



# VERIFICATION REPORT

## TÜV Rheinland Energy GmbH, Germany

Certificate number of accreditation: D-VS-11120-01-00

<b>Project Title</b>	Orenburg Oilfield Associated Gas Recovery and Utilization Project
<b>Project developer</b>	Gazprom Neft Trading GmbH Schwarzenbergplatz 5, 5 <sup>th</sup> Floor, 1030 Vienna, Austria
<b>Project proponent</b>	Gazpromneft – Orenburg LLC 460004, Orenburg, st. Krasnoznamennaya, 56/1.
<b>Report Title</b>	Verification of Upstream Emission Reduction for Orenburg Oilfield Associated Gas Recovery and Utilization Project for the period 01.11.2020 – 31.12.2020
<b>Report ID</b>	21252125
<b>Version</b>	1.1.2
<b>Date of Issue</b>	24 September 2021
<b>Pages</b>	31
<b>Prepared By</b>	TÜV Rheinland Energy GmbH Am Grauen Stein 51103 Cologne, Germany
<b>Verification Team</b>	<b>TÜV Rheinland Energy GmbH Germany</b> <u>Project Leader and Auditor:</u> Norbert Heidelmann (norbert.heidelmann@de.tuv.com)) <u>2<sup>nd</sup> Auditor (under witness) and Technical Expert:</u> Florencia Tamanini (florencia.tamanini@de.tuv.com) <u>Technical Reviewer:</u> Denitsa Gaydarova-Itrib (denitsa.gaydarova-trib@de.tuv.com)
<b>Verification Standards</b>	<b>ISO 14064 – Part 2 for intended usage under EU Fuel Quality Directive</b>



<b>Amount of UERs</b>	<b>162,167 t CO<sub>2e</sub></b> <b>162,166,935 kg CO<sub>2e</sub></b> <b>162,166,935,463 g CO<sub>2e</sub></b>
<b>UER Batch 1<sup>st</sup> Verification (VVB: Verico)</b>	<b>0044_VERI_20180427_2020_051.5945N,055.413E_0000000.1096998</b>
<b>UER Batch 2<sup>nd</sup> Verification (VVB: TÜV Rheinland)</b>	<b>0044_TUEV_20180427_2020_051.5945N,055.413E_1096998.1259165</b> <b>(monitoring period 01.11.2020 – 31.12.2020)</b>
<b>Certified UERs corresponding to this report</b>	<b>13,000 t CO<sub>2e</sub> identified with the UER Batch:</b> <b>0044_TUEV_20180427_2020_051.5945N,055.413E_1139998.1152998<sup>1</sup></b>
<b>Owner of UERs certified in this report (13,000 t CO<sub>2e</sub>)</b>	<b>Kreuzmayr GmbH</b> <b>Rudolf Diesel Straße 1, 4070 Eferding, Austria</b> <b>Registration number: FN 96998w</b>

<sup>1</sup> This report is issued to confirm certification of this batch number, each batch receives an own dedicated verification report



### Summary:

TÜV Rheinland Energy GmbH was assigned to perform verification of the monitoring period 01/11/2020 – 31/12/2020 for the upstream emission reduction project “Orenburg Oilfield Associated Gas Recovery and Utilization Project” in accordance with the ISO 14064-3 and the Council Directive (EU) 2015/652 of 20 April 2015 laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC of the European Parliament and of the Council relating to the quality of petrol and diesel fuels.

The upstream emission reduction (UER) project activity was implemented in order to reduce GHG emissions related to flaring of associated petroleum gas in the eastern section of the Orenburg oil and gas condensate field in Russian Federation. The project activity is the construction of a new compressor unit and gas pipeline to recover and utilize the associated petroleum gas from the oil wells of the Orenburg oilfield. In the absence of the project activity, the associated petroleum gas was flared; instead now it is transferred to a gas processing plant for further upgrading and conversion to sellable natural gas products.

The verification was performed in 3 main steps, namely:

- Desk review – covering all provided documents, i.e. initial monitoring report, PDD, UER calculations, records on gas volumes, records on electricity consumptions, manuals, etc. (listed in section 2.2);
- Verification audit (described in section 2.4) – assessing the correctness of the documents, conducting interviews with the lead partner, stakeholders and the carbon consultant (see Section 2.3), observation of data processing and storage, confirmation of metering devices, plausibility checks;
- Issuance of verification protocol (see APPENDIX I), a list of corrective action requests, clarification requests and forward action requests (see APPENDIX II), and the “Verification Report of the UER Project Orenburg Oilfield Associated Gas Recovery and Utilization” for the verification period from 01/11/2020 until 31/12/2020.

The Verification Body identified one corrective action request (CAR), four clarification requests (CLs) and one forward action request (FAR) from the previous verification, which were all accordingly closed before the issuance of this final Verification Report.

Finally, based on the provided documentation and site inspection, TÜV Rheinland Energy GmbH issues a positive verification opinion on the UER project activity “Orenburg Oilfield Associated Gas Recovery and Utilization Project”, confirming that for the monitoring period 01/11/2020 – 31/12/2020 upstream emission reductions of **162,166,935,463 gCO<sub>2e</sub>** are realised from the aforementioned project activity.

**Table of Contents**

<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1.	Objective	5
1.2.	Scope and Criteria	5
1.3.	Level of Assurance	6
1.4.	Methodology	6
1.5.	Summary Description of the Project	6
1.6.	GHG intensity	7
1.7.	Verification period	8
1.8.	Summary Result of the Verification process	8
<b>2</b>	<b>Verification Process</b>	<b>8</b>
2.1.	Method and Criteria	9
2.2.	Document Review	9
2.3.	Interviews	12
2.4.	On-Site Audit	12
2.4.1	Assessment with respect to level of completeness, accuracy, conservativeness and transparency of verification.	13
2.4.2	Summary of Assessment	16
2.5.	Resolution of Findings	16
2.6.	Forward Action Requests	17
<b>3</b>	<b>Verification Findings</b>	<b>17</b>
3.1.	General information	17
3.2.	Accuracy and completeness	17
3.3.	Quality of evidence / Quality and risk management	17
3.4.	Data gaps, corrections and uncertainties	18
3.5.	Findings and non-conformities	18
<b>4</b>	<b>Verification conclusion</b>	<b>19</b>
<b>5</b>	<b>VERIFICATION STATEMENT</b>	<b>20</b>
	<b>APPENDIX I</b>	<b>21</b>
	<b>APPENDIX II</b>	<b>29</b>
	<b>APPENDIX III</b>	<b>31</b>

## 1 Introduction

### 1.1. Objective

The purpose of verification is to review the monitoring results and to verify that monitoring methodology was implemented according to monitoring plan and monitoring data, and to confirm that the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner.

The objective of this verification was to provide qualitative and quantitative evaluation of the upstream emission reductions (UERs), reported for the “Orenburg Oilfield Associated Gas Recovery and Utilization Project” for the verification period from 01/11/2020 to 31/12/2020. In particular, monitoring plan, monitoring report and the project’s compliance with the UERs quantification methodology are verified in order to confirm that the project has been implemented in accordance with the approved PDD and conservative assumptions, as documented.

### 1.2. Scope and Criteria

TÜV Rheinland Energy GmbH (in the following referred as TÜV Rheinland), an accredited verification body according to DIN EN ISO 14065 and also registered as validation and verification body under the German Emission Authority (DEHSt), performed a verification of the monitoring report for the project: Orenburg Oilfield Associated Gas Recovery and Utilization Project in order to confirm compliance of the monitoring report with requirements of ISO 14064 part 2 and the COUNCIL DIRECTIVE (EU) 2015/652 of 20 April 2015 laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC of the European Parliament and of the Council relating to the quality of petrol and diesel fuels.

The verification comprises a review of the Monitoring Report over the monitoring period from 01/11/2020 to 31/12/2020 in accordance with the ISO 14064-3. The verification is also based on the validated and approved Project Design Document (PDD) v03 dated 30.12.2020; in particular considering the sections related to baseline and project emission reductions calculations, parameters to be monitored, monitoring plan and monitoring methodology. In addition, the project participants provided relevant documents and supplementary information to assist the verification process.

The main objective is the use of the verification report by the client for the issuance of UERs. However, all consecutive steps undertaken with this report after verification are not part of the responsibility of TÜV Rheinland.

The main steps in the verification process are:

- **Verification team:** TÜV Rheinland nominated a verification team fulfilling the internal qualification criteria based on ISO 14064 part 3, ISO 14065 and ISO 14066.
- **Desk review:** The appointed auditors cover the evaluation of all provided documents, i.e. Monitoring Report, validated and approved PDD version 3.0 dated 30/12/2020, UER calculation sheets, calibration reports, records, etc.
- **On-site assessment:** This step confirms that the project has been implemented as described in the PDD and that all data and information provided in the monitoring report are correct. Due to the current travel restrictions (COVID-19 pandemic) the on-site assessment for the verification period could not be performed. Therefore, an alternative remote verification audit, based on video conferences, telephone interviews, online real time screen sharing, images, etc., has been carried out.



- Issuance of verification protocol and list of CARs, CLs & FARs.
- Issuance of final verification report for the monitoring period in question: gives a conclusion whether the reported data are accurate, complete, consistent, and transparent, with a high level of assurance and free of material error or misstatement.

The verification process also considers the correct application of the approved CDM methodology AM0009/version 7.0 “Recovery and utilization of gas from oil fields that would otherwise be flared or vented”, the referred methodological tools and guidelines, and the criteria given to provide for consistency in project operations, monitoring and reporting.

The verification considers both quantitative and qualitative information on emission reductions. The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or forward actions may provide input for improvement of the monitoring activities.

### **1.3. Level of Assurance**

TÜV Rheinland has focused on providing a reasonable level of assurance that the emission reduction calculation methodology is appropriate and correctly applied, as well as that Upstream Emission Reductions have been accurately monitored. Therefore, the verification statement provides a reasonable level of assurance.

### **1.4. Methodology**

The quantification of the achieved emission reductions by the implementation of the proposed project activity is performed based on approved CDM methodology, namely the large-scale methodology AM0009 “Recovery and utilization of gas from oil fields that would otherwise be flared or vented” v07 including the monitoring methodology AM0009 “Monitoring methodology for recovery and utilization of gas from oil fields that would otherwise be flared or vented”.

### **1.5. Summary Description of the Project**

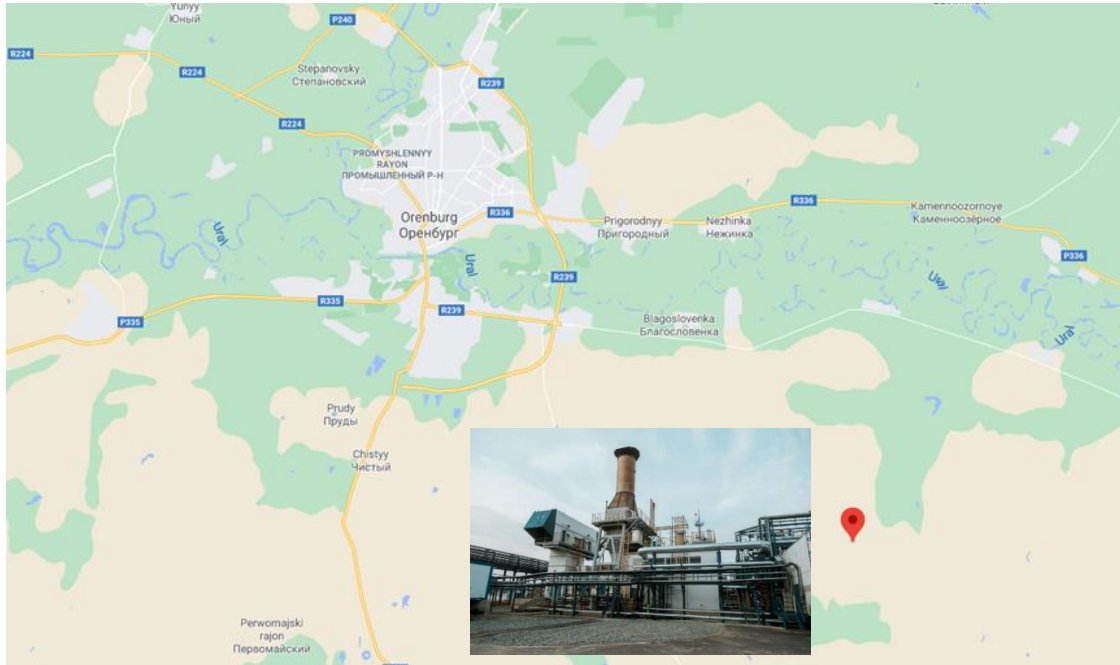
The project activity involves the construction of a compressor unit and gas pipeline to recover and utilize the associated petroleum gas (APG) from the oil wells of the Orenburg oilfield. The recovered APG is supplied to an oil and gas treatment unit where it undergoes primary treatment, then it is compressed by a compressor unit and subsequently transported via a 51 km DN700 gas pipeline and sold to the Orenburg gas processing plant for further processing. This plant does not belong to the project proponent.

In the absence of the project activity, the existing pipeline faced limited transport capacity and therefore any excess APG was flared. Hence, the project activity causes a reduction of emissions by avoiding the flaring of APG, which are claimed as UERs.

The project is located in the Russian Federation at the region of Orenburg and the geographical coordinate set of the project location is:

Latitude: 51.594507 North

Longitude: 55.471315 East



**Figure A: Project location**

The purpose of the project is to significantly reduce the amount of APG that is flared at the Orenburg oilfield.

The project consists on building a new compressor unit and a new gas pipeline that will increase the technical capacity of the amount of APG that can be recovered and utilized.

The project boundary of the project activity “Orenburg Oilfield Associated Gas Recovery and Utilization Project” was defined in the validated, verified and approved project documentation (PDD), in accordance with the applied CDM Methodology AM0009 and ISO 14064-2.

The greenhouse gases included in the project boundary are CO<sub>2</sub> emission sources from combustion of fossil fuels at end-users sites, which are produced from non-associated gas or other fossil sources. The project emission sources are the energy use for the recovery, pre-treatment, transportation, and compression of the recovered gas up to the point where it is supplied to the gas pipeline to be transported to the gas processing plant.

## 1.6. GHG intensity

The GHG intensity has been calculated in a provided file (reference 71 in section 2.2.), showing the following results:

- Prior to project implementation: 18.531 gCO<sub>2e</sub>/MJ
- After project implementation: 3.534 gCO<sub>2e</sub>/MJ

The underlying period for the determination of these GHG intensities is the entire year 2020.

The calculation could be proven as being correct.





### 1.7. Verification period

The verification period is 01/11/2020 – 31/12/2020.

### 1.8. Summary Result of the Verification process

TÜV Rheinland came to the conclusion that based on the provided documentation and the verification audit, GHG assertion was made in accordance with the requirements of ISO 14064-2 and was material correct and fairly represented the GHG emissions data and information without material discrepancies.

Therefore, TÜV Rheinland issues a positive verification opinion on the project “Orenburg Oilfield Associated Gas Recovery and Utilization Project”, confirming that for the monitoring period 01/11/2020 – 31/12/2020, GHG upstream emission reduction of **162,166,935,463 gCO<sub>2e</sub>** are realised from the aforementioned project activity.

## 2 Verification Process

As stipulated in Council Directive (EU) 2015/652 Annex I part 1 (3) d ii “the UERs and baseline emissions are to be monitored, reported and verified in accordance with ISO 14064 and providing results of equivalent confidence of Commission Regulation (EU) No 600/2012 (6) and Commission Regulation (EU) No 601/2012 (7). The verification of methods for estimating UERs must be done in accordance with ISO 14064-3 and the organisation verifying this must be accredited in accordance with ISO 14065”

The above mentioned general principles and key requirements of verifiers and the verification process, as indicated in Commission Regulation (EU) No 600/2012, are:

- The process of verifying emission reports shall be an effective and reliable tool in support of quality assurance and quality control procedures. (Article 6);
- The verifier must carry out verification in the public interest and with an attitude of professional scepticism of the claims being verified (Article 7);
- The verifier shall conduct substantive testing using analytical procedures, including verifying data and checking the monitoring methodology, and shall conduct site visits (Article 14-21);
- All verification reports shall be independently reviewed (Article 25);
- All verification personnel (Article 35) and independent reviewers (Article 38) shall be competent;
- Verifiers shall be impartial and independent from an operator (Article 42);
- All verifiers shall be accredited for the scope of activities being verified (Article 43-44).

The verification body confirms that the verification process of the project “Orenburg Oilfield Associated Gas Recovery and Utilization Project” for the monitoring period 01/11/2020 – 31/12/2020 is accomplished in compliance with the above listed principles and key requirements.





## 2.1. Method and Criteria

The verification of the UER project “Orenburg Oilfield Associated Gas Recovery and Utilization Project” has been performed in accordance to the internal procedures of TÜV Rheinland for the verification of UER projects, which strictly follow ISO 14046-3.

The criteria of data/information management of the GHG project has been referred to standard ISO 14064-2: 2009. The criteria of applied project for quantifying GHG emission reduction has been referred to CDM-AM 0009 Methodology including related tool methodology as mentioned on section 1.2.

## 2.2. Document Review

The desk review phase is characterised by the assessment of the monitoring report and emission reduction workbooks substantiated by additional supportive documents, all of which have been provided to the verification body in a digital form. The following table outlines the documents reviewed as part of the verification process:

Nr	Title	Date of submission
1	PDD_Orenburg_FlareRecovery_version3.0_20201230_clean_final	27.01.2021
2	Monitoring_Report_MR1_Jan_Oct_2020_Orenburg_FlareRecovery_version2.0_20201231_clean	27.01.2021
3	2021-01-15 UER044_Gazprom_Orenburg_VerR V01	27.01.2021
4	Annex_1_UER_Calculation_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0_DRAFT_20210128	29.01.2021
5	Annex_2_Electricity_Meters_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0_DRAFT_20210128	29.01.2021
6	Monitoring_Report_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0_DRAFT_20210128	29.01.2021
7	E1_APG Gas Analysis_Протокол газ СИКГ-3 25.10.2020	29.01.2021
8	E2_APG Gas Analysis_Протокол СИКГ-3 от 01/11/2020	29.01.2021
9	E3_APG Gas Analysis_Протокол СИКГ-3 (теплота сгорания) 08.11.2020	29.01.2021
10	E4_APG Gas Analysis_СИКГ-3(15.11.20.)Тепл.сгорания	29.01.2021
11	E5_APG Gas Analysis_СИКГ-3(тепл.сгорания) 22.11.2020	29.01.2021
12	E6_APG Gas Analysis_Протокол газ СИКГ-3 29.11.2020	29.01.2021
13	E7_APG Gas Analysis_Протокол газ СИКГ-3 06.12.2020	29.01.2021
14	E8_APG Gas Analysis_СИКГ-3(тепл.сгорания) 13.12.2020	29.01.2021
15	E9_APG Gas Analysis_СИКГ-3,тепл.сгор.(20.12.20)	29.01.2021



16	E10_APG Gas Analysis_Протокол газ СИКГ-3 28.12.2020	29.01.2021
17	E11_Fuel Gas Analysis_November 2020_Паспорт ноябрь 2020	29.01.2021
18	E12_Fuel Gas Analysis_December 2020_Паспорт декабрь 2020	29.01.2021
19	E13_Calibration Certificates since last verification_Свидетельства на АБАК+	29.01.2021
20	E14_Scada_Printout_M1_Nov_Dec_2020	29.01.2021
21	E15_Scada_Printout_M2_Nov_Dec_2020	29.01.2021
22	E16_Scada_Printout_M3_Nov_Dec_2020	29.01.2021
23	E17_Scada_Printout_M4_Nov_Dec_2020	29.01.2021
24	E18_Bilateral Act confirming APG Delivery Volumes November 2020_M1_M2_M3_Акт поставка за ноябрь 2020 ВУ	29.01.2021
25	E19_Bilateral Act confirming APG Delivery Volumes December 2020_M1_M2_M3_Акт поставка за декабрь 2020 ВУ	29.01.2021
26	E20_Fuel gas consumption by Compressor TL4_M5_November2020 ТЛ-4	29.01.2021
27	E21_Fuel gas consumption by Compressor TL4_M5_December2020 ТЛ-4	29.01.2021
28	E22_Electricity consumption by Compressor TL4_M6_Nov_Dec_2020_Потребление ЭЭ ГПА ТЛ-4	29.01.2021
29	E23_Gas Metering Instructions_Methodological Document_M-01.03.06-01_действующая	29.01.2021
30	E24_POCC RU.0001.21AY24 от 12.11.2020_перевод_Accreditation Certificate Laboratory	29.01.2021
31	E25_M1_Gas Meter Calibration Certificate_SIKG_3_Св-во о поверке	11.02.2021
32	E26_M2_Gas Meter Calibration Certificate_X-101_Диафрагма ДФС-10-150-Б завод № 345 паспорт	11.02.2021
33	E27_M3_Gas Meter Calibration Certificate_FLOWSIK 600 зав.№8338543_Meter1	11.02.2021
34	E28_M3_Gas Meter Calibration Certificate_Flowsick 600 зав.№18348499_Meter2	11.02.2021
35	E29_M4_Gas Meter Calibration Certificate_Prowirl O 200 зав.№LCOD1619000_Meter1	11.02.2021
36	E30_M4_Gas Meter Calibration Certificate_Prowirl O 200 зав.№LCOD1719000_Meter2	11.02.2021
37	E31_M5_Gas Meter Calibration Certificate_Prowirl F200_Паспорт FT4424	11.02.2021
38	E32_Design Document Extract_Capacity Old DN500 Pipeline_стр 0001	11.02.2021
39	E33_Total Gas Balance_2016_Баланс газа_ВУОНГКМ_декабрь	11.02.2021
40	E34_M4_OrderToInvestigateEmergencyShutdownOn17November2020	11.02.2021
41	E35_M3_Act to calculate amount of gas_Emergency Shutdown_14 December 2020_Акт	11.02.2021



42	E36_Calculation of data gap M3_14 December 2020_Расчет M3 14.12.2020	11.02.2021
43	E37_Information on DN700 pipeline shutdown_December2020	11.02.2021
44	E38_Calculation of data gap M1_DN700 Расчет заполнения 720 (18.12.2020)	11.02.2021
45	E39_Certificate_min calibration interval_Gas Meter_M1_KTM600 RUS	11.02.2021
46	E40_Metering Instructions_min calibration interval_Gas Meter_M1_KTM600 RUS	11.02.2021
47	E41_Technical specification_min calibration interval_Gas Meter_M5_Prowirl F 200_FT4424	11.02.2021
48	E42_Link to official government website_accreditation of on site laboratory	11.02.2021
49	E43_Link to official government website_accreditation of fuel supplier laboratory_dry stripped gas	11.02.2021
50	Set of Photos from new compressor unit, new pipeline, electric meters, flow meters and gas meters	11.02.2021
51	E44_Data Retrieval Process Flowchart_Gas Meters	15.02.2021
52	E45_Personnel Training Logbook_журнал инструктажей	15.02.2021
53	E46_Calculation of Data Gap M4_November 2020	15.02.2021
54	E47_Calculation of Data Gap M4_December 2020	15.02.2021
55	E48_Relevant Part of Methodological Document_Gas Metering Instructions_M-01.03.06-01_Meter Malfunction	15.02.2021
56	E49_Photos_Diagram_SCADA display_BackUpLine_ExampleM3	15.02.2021
57	E50_Procedure for checking gas sampling	15.02.2021
58	E51_Daily Gas Sampling Reports_Отчет ХАЛ ОМ от 22.11.2020	15.02.2021
59	E52_Daily Gas Sampling Reports_Отчет ХАЛ ОМ от 21.12.2020	15.02.2021
60	E53_Daily Gas Sampling Reports_Отчет ХАЛ ОМ от 02.01.2021	15.02.2021
61	E54_Interacion regulations	15.02.2021
62	E55_Schemes	15.02.2021
63	Annex_1_UER_Calculation_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0_2021 0128	19.02.2021
64	Annex_2_Electricity_Meters_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0_2021 0128	19.02.2021
65	Monitoring_Report_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version2.0_20210219_clean	19.02.2021
66	AM0009/version 7.0 and Tool 05/version 01	
67	E54_Revised calculation of surrogate data_monitoring point_M3_14_Dec_2020	24.02.2021



68	E55_Scada_Printout_2_hourly_flowrates_M3_Dec_2020	24.02.2021
69	Monitoring_Report_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version3.0_20210224	24.02.2021
70	Annex_1_UER_Calculation_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version2.0_20210224	24.02.2021
71	"GHG_Intensity_Orenburg_FlareRecovery_20210304.xlsx" Calculation tool for GHG intensity	04.03.2021

### 2.3. Interviews

The interview process was conducted during the audit with responsible staff of Gazpromneft-Orenburg, Gazprom Neft Trading GmbH and Energy Changes GmbH. Relevancy of methodology and requirement of standard had been discussed during validation process. Therefore the discussion was focused on monitoring plan and procedures in order to obtain GHG data and information for the baseline scenario and for the project emissions which is complete, verifiable, without misstatements and misapplications of calculation.

The remote audit by live video took place on 15th of February 2021 and was conducted from TÜV Rheinland's headquarter in Cologne, guided by Mr Norbert Heidelmann and Ms. Florencia Tamanini.

The following additional persons participated to the interviews:

Name	Function	Organisation
Ayse Frey	Carbon Consultant	Energy Changes
Sakharov Dmitry	Senior Business Development Manager	Gazprom Neft Trading GmbH
Nelina Oxana	Senior Business Development Manager	Gazprom Neft Trading GmbH
Yakovlev Vitaly Olegovich	Head of Joint Ventures	Gazprom Neft PJSC
Kurushkin Vitaly Viktorovich	Chief Specialist, Expertise and functional development unit	Gazprom Neft STC LLC
Yashpaev Valery Gennadievich	Head of Production Department	Gazpromneft-Orenburg LLC
Sidelev Anton Pavlovich	Chief Specialist, Production Department	Gazpromneft-Orenburg LLC
Emelyanov Maxim Anatolievich	Chief Metrologist, Department of Metrology, Automation, Communication and Information Technology	Gazpromneft-Orenburg LLC
Usachev Yuri Petrovich	Chief Specialist, Power supply department	Gazpromneft-Orenburg LLC
Diana Rustamovna Nasretdinova	Translator, Department of documentation and information support	Gazpromneft-Orenburg LLC

### 2.4. On-Site Audit

The objective of the on-site audit is to acquire details on project management and operation, to prove validity and authenticity of delivered supporting documents, and to assess the situation on the ground against the description in the documents. The audit was carried out by means of interviews with the persons indicated in section 2.3, assessment of the presented supportive documentation and personal observations.

Due to the worldwide COVID-19 spread (Corona pandemic) and the severe travel restrictions enacted by Russian Federation and Germany, travelling to Orenburg for an on-site assessment in February 2021 was impossible. Therefore, TÜV Rheinland performed a remote verification audit for the monitoring period in question. A provided gap-analysis by TÜV Rheinland (in



conjunction with the audit plan) between the remote audit and an on-site assessment resulted in no risk of misinformation.

#### 2.4.1 Assessment with respect to level of completeness, accuracy, conservativeness and transparency of verification.

The persons listed in section 2.3 were interviewed and provided additional information on the following topics:

- *Description of the project activity and its operation:* the projects facilities have been explained and shown on-screen by sharing pictures of the old and new compressor units, the new pipeline, the oil and gas processing facilities, and the gas, flow and electric metering devices. It was confirmed that the new compressor unit is operated only by fuel gas, whereas grid electricity supports five secondary devices named K4360 from A to E (such as hydraulic devices and electrical valves). It was securely concluded that the project activity operates as described in the validated PDD and that no alteration of the project facility and of the operation took place during the monitoring period.
- *Milestones of the implementation during monitoring period:* focusing on how failures, malfunctions, maintenance, etc. were handled in addition to what is described in PDD and MR, the following items were explained and discussed:
  - On the 17<sup>th</sup> of November 2020 maintenance work at M4 took place. During the maintenance work, no natural gas was transferred to the pipeline and therefore the volume reported by SCADA during this time was corrected and set equal to zero, which is a conservative approach.
  - In case of failure in the transformer, a backup transformer is installed for electricity support; it was confirmed that during the crediting period 2020 there was no need to use this auxiliary transformer.
  - As a second and subordinated backup system a diesel generator is available at the site. It was confirmed that this diesel generator has never been used, except for test runs during installation period. Also, this generator cannot replace the required electricity demand as provided by the grid, instead it shall only provide sufficient voltage to protect the devices from destruction, this by putting the compressor unit in safe mode. Concerning this item the verification team concludes that the potential of CO<sub>2</sub> project emissions accruing from the consumption of diesel is very unlikely to occur. In addition, if materializing at all, the emissions would be below 2% of the total emission reductions and hence, this potential emission source can be neglected.
  - On the 14<sup>th</sup> of December there was a maintenance work at monitoring point M3 and the meter only recorded part of the gas that was transferred during the 2 hours time period. At the end of the month a corrected volume was agreed with the purchasing organization (in line with the agreed procedure) which was added to the volume reported by SCADA and documented in the monthly Acts which are signed by both parties. Upon this described procedure CL2 was issued by the verification team, plus FAR1 was linked to this item.
  - During December the new pipeline was shutdown due to repair work and during that time (from 15.12.2020 to 18.12.2020) the gas volume was re-directed to the old pipeline up to its maximum capacity, and the rest was flared. For this time no gas volume was recorded and hence no emission reductions were generated (conservative approach)
  - The flare system is still available and active, as it is an on-site security device in case of depressurization in an emergency and in case the Orenburg Gas



Processing Plant is not available to take any APG. The operation of the flare has no impact on the emission reductions.

- *Organisational management structure and responsibilities:* GPN responsible persons explained, showed and provided additional details of the monitoring procedure, the methodological gas metering instructions, the procedure for checking gas samples and all data related to personnel training.
- *Data processing and recording:* a special focus of this part was the data flow. It was explained that the data can be retrieved from the control and data acquisition system (SCADA) at a desired frequency. In addition, the data of these SCADA systems is transferred to a centralized control computer (by cable line) where it can be checked by the UER manager and technical staff. Also every month a technical audit is performed for the metering devices in point M1, M2 and M3. Gas samples are taken daily by trained field personnel and once a month a gas analysis is made by the client.
- *Measuring devices:* Every single monitoring device has been explained based on batches of photos. Monitoring devices from point M1 to M6 are interfacing with SCADA systems, which can be controlled directly at the individual measurement devices. The measuring points M1, M3, and M4 consist of 2 separated metering lines where one line is the main operating line and the other line is only auxiliary. It is not possible that the 2 lines measure the parameters at the same time, because they are set in parallel. It was also confirmed that all devices function accordingly and are subject to regular maintenance and calibration.
- *Gas Analysis:* it was confirmed that the sampling and gas analysis follow the procedure as written in MR, and that the samples are taking to accredited laboratories (one for APG gas samples and another one for dry stripped gas samples)
- *UER calculations:* the carbon consultant explained the source of the applied data and clarify some calculations.

The following pictures provide some impression of the project activity:



**Figure B: New compressor unit**



**Figure C: New DN700 Pipeline**



**Figure D: Oil and gas processing facilities**





At the end of the audit a preliminary list has been provided to the PP indicating the need for further clarifications or additional proofs (clarification request), as well as identified non-compliances which require the revision of documents and calculations (corrective action request). See also section 2.5.

The evidences (records, database, and documents) that have been checked during the strategic desk analysis, the audit and on punctual request thereafter were clearly presented and are listed in section 2.2.

#### **2.4.2 Summary of Assessment**

Eventually, the conducted verification audit of the project activity “Orenburg Oilfield Associated Gas Recovery and Utilization Project” for the second monitoring period 01/11/2020 – 31/12/2020 confirms that the monitoring and reporting of the achieved UERs for the period in question has been carried out in line with the verification principles and criteria postulated by the ISO 14064, and is in accordance with the monitoring plan specified in the approved PDD.

### **2.5. Resolution of Findings**

The objective of this phase of the verification is to resolve any outstanding issues which have to be clarified prior to final verifier’s conclusions on the project implementation, monitoring practices and achieved emission reductions. In order to ensure transparency a verification protocol (APPENDIX I) is completed for the project activity. The protocol shows in transparent manner the verification criteria (requirements) as given by the ISO 14064, means of verification and their results against the identified criteria, including findings.

In addition to and as a complement to the verification protocol, APPENDIX II lists correction action requests (CARs), clarification requests (CLs) and previous forward action requests (FARs) as issued, keeping records of all findings identified in the verification process and how those have been solved. Corrective action requests (CAR) are issued where mistakes have been made with a direct influence on project result whereas clarification requests (CL) have been made where additional information was needed to fully clarify an issue.

In the course of the verification of the project activity “Orenburg Oilfield Associated Gas Recovery and Utilization Project” for the monitoring period 01/11/2020 – 31/12/2020, the Verification Body identified and issued one CAR, four CLs and one FAR that came from the previous Verification Report; all of them are transparently organised in APPENDIX II.

The verification report is issued upon closing all above mentioned findings and after an internal review is conducted by a Technical Reviewer assigned to it by the verification body who was not himself a member of the audit team.

The FAR01 issued in a previous Verification Report for the monitoring period from 01/01/2020 to 31/10/2020 stated “that the revised description monitoring report Version V2.0 description of Monitoring in case of emergency (page 8) does not contain sufficient detail to fully comply with the EU ETS requirements for data review, error identification and data corrections including treatment of data gaps and conservative adjustments”.

TÜV Rheinland addressed FAR01 during the verification assessment for the monitoring period from 01/11/2020 to 31/12/2020. After submission of the Monitoring Report version 3.0 dated 24.02.202 the FAR01 could be closed because the "EU ETS requirements" could be identified in section 3 under “Treatment of data gaps”. It is stated that in the case of data gaps, conservative surrogate data using appropriate estimation methods in line with EU ETS



guidance provided in the Commission Regulation (EU) No 601/2012 of 21 June 2012<sup>2</sup> will be derived for the respective time period and missing parameter.

In addition, the action taken for the clarification of CL2 has shown a clear example for a more conservative approach by deriving surrogate data in line with EU ETS guidance. In that case, an average hourly flowrate was calculated for the month of December and then twice the standard deviation was deducted to calculate the surrogate values for the missing data in this 2 hour gap. These surrogate values are lower than the volume agreed with and sold to the purchasing organization, so it is ensured that the most conservative value was used in the calculations of UERs.

## **2.6. Forward Action Requests**

Within this verification no new forward action requests have been issued.

# **3 Verification Findings**

## **3.1. General information**

All information regarding the involved project proponents, the organizational arrangements, the daily practice, the technical features, the calibrations and the relevant procedures have been properly checked and proven to be correct.

Verification focused on the correct implementation of the project, including the correctness of source data and calculations.

All monitoring activities are in accordance with the monitoring plan in the validated PDD version 3.0 dated 30/12/2020 and with the revised Monitoring Report version 3.0 dated 24/02/2021.

## **3.2. Accuracy and completeness**

By review of documentation evidence, monitored data, associated parameters and calculations, it is considered that the UER calculations for the period 01/11/2020 – 31/12/2020 are correctly and accurately monitored.

All measured gas flows are metered using high-quality metering systems including secondary instrumentation, which are correctly maintained including periodic calibration and flow calculation tests. Metered data flow is automated transferred from metering system to process database, from where data is extracted as the source data for the project UER calculations.

Gas samples are extracted from correctly located gas sampling points and then they are analysed using the appropriate GOST standard for NCV analysis by accredited laboratory.

## **3.3. Quality of evidence / Quality and risk management**

All monitored data and fixed parameters are determined as per AM009 methodology requirements as described in the PDD and Monitoring Report. Risks to monitored data have

<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32012R0601>



been considered by implementing oil and gas standard maintenance and quality assurance procedures for high measurement systems. Calibrations and tests were all completed and valid at the time of verification for all applicable primary and secondary instrumentation for gas flow measurements.

### **3.4. Data gaps, corrections and uncertainties**

A data gap was identified for measured data from M3 and it was corrected (see CL2). An updated procedure for internal data checks, error identification and data correction methods for data gaps or data errors was correctly adopted and incorporated in MR version 3.0, this based on the Commission Regulation (EU) No 601/2012 of 21 June 2012. In the verifiers opinion this approach to deal with data gaps and uncertainties is a sufficient approach, also in line with EU ETS requirements.

### **3.5. Findings and non-conformities**

The verification team identified one (1) corrective action request and four (4) clarification requests. All findings have been closed including review of revisions to the monitoring report and UER calculations, before finalising the verification.

FAR01 from the previous Verification Report as described in section 2.5. has been closed



## 4 Verification conclusion

The Verification Team of TÜV Rheinland Energy GmbH has performed the verification of the project “Orenburg Oilfield Associated Gas Recovery and Utilization Project” in accordance with ISO 14064, as well as criteria given to provide for consistent project operations, monitoring and reporting.

TÜV Rheinland, therefore issues a positive verification opinion, confirming that upstream emission reductions claimed for the monitoring period 01/11/2020 – 31/12/2020 are verified to be 162,166,935,463 g CO<sub>2e</sub> (162,167 t CO<sub>2e</sub>) as indicated below:

Period	Baseline emissions or removals (g CO <sub>2e</sub> )	Project emissions or removals (g CO <sub>2e</sub> )	Leakage emissions (g CO <sub>2e</sub> )	Net GHG emission reductions or removals (g CO <sub>2e</sub> )
01/11/2020–31/12/2020	211,523,919,993	49,356,984,530	---	<b>162,166,935,463</b>

## 5 VERIFICATION STATEMENT

Gazprom Neft Trading GmbH  
Schwarzenberplatz 5, 5<sup>th</sup> Floor  
1030, Vienna, Austria

24 September 2021

RE: Orenburg Oilfield Associated Gas Recovery and Utilization Project

### **2<sup>nd</sup> Monitoring Period: 01/11/2020 – 31/12/2020**

Gazprom Neft Trading GmbH has contracted TÜV Rheinland Energy GmbH to review and verify its UER Monitoring Report for the monitoring period from 01/11/2020 to 31/12/2020 and all assertions related to the UER project against ISO 16064-2 requirements and the EU Directive 2015/652.

The verification of the UER project activity was conducted in accordance of the standard ISO 14064-3 and the approved CDM methodology AM009 ver.07 to a reasonable level of assurance. The monitoring report is approved to comply with the requirements under the ISO 14064-2 standard. The calibration frequency of the metering devices was demonstrated to follow the stipulations of the calculation methods and of the monitoring plan. The project information has been verified and the UER Verification Report ID 21252125 version 1.1 "Verification of Upstream Emission Reduction for Orenburg Oilfield Associated Gas Recovery and Utilization Project for the period 01/11/2020 – 31.12.2020", includes all relevant information and evidence acquired during the Verification process.

Based on the desk reviews, background investigations, remote audit and review of all available project documentation, the verification team come to the conclusion that the assertions are made in accordance with the requirements of the ISO 14064-2, the EU Directive 2015/652 and the applicable CDM standards. They are materially correct and fairly represent the required parameters without material discrepancies. The Upstream Emission Reductions claimed for the monitoring period from 01/11/2020 – 31/12/2020, are verified to be **162,166,935,463g CO<sub>2,eq</sub> (162,167 t CO<sub>2e</sub>)**.

TÜV Rheinland hereby certifies that the verified emission reductions will be internally accounted to the unique UER batch 0044\_TUEV\_20180427\_2020\_051.5945N,055.413E\_1096998.1259165, achieved during the monitoring period in question by the Orenburg Oilfield Associated Gas Recovery and Utilization Project.

Cologne, 24 September 2021



**Norbert Heidelmann**  
Project Leader and Auditor



**Denitsa Gaydarova-Itrib**  
Technical Reviewer

## APPENDIX I

### Verification Protocol

(based on ISO 14064 Part 2 and the Guidance Note of the Council Directive (EU) 2015/652 on approaches to quantify, verify, validate, monitor and report upstream emission reductions)

Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
<b>1. Implementation</b>								
1.1 Have all physical features proposed in the registered PDD been implemented at the project site?	x	x	x		Yes.		OK	OK
1.2 Has the project activity been operated in accordance with the project scenario described in the registered PDD and relevant guidance?	x	x	x		Yes, the project has been implemented and operated according to the validated and first verification project.		OK	OK
1.3. Does the project activity deviates from the documents underlying the approval?	x	x	x		No deviations could be identified.		OK	OK
1.3.1 If the project activity deviates from the documents underlying the approval, what impact the deviations may have on the level of UER?	x				N/A		OK	OK
1.4 If the project activity is implemented on a number of different locations, has the Monitoring report provided the verifiable starting dates for each site?	x			x	N/A. The project is implemented in one location, which is located in the existing facility of Orenburg Oilfield in the Orenburg Oblast. The coordinates of the physical site in PDD and MR2 have been verified with Google Earth Pro. Starting date of new DN 700 gas pipeline		OK	OK

Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
					26/01/2017 and starting date of compressor station TL4 27/04/2018 (all evidence was verified).			
<b>2. Monitoring methodology</b>								
2.1 Is the monitoring plan established in accordance with the monitoring methodology?	x				Yes. AM009 and tools were applied correctly.		OK	OK
<b>3. Monitoring plan</b>								
3.1 Is the monitoring system established in full compliance with the monitoring plan, contained in the registered PDD (or new monitoring plan approved by the applicable standard)	x				Yes. MR2 (28/01/2021)- section 4 "Data and parameters" is established in full compliance with AM009, Chapter 6 (Monitoring methodology).		OK	OK
3.2 Are all <b>baseline emission parameters</b> monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	x	x	x		Yes		OK	OK
3.3 Are all <b>project emission parameters</b> monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	x	x	x		Yes		OK	OK
3.4 Are all <b>leakage emission parameters</b> monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	x	x	x		Yes		OK	OK
3.4.1 Was the monitoring equipment for <b>baseline-, project- and leakage emission parameters</b> controlled and monitoring results recorded as per approved frequency?	x	x	x		Yes. Each measurement system is fully described in PDD and the MR2. In addition, every single device has been assessed and discussed during the FA.		OK	OK



Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
3.5 Was the monitoring equipment for <b>baseline-, project- and leakage emission parameters</b> calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	x	x	x		Yes. QA/QC of measurement systems and measurement procedures are described in the MR2 for each monitored parameter. All monitored data and fixed parameters are determined as per AM009 methodology requirements. Calibrations and tests were all completed and valid, which has been positively demonstrated during FA.		OK	OK
3.6 Were all monitoring parameters available and verifiable through the whole monitoring period?	x	x	x		Yes. All measured values of the determined parameters have been recorded in a correct way. Three minor data lacks have also been recorded transparently and correctly, so that an auxiliary calculation could be applied according to the validated procedure (see #3.6.1 below)		OK	OK
3.6.1 In case, only partial monitoring data is available and PP(s) provide estimations or assumptions for the rest of data, was it possible to verify those estimations and assumptions?	x	x	x		Three minor data lacks have been recorded transparently and correctly. The corresponding auxiliary calculations have been undertaken based on the validated procedures written in the Evidence Documents E14, E16 and E17.		OK	OK
3.7 Was management and operation system established and operated in accordance with the monitoring plan?	x	x	x		Yes. Monitoring Report- section 3 "Description of the monitoring system", organisational management structure and responsibilities had been fully established and a procedure for the treatment of data gaps had been added. This could be confirmed during FA.		OK	OK
<b>4. Parameters</b>								

Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
<p>4.1. Monitored Parameter 1</p> <p><u>Title:</u> Volume of APG transported via the new pipeline in period y</p> <p><u>Indication:</u> <math>V_{new,y}</math></p> <p><u>Unit:</u> <math>Sm^3</math> (20°C)</p> <p><u>Estimated value (ex-ante):</u> 330,478,158</p> <p><u>Measured value (ex-post):</u> 330,478,158</p>	x	x	x		<p>Source of data: Gas meter data records from M1 for November - December 2020, transmitted to the ABAK + flow computer.</p> <p>Doc. E14: (167686879) November + (163852751-1061472) December</p> <p><b>CL1: please explain if the subtraction of 1,061,472 <math>Sm^3</math> during December is related to the shutdown of the DN700 pipeline due to repair, and show evidence from where this number does come from.</b></p>	<p>Documents E37 &amp; E 38 have been submitted and explained.</p> <p><b>CL1 is closed.</b></p>	CL1	OK
<p>4.1 Monitored Parameter 2</p> <p><u>Title:</u> Volume of APG transported via the old pipeline in period y</p> <p><u>Indication:</u> <math>V_{old,y}</math></p> <p><u>Unit:</u> <math>Sm^3</math> (20°C)</p> <p><u>Estimated value (ex-ante):</u> 219,782,232</p> <p><u>Measured value (ex-post):</u> 219,725,992</p>	x	x	x		<p>Source of data: Gas meter data records from M2 and M3 for November - December 2020. M2 data is transmitted to the flow computer LNG-761 and M3 data to the FloBoss S600 + flow computer.</p> <p>Doc. E15 for M2: (44732427) November + (38569419) December</p> <p>Doc. E16 for M3: (61421937) November + (74965449+93000) December</p> <p><b>CL2: please explain if the addition of 93,000 <math>Sm^3</math> during December is related to the maintenance work and show evidence from where this number does come from.</b></p>	<p>Based on submitted additional Documents E35, E36, E49, E54_revised calculation and E55_scada_print_out, a conservative surrogate recalculation has been applied. The UER Calculation file version 2.0 has been submitted with the conservative value. Further explanation is given under FAR01</p> <p><b>CL2 is closed.</b></p>	CL2	OK

Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
<p>4.1 Monitored Parameter 3</p> <p><i>Title:</i> Volume of natural gas and high pressure APG measured at monitoring point M4 in period y</p> <p><i>Indication:</i> <math>V_{NG,HPAPG,y}</math></p> <p><i>Unit:</i> <math>Sm^3 (20^{\circ}C)</math></p> <p><i>Estimated value (ex-ante):</i> 100,174,189</p> <p><i>Measured value (ex-post):</i> 100,174,189</p>	x	x	x		<p>Source of data: Gas meter records from M4 for Nov-Dec 2020, transmitted to the ABAK + flow computer.</p> <p>Doc. E17: (52096016) November + (48913866) December.</p> <p>In UER calculations: (51593911) Nov + (48580278) December.</p> <p><b>CL3: please clarify the deviation of values in the documents E17 and the UER Calculation Sheet</b></p>	<p>Documents E34, E46 &amp; E47 have been submitted and explained. The reason for this deviation were different data sources taken incorrectly from the 1st batch of documents (E17).</p> <p><b>CL3 is closed.</b></p>	CL3	OK
<p>4.1 Monitored Parameter 4</p> <p><i>Title:</i> Weighted average net calorific value of APG in period y</p> <p><i>Indication:</i> <math>NCV_{APG,y}</math></p> <p><i>Unit:</i> <math>TJ/Sm^3 (20^{\circ}C)</math></p> <p><i>Estimated value(ex-ante):</i> <math>3.459 \times 10^{-5}</math></p> <p><i>Measured value (ex-post):</i> <math>3.459 \times 10^{-5}</math></p>	x	x	x		<p>As of October 2020, the NCV values for APG were determined weekly instead of monthly (according to GOST 31369 from 2008). Therefore, no surrogate data needed to be derived in this 2nd monitoring period.</p> <p>Gas analysis documents E2 to E10 deliver the weekly values leading to the correct NCV calculation.</p> <p><b>Note: the item is linked to FAR1 below.</b></p>		OK	OK
<p>4.1 Monitored Parameter 5</p> <p><i>Title:</i> Quantity of fuel gas consumed by the new compressor unit TL-4 in period y</p> <p><i>Indication:</i> <math>FC_{new,y}</math></p> <p><i>Unit:</i> <math>Sm^3 (20^{\circ}C)</math></p> <p><i>Estimated value (ex-ante):</i> 23,871,680</p> <p><i>Measured value (ex-post):</i> 23,871,680</p>	x	x	x		<p>Correctly applied.</p> <p>Source of data: Gas meter from M5 transmitted to the ABAK + flow computer.</p> <p>Doc. E20 for November</p> <p>Doc. E21 for December</p>		OK	OK

Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
4.1 Monitored Parameter 6 <u>Title:</u> Weighted average mass fraction of carbon in fuel gas in year y <u>Indication:</u> $w_{c,y}$ <u>Unit:</u> t C/t fuel gas <u>Estimated value (ex-ante):</u> 0.725 <u>Measured value (ex-post):</u> 0.725	x				Laboratory analysis. Documents E11 & E12  <b>CAR1: please specify the correct accreditation number for the fuel supplier laboratory (in MR is ROSS RU.SQSH00237 but according to E43 should be RA.RU.21HP46)</b>	The accreditation number has been corrected in the upgraded MR version 3.0 (24/02/2021).  <b>CAR1 is closed.</b>	CAR1	OK
4.1 Monitored Parameter 7 <u>Title:</u> Weighted average density of fuel gas at standard conditions in period y <u>Indication:</u> $\rho_y$ <u>Unit:</u> kg/Sm <sup>3</sup> <u>Estimated value (ex-ante):</u> 0.7543 <u>Measured value (ex-post):</u> 0.7543	x				Correctly applied. Laboratory analysis. Documents E11 & E12		OK	OK
4.1 Monitored Parameter 8 <u>Title:</u> Electricity consumed by the project (new compressor TL-4) in period y <u>Indication:</u> $EC_y$ <u>Unit:</u> MWh <u>Estimated value (ex-ante):</u> 947.85 <u>Measured value (ex-post):</u> 947.85	x	x	x		Measured by electricity meters at M6 (Nov - Dec 2020). Document E22 = Excel file with the list of electricity meters and details of monthly consumption coming from 5 metering devices (K-4360A/B/C/D/E) is correctly applied.		OK	OK
4.2 Default Parameter 1 <u>Title:</u> CO2 emission factor for methane <u>Indication:</u> $EF_{CO_2, \text{Methane}}$ <u>Unit:</u> t CO <sub>2</sub> /TJ <u>Default/used value:</u> 54.834	x				AM0009/version 7.0 default value		OK	OK

Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
4.2 Default Parameter 2 <i>Title:</i> Emission factor for electricity generation for the project in period y <i>Indication:</i> <b>EF<sub>grid</sub></b> <i>Unit:</i> tCO <sub>2</sub> /MWh <i>Default/used value:</i> 1.3	x				AM0009/version 7.0 conservative default value - Tool 5 Option A2. Correctly applied.		OK	OK
4.2 Default Parameter 3 <i>Title:</i> Average technical transmission and distribution losses for providing electricity to the project in period y <i>Indication:</i> <b>TDL<sub>grid</sub></b> <i>Unit:</i> % <i>Default/used value:</i> 20%	x				AM0009/version 7.0 conservative default value - Tool 5 Page 15 Correctly applied.		OK	OK
4.2 Default Parameter 4 <i>Title:</i> Maximum capacity of existing DN500 pipeline <i>Indication:</i> <b>Maximum transport capacity of the old DN500 gas pipeline</b> <i>Unit:</i> Sm <sup>3</sup> /year <i>Default/used value:</i> 2,025,417,232	x	x	x		Source of data: DN500 "gas pipeline design document" and historic gas balance. Most conservative value has been applied for the calculation of V <sub>APG,y</sub> . Documents E32 and E33 have been provided in Russian.  <b>CL4: please demonstrate where the parameter and the default value can be identified in the documents.</b>	Documents E32 & E33 have been explained during the FA. Parameter and default value were shown.  <b>CL4 is closed.</b>	CL4	OK
<b>5. Calculations</b>								
5.1 Have all the calculations related to the baseline emissions been carried out according to the formula and methods described in the registered PDD and applied methodology?	x				Yes. All calculations have been carried out correctly following the methodology AM009, the revised and validated PDD, and the MR for the period in question.		OK	OK
5.2 Have all the calculations related to the project emissions been carried out according to the formula and methods	x				Yes. See above		OK	OK

Checklist question	Means of Verification				Initial Assessment and Comments for Draft Conclusion	Proceeding and Completion for Final Conclusion	Draft conclusion	Final conclusion
	DR	I	FA	www				
described in the registered PDD and applied methodology?								
5.3 Have all the calculations related to the leakage emissions been carried according to the formulae and methods described in the registered PDD and applied methodology?	x				Yes. See above		OK	OK
<b>6. Outstanding FARs</b>								
<b>FAR01 from 1st Verification Report.</b> The revised description monitoring report Version V2.0 description of Monitoring in case of emergency" (Page 8) does not contain sufficient detail to fully comply with the EU ETS requirements for data review, error identification and data corrections including treatment of data gaps and conservative adjustments.	x	x	x		It should be specified what exactly was meant with "compliance with EU ETS requirements" and in which specific context this FAR01 was addressed in the 1st Verification Report, Section 5 and Annex 1 Items 1.2/ 1.8/ 1.9/ CAR01/ CL01	"EU ETS requirements" could be identified as "Commission regulation (EU) No. 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council". MR2 version 3.0 has been submitted and in section 3 it is clearly described that in case of data gaps conservative surrogate data using appropriate estimation methods in line with EU ETS guidance provided in the Commission Regulation (EU) No 601/2012 of 21 June 2012 will be de-rived for the respective time period and missing parameter. This approach was correctly applied to FAR01 and CL2.	FAR1	OK

DR = Document Review

I = Interview

FA = Field Assessment

www = internet search

### APPENDIX II

#### List of correction action requests (CARs), clarification requests (CLs) and forward action requests (FARs)

CAR/CL/FAR	Observation (CAR/CL)	Reference	Summary of project owner response	TÜV Comment
CAR1	Please specify the correct accreditation number for the fuel supplier laboratory (in MR is ROSS RU.SQSH00237 but according to E43 should be RA.RU.21HP46)	Monitoring_Report_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0	The Monitoring Report has been revised accordingly. Monitoring Report Version 3.0 now refers to the correct accreditation number (RA.RU.21HP46).	The corrective actions were undertaken and the MR has been accordingly revised. <b>CAR1 is closed</b>
CL1	Please explain if the subtraction of 1,061,472 Sm <sup>3</sup> during December is related to the shutdown of the DN700 pipeline due to repair, and show evidence from where this number does come from.	Annex_1_UER_Calculation_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0	Documents E37 & E 38 have been submitted and explained.	The clarification has been submitted in a sufficient and transparent manner. <b>CL1 is closed</b>
CL2	Please explain if the addition of 93,000 Sm <sup>3</sup> during December is related to the maintenance work and show evidence from where this number does come from.	Annex_1_UER_Calculation_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0	Based on submitted additional Documents E35, E36, E49, E54_revised calculation and E55_scada_print_out, a conservative surrogate recalculation has been applied. The UER Calculation file version 2.0 has been submitted with the conservative value. Further explanation is given under FAR01	The clarification has been submitted in a sufficient and transparent manner. <b>CL2 is closed</b>
CL3	Please clarify the deviation of values in the documents E17 and the UER Calculation Sheet.	Annex_1_UER_Calculation_MR2_Nov_Dec_2020_Orenburg_FlareRecovery_version1.0	Documents E34, E46 & E47 have been submitted and explained. The reason for this deviation were different data sources taken incorrectly from the 1st batch of documents (E17).	The clarification has been submitted in a sufficient and transparent manner. <b>CL3 is closed</b>



CAR/CL/ FAR	Observation (CAR/CL)	Reference	Summary of project owner response	TÜV Comment
CL4	Please demonstrate where the parameter and the default value can be identified in the documents.	E23_Gas Metering Instructions_Methodological Document_M-01.03.06-01	Documents E32 & E33 have been explained during the FA. Parameter and default value were shown.	The clarification has been submitted in a sufficient and transparent manner. <b>CL4 is closed</b>
FAR01	It should be specified what exactly was meant with "compliance with EU ETS requirements" and in which specific context this FAR01 was addressed in the 1st Verification Report, Section 5 and Annex 1 Items 1.2/ 1.8/ 1.9/ CAR01/ CL01	2021-01-15 UER044_Gazprom_Orenburg_Ver R V01	"EU ETS requirements" could be identified as "Commission regulation (EU) No. 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council". MR2 version 3.0 has been submitted and in section 3 it is clearly described that in case of data gaps conservative surrogate data using appropriate estimation methods in line with EU ETS guidance provided in the Commission Regulation (EU) No 601/2012 of 21 June 2012 will be de-ri-ved for the respective time period and missing parameter. This approach was correctly applied to FAR01 and CL2.	The conservative approach is correctly applied. <b>FAR01 &amp; CL2 are closed</b>

## **APPENDIX III**

### Abbreviations

APG	Associated Petroleum Gas
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
EU ETS	European Union Emissions Trading System
FQD	Fuel Quality Directive
GHG	Greenhouse Gas
GPN	Gazprom Neft
ISO	International Standard Organisation
PDD	Project Design Document
UER	Upstream Emission Reductions