ | Diesel Fuel consumption in Diesel units in emergency cases. This parameter is monitored by flow meters and is recorded in | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|--|---|---|-----------------|-----------------|
| <p><i>measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p> | <p>/PDD/ /DPP-C/ /DPP-K/ /DPP-N/</p> | <p>the inventory book on daily basis. Flow meter data is registered with invoice at the end of each month. Measurement equipment and procedure and the monitoring frequency deemed to be appropriate.</p> <p>Considering this it was concluded that the QA/QC procedures have been appropriately elaborated and followed by the project participant.</p> | | |
| <p>Correctness</p> <p><i>Determine whether the value given in the monitoring report is correct.</i></p> <p><i>In case of mistakes pl. provide details and descriptions of the CARs raised.</i></p> | <p>/MR/ /XLS/ /PDD/ /DPP-C/ /DPP-K/ /DPP-N/</p> | <p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p>Comment:</p> <p>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/} ..</p> | OK | OK |
| <p>QA/QC Procedure</p> <p><i>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.</i></p> | <p>/MR/ /XLS/ /PDD/ /DPP-C/ /DPP-K/ /DPP-N/</p> | <p>Please refer to the comments above.</p> | OK | OK |
| <p>Accuracy</p> <p><i>In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been</i></p> | <p>/MR/ /XLS/ /PDD/</p> | <p>The applied measurement procedures are in line with that provided in the PDD.</p> | OK | OK |

| Checklist Item (incl. guidance for the verification team) | Reference | Verifiers Comments (Means and results of assessment) | Draft Concl. | Final Concl. |
|---|---|--|-----------------|-----------------|
| <i>considered for ER calculation.</i> | /DPP-C/ /DPP-K/ /DPP-N/ | | | |
| Verification <i>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.</i> | /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 <i>Assess if the calculation is fully traceable. In case of complex calculations an Excel calculation spreadsheet shall be used. All applied formulae must be visible.</i> | /MR/ /XLS/ | The calculation is completely traceable. All applied formulae are visible. No information gaps have been identified. | OK | OK |
| Parameter consistency <i>Assess whether all internal and external parameters and data used for calculation are applied consistently in the monitoring report and the calculation spreadsheet?</i> <i>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</i> | /MR/ /XLS/ | The Excel calculation sheet is completely in line with the MR. Density of CO2 (fixed parameter) has been slightly changed (from 1,831 to 1,839). The applied density of 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. | OK | OK |

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| <i>chapter "Monitoring Parameters".</i> | | | | |
| Applied formulae <i>Check if the applied formulae are in accordance with the monitoring plan and / or the approved methodology.</i> | /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 <i>Assess whether the provided calculations are complete and reflect all requirements of the monitoring plan.</i> <i>Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.</i> | /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 <i>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</i> | /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. | OK | OK |

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| <i>participant's quality management system. If not how the GHG management system has been implemented.</i> | | A sufficient confidence has been gained that these procedures ensure high quality project management of all sub-projects. | | |
| Roles and Positions <i>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.</i> <i>Check further if only duly qualified personnel is involved in the monitoring procedures.</i> | /MP/ /PDD/ | <p>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.</p> <p>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.</p> | OK | OK |
| Trainings <i>Check if initial trainings have been carried out, in case deemed necessary.</i> | /MP/ /PDD/ /Tr/ | <p>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.</p> <p>Project participant has introduced monitoring procedures for the abovementioned project. All responsible personnel has been involved in the development and implementation of the monitoring procedures^{/Tr/}.</p> | OK | OK |
| Troubleshooting procedures <i>Assess whether troubleshooting procedures have been implemented.</i> | /MP/ /PDD/ | Please refer to the comment under QA/QC Procedures | OK | OK |

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|--|-----------------------|--|-----------------|-----------------|
| Maintenance procedures Are appropriate maintenance procedures in place? | /MP/ /PDD/ /TS/ | Gas Turbine Units have been appropriately maintained ^{TS/} . | OK | OK |
| Internal QA/QC <i>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.)</i> | /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 taken 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 |