VERIFICATION REPORT

TÜV Rheinland Energy GmbH, Germany

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

Project Title	Gas to power (G2P) Gornet
Project proponent	OMV Petrom S.A., Upstream Romania, Asset VII Muntenia Est. Str. Coralilor nr. 22, sector 1, Bucureşti ("Petrom City")
Report Title	Verification of Upstream Emission Reduction for G2P Gornet project for the period 01.01.2020 – 31.12.2020
Report ID	21251579
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Verification Standards	**ISO 14064 – Part 2, in conjunction with Austria's "Kraftstoffverordnung" & Czech Republic Fuel Legislation.**
Total amount of UERs	**9,123 t CO_{2e}** **9,123,839 kg CO_{2e}** **9,123,839,856 g CO_{2e}**
UERs Batch 2 (1523 t CO_{2e})	**0936_TUEV_16122015_2020_045.1200N,026.1009E_0007601.0009123**

Summary:

TÜV Rheinland Energy GmbH was assigned to perform verification of the monitoring period 01/01/2020 – 31/12/2020 for the upstream emission reduction project "G2P Gornet" in accordance with the ISO 14064-3, Austria's "Kraftstoffverordnung", Czech republic Regulation No. 189/2018 & No. 201/2012, 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 Gornet Plant, Romania. The project activity is the construction of a gas to power (G2P) plant to recover and utilize the associated petroleum gas previously flared. In the absence of the project activity, the associated petroleum gas was flared; instead now it is transferred to generate electricity.

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 G2P Gornet" for the verification period from 01/01/2020 until 31/12/2020.

The Verification Body identified five corrective action requests (CARs), three clarification requests (CLs) and one forward action request (FAR) from the previous validation, 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 "G2P Gornet", confirming that for the monitoring period 01/01/2020 – 31/12/2020 upstream emission reductions of **9,123,839,856 gCO_{2e}** are realised from the aforementioned project activity.

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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 "G2P Gornet Project" for the verification period from 01/01/2020 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 PD 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: "G2P Gornet" in order to confirm compliance of the monitoring report with requirements of ISO 14064 part 2, Austria's "Kraftstoffverordnung" (KVO) and Czech Republic Fuel Regulations (No. 189/2018 & No. 201/2012) implementing 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 01/01/2020 to 31/12/2020 in accordance with the ISO 14064-3. The verification is also based on the validated and approved Project Document (PD) v 1.1 dated 22.01.2019; 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 of the verification report is to confirm the amount of the UERs generated from project activity over the monitoring period and following the validated monitoring plan. The report is issued to the project owner and thus, TÜV Rheinland is not responsible for any further use that may be made of this report.

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 PD version 1.1 dated 22/01/2020, UER calculation sheets, calibration reports, records, etc.
- On-site assessment: This step confirms that the project has been implemented as described in the PD 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 team 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 installation of two G2P units in order to recover and utilize the associated gas for electricity production. In 2015, phase 1 of the project was implemented by installing the first G2P unit. In 2017, the second G2P unit was installed in order to utilize additional associated gas from a new oil well. Since then, both units have been continuously operating and part of the obtained electricity has been used locally and the surplus transferred to other OMV Petrom locations. The G2P plant have been operated, maintained and monitored by a Contractor (Aggreko) and is not part of the project scenario.

In the absence of the project activity, the associated gas was flared. Hence, the project activity causes a reduction of emissions by avoiding the flaring of this gas, which are claimed as UERs.

The project is located in the Romania at Prahova County. The geographical coordinate set of the G2P Gornet plant is:

Latitude: 45.120032 North

Longitude: 26.100950 East

And the geographical coordinate set of the flare stack is:

Latitude: 45.120191 North

Longitude: 26.101827 East

Figure A: Overview on Project Location

The purpose of the project is to use the previously flared gas at Park 98 Gornet within Asset VII and obtained electricity for local operation.

The project boundary of the project activity "G2P Gornet" was defined in the validated and approved project documentation (PD), in accordance with the applied CDM Methodology AM0009 and ISO 14064-2.

The greenhouse gases included in the project boundary are CO_2 emission sources from measured fuel consumption delivered to the G2P units.

1.6. Verification period

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

1.7. 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 "G2P Gornet", confirming that for the monitoring period 01/01/2020 – 31/12/2020, GHG upstream emission reduction of **9,123,839,856 gCO_{2e}** 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 "G2P Gornet" for the monitoring period 01/01/2020 – 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 "G2P Gornet" 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
1	PD_G2P-Gornet_v1.1	18.03.2021
2	VE-UER-002 OMV G2P Gornet - Validation Report 2019-02-14 final	18.03.2021
3	PD_G2P-Gornet_Evidence set from 01 to 11	18.03.2021
4	MR_G2P-Gornet_2020_v1.0	12.04.2021
5	MR_G2P-Gornet_2020_Detailed-Quantification-of-Emissions_v1.0	12.04.2021
6	Meter Exchange Protocol_Muntenia - Bonatti	12.04.2021
7	PU-D-ROPEP19435443-IN-010-98-MNT-00-R_VMI G2P Gornet (Calibration document for fiscal meter)	12.04.2021
8	RC-Parc 98 Gornet SN 6641 (Calibration Scanner 2000)	12.04.2021
9	RS-Parc 98 Gornet SN 6641 (Service report Scanner 2000)	12.04.2021
10	Gas Analysis Set of documents from 01 to 11	12.04.2021
11	PV Gornet 1 Set of invoices from 01.01.2020 to 31.12.2020	12.04.2021
12	PV Gornet 2 Set of invoices from 01.01.2020 to 31.12.2020	12.04.2021
13	Gas Analysis document 12	21.04.2021
14	Set of 52 pictures	21.04.2021
15	MR_G2P-Gornet_2020_v2.0	11.05.2021
16	MR_G2P-Gornet_2020_Detailed-Quantification-of-Emissions_v2.0	11.05.2021
17	AM0009/version 7.0	

2.3. Interviews

The interview process was conducted during the audit with responsible staff of OMV Petrom S.A., OMV Downstream 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 20th of April 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	Company	Role
Tobias Danz	OMV Downstream	UER Monitoring Responsible
Florina Filip	OMV Petrom SA	UER Key Focal Point
Leonard Floricica-Stan	OMV Petrom SA	Department Manager Energy Management
Oliver Percl	Energy Changes	OMV's consultant

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 Czech Republic and Germany, travelling to Gornet for an on-site assessment in April 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 project facilities have been explained and shown on-screen by sharing pictures of the two G2P units, the flare pipeline, the flare stack and all flowmeters. It was confirmed that the G2P plant operates as described in the validated PD and that since validation audit two flowmeters were installed with no alteration of the operation. The flowmeter Scanner 2000 was installed in 29/05/2019 to measure the volume of associated gas flared in the monitoring period and also to fulfill the requirements related with FAR1 from previous validation. The fiscal meter SN 047/2019 was installed by OMV Petrom S.A. in order to measure the gas flow to the G2P units in addition to the flowmeters owned by Aggreko, and to double check the data.
- Milestones of the implementation during monitoring period: it was confirmed that there were no interruptions in the operation during monitoring period and that the mayor milestone was the installation of the new fiscal meter. This meter is connected to a SCADA system, and when the daily data was compared with the original data coming from the Aggreko meters, an average difference between measurements of 0.4% was found. It was analyzed that the difference may has come from a lack of updated calibration of the Aggreko meters (specially the meter from phase 1), since they were calibrated only during installation.
- Organisational management structure and responsibilities: OMV Petrom responsible person explained, showed and provided additional details of the monitoring system and roles of each person, with focus on clarifying the Upstream Energy Efficiency Department filling system. It was confirmed that the monitoring system was implemented according monitoring plan as described in the validated PD.
- Data processing and recording: OMV Petrom responsible person showed and explained the PIMMS (production, information, management and monitoring system) and that the input data changed since 18/07/2020 as following:
    - Flare volumes are taken directly from the above-mentioned Scanner 2000 meter.
    - Volumes for consumption of G2P phase 2 are taken from Aggreko meter phase 2, because the calibration from 2017 is still valid and within the frequency of calibration according to the equipment manufacturer.
    - Volumes for consumption of G2P phase 1 are calculated as the volume measured by the new fiscal meter minus volumes of phase 2 and minus flared volumes.

  At this point of the audit it was discussed how to assess the data previous to 18/07/2020 and the corresponding corrective actions. (CAR1 & CAR2) were issued.
- Measuring devices: Every single monitoring device has been explained based on batches of photos and a clear flowmeters diagram. It was confirmed that all devices

function as described and foreseen and are subject to regular maintenance. The Scanner 2000 and Petrom's fiscal meter are subject to regular calibration. The carbon consultant explained that the reason to install a flowmeter before the flare stack was to demonstrate the conservative value of project emissions.

- 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 laboratory.
- 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 and measuring system:

Figure B: The 2 G2P units operated by Aggreko

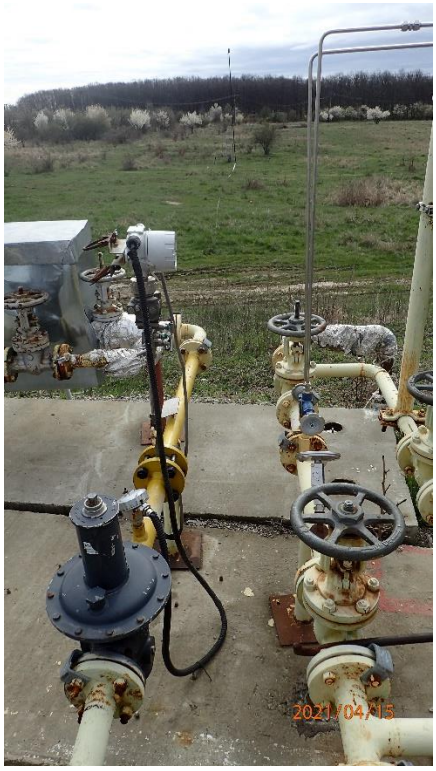

Figure C: Flare pipeline and flare stack

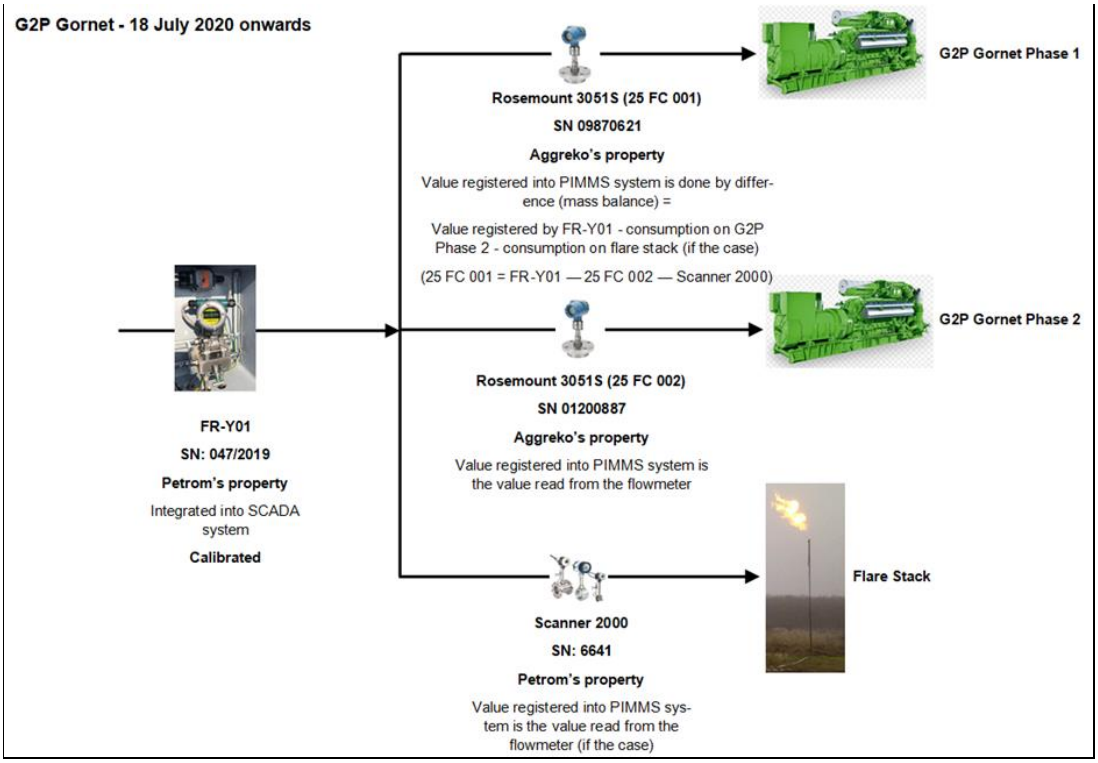

Figure D: Flowmeters array after 18/07/2020

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 “G2P Gornet” for the monitoring period 01/01/2020 – 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 PD.

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 “G2P Gornet” for the monitoring period 01/01/2020 – 31/12/2020, the Verification Body identified and issued five CARs, three CLs and one FAR that came from the previous Validation 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 Validation Report for the monitoring period from 01/01/2020 to 31/12/2020 stated “The project emissions value of "zero" in all instances makes the ER calculations only conservative as long as the amount of methane vented before manual ignition is successfully started for each venting event remains negligible compared to the amount remaining unburnt in the baseline scenario. It would be necessary that along the project proponents can provide sufficient evidence at verification that this is the case (e.g. by logbooks, automatic ignition, others)”.

TÜV Rheinland addressed FAR1 during the verification assessment for the monitoring period from 01/01/2020 to 31/12/2020. After submission of the Monitoring Report version 2.0 dated

11.05.2021 the FAR1 could be closed because the Scanner 2000 flowmeter was installed and the parameter $F_{flare,y}$ was monitored and included in the monitoring period.

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 and the accurate quantification of resulting upstream emission reductions, including the exact implementation of the validated monitoring plan, correctness of source data and calculations.

The verification team confirms that the project is implemented as described in the validated PD version 1.1 dated 22/01/2019, where the associated gas is processed in 2 gas to power units, i.e. the gas that was previously flared is now being used for power generation.

A deviation from the validated monitoring plan was described in the monitoring report for the monitoring period in question. Two additional metering devices, FR-Y01 (SN047/2019) and Scanner 2000, which are calibrated and connected to the SCADA system, were installed by OMV Petrom, in order to ensure higher accuracy of the measured gas volumes (relevant for billing purposes). These deviations have been thoroughly discussed with the project owner and the plant manager during the verification audit. The impact of the deviation from the validated monitoring plan on the generated UER is discussed in the following chapter of this report.

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 01/01/2020 – 31/12/2020 are correctly and accurately monitored.

All data, which are subject to monitoring, have been measured and recorded over the entire monitoring period as indicated in the validated monitoring plan. An internal data quality check for the period March-July 2020 resulted in a difference (average of 0.4%) between the gas volume measurements by the Aggreko meters and the additionally installed OMV Petrom fiscal meter. Therefore, the project owner revised the monitoring procedures relevant for the calculation of the UER generated, and proceeded as follow:

- In the period from 01.01.2020 to 24.03.2020 the volume of associated gas is measured by the Aggreko Phase 1 and Phase 2 meters. The phase 1 metering device has not been re-calibrated since the installation in 2015 and the difference in the measurements for the period March-July 2020 was demonstrated, therefore the UER consultant has re-calculated the UERs considering the maximum measurement deviation of 2% for gas volume measured by the not calibrated meter (Aggreko Phase 1).

- In the period from 25.03.2020 to 17.07.2020 the volume of associated gas is measured by the Aggreko Phase 1 & Phase 2 meters, as well as by the OMV Petrom meters FR-Y01 and Scanner 2000. The latter meters are calibrated and connected to the Scada system. The volume of recovered associated gas is determined as the difference between the measurements of the OMV Petrom meters, i.e. the overall volume of associated gas minus the volume which is flared.

- In the period from 18.07.2020 to 31.12.2020 the volume of associated gas is measured by the Aggreko Phase 1 & Phase 2 meters as well as by the OMV Petrom meters FR-Y01 and Scanner 2000. The volume of recovered associated gas is determined as the sum of the gas volume fed into G2P phase 1 & phase 2. The associated gas fed into G2P Phase 2 is measured by the calibrated Aggreko phase 2 meter. The associated gas fed into G2P phase 1 is determined as the difference between the measurements of the OMV Petrom meters, FR-Y01 and Scanner 2000, and the Aggreko Phase 2 meter.

It was proven that OMV Petrom high-quality metering system, including secondary instrumentation, are correctly maintained including periodic calibration and flow calculation tests. Metered data flow is automated transferred to the PIMMS, the consumption data is double-checked with the data from the SCADA system and then is extracted as the source data for the project UER calculations.

Gas samples are extracted correctly from a located gas sampling point and then they are analysed using the appropriate SR EN ISO 17025 standard for the determination of NCV and $EF_{CO2,RG}$ 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 PD and Monitoring Report. Risks to monitored data have 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, deviations and uncertainties

A deviation from validated PD was identified for the data measured before the installation of OMV Petrom fiscal meter (FR-Y01) and it was accordingly corrected (see CAR1 & CAR2). An updated procedure for correction of the deviation was properly adopted in MR version 2, this based on the Commission Regulation (EU) No 601/2012 of 21 June 2012. In the verifiers opinion this approach to correct the 2% deviation in the period when the OMV Petrom fiscal meter was not installed, is a sufficient and conservative approach.

3.5. Findings and non-conformities

The verification team identified five (5) corrective action requests and three (3) 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 Validation 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 “G2P Gornet” 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 01/01/2020 – 31/12/2020 are verified to be 9,123,839,856 g CO_{2e} (9,124 t CO_{2e}) as indicated below:

Period	Baseline emissions or removals (g CO_2e)	Project emissions or removals (g CO_2e)	Leakage emissions (g CO_2e)	Net GHG emission reductions or removals (g CO_2e)
01/01/2020–31/12/2020	9,123,839,856	----	---	**9,123,839,856**

5 VERIFICATION STATEMENT

OMV Petrom S.A.
Upstream Romania, Asset VII
Str. Coralilor 22, sector 1
Bururesti, Petrom City

27 May 2021

RE: G2P Gornet Project

Monitoring Period: 01/01/2020 – 31/12/2020

OMV Petrom S.A. has contracted TÜV Rheinland Energy GmbH to review and verify its UER Monitoring Report for the monitoring period from 01/01/2020 to 31/12/2020 and all assertions related to the G2P Gornet 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 OMV Petrom metering devices is 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 21251579 version 1.2 "Verification of Upstream Emission Reduction for G2P Gornet Project for the period 01/01/2020 – 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, Austria's "Kraftstoffverordnung", Czech Republic Regulation No. 189/2018 & No. 201/2012 and the applied CDM methodology. They are materially correct and fairly represent the required parameters without material discrepancies. The Upstream Emission Reductions claimed for the monitoring period from 01/01/2020 – 31/12/2020, are verified to be **9,123,839,856 g $CO_{2,eq}$ (9,124 t CO_{2e}).**

Cologne, 27 May 2021

Florencia Tamanini
Project Leader and Auditor

Norbert Heidelmann
Technical Reviewer

APPENDIX I

Verification Protocol

(based on ISO 14064 Part 2, Austria's Kraftstoffverordnung, Czech Republic Government Regulation No. 189/2018 & No. 201/2012 and the Guidance Note of the Council Directive (EU) 2015/652 on approaches to quantify, verify, validate, monitor and report upstream emission reductions)

DR = Document Review I = Interview FA = Field Assessment www = internet search

Checklist question	MoV				TÜV: Findings, comments, references, data sources	PP: Comments	Draft conclusion	Final conclusion
	DR	I	FA	www				
1. Implementation								
1.1 Have all physical features proposed in the registered PDD been implemented at the project site?	x	x	x		Yes. Phase 1 and phase 2 has been implemented as described in PDD and confirmed through set of photos and interviews during FA.		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. PD - item 2: The aim of the project was to recover previously flared gas and to utilize it as source to generate electricity with a G2P plant. Project implementation has been validated and described in MR exactly like in PD, and during monitoring period the G2P plant has worked continuously.		OK	OK

Checklist question	MoV				TÜV: Findings, comments, references, data sources	PP: Comments	Draft conclusion	Final conclusion
1.3. Does the project activity deviates from the documents underlying the approval?	x	x	x		Yes. After validation of the project a new Scanner has been installed to measure the gas flow to the flare stack in addition to the existing RLC meter. Also a new fiscal meter integrated into SCADA system was installed on 25/03/2020 in order to measure the total volume of gas consumption. After 18/07/2020 the fuel consumptions are taken from calibrated meter, registered in PIMMS and shown on the invoices between Aggreko and Petrom (as in validated MP). **CAR1: A full description of the current measuring system should be included under section 2.2 "Deviations from validated monitoring plan".**	MR version 2 has been submitted with extensive detail and overview of the measuring system. **CAR1 is closed.**	CAR1	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	x	x		Since installation of new fiscal meter until 18/07/2020 the average difference between the measurements was 0.4%. **CAR2: Please provide a new UER calculation considering Article 28 of the EU601/2012 and the Petrom fiscal meter integrated into SCADA system.**	Excel UER calculation version 2 has been submitted applying Art.28 of EU601/2012. For the period from 25/03/2020 until 17/03/2020 the volumes used for the calculation are taken from the more accurate SCADA based meter readings. For the period from 01/01/2020 until 24/03/2020 the volumes used for the calculation are taken from Aggreko invoices and corrected by 2%, (maximum error according to the meter specifications). **CAR2 is closed.**	CAR2	OK
1.4 If the project activity is implemented on a number of different locations, has the Monitoring report provided the	x	x	x		N/A. Project activity is implemented on one location.		OK	OK

Checklist question	MoV				TÜV: Findings, comments, references, data sources	PP: Comments	Draft conclusion	Final conclusion
verifiable starting dates for each site?								
2. Monitoring methodology								
2.1 Is the monitoring plan established in accordance with the monitoring methodology?	x				Yes. AM0009 version 07.0.		OK	OK
3. Monitoring plan								
3.1 Is the monitoring established in full compliance with the monitoring plan, contained in the registered PDD (or new monitoring plan approved by the applicable standard)?	x	x	x		Yes. PD - item 9 "Monitoring of the UER project" with structure and responsibilities. MR - item 3 "Description of the monitoring system" with extended detail of roles & responsibilities. **CL1: Please clarify what is the Upstream Energy Efficiency Department filling system mentioned in section 3.3 under "Responsibility".**	During FA this filling system was shown and confirmed that data is safety stored. **CL1 is closed.**	CL1	OK
3.2 Are all **baseline emission parameters** monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	x				Yes. MR - item 5.1: Baseline emissions are calculated in line with CDM approved methodology AM0009 version 07.0. **CAR3: MR version 1.0, in item 5.1 it is mentioned that the emissions are calculated according to formula 2, but there afterwards Formula 1 appears. Please correct the sentence.**	MR version 2 has been submitted with the correct sentence. **CAR3 is closed.**	CAR3	OK
3.3 Are all **project emission parameters** monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	x				N/A. MR - item 5.2: No project emissions occur, as the project includes no additional consumption of electricity or fossil fuels.		OK	OK

Checklist question	MoV				TÜV: Findings, comments, references, data sources	PP: Comments	Draft conclusion	Final conclusion
3.4 Are all **leakage emission parameters** monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	x				N/A. There is no transport of gas by vehicles, so leakage does not to be considered according to AM0009 ver.07.0		OK	OK
3.4.1 Was the monitoring equipment for **baseline-, project- and leakage emission parameters** controlled and monitoring results recorded as per approved frequency?	x	x	x		Yes. MR - item 4: "Monitoring Parameters and Data Quality". The frequency of OMV Petrom flowmeter calibrations is 4 years according to equipment manufacturer and data feeds directly in PIMMS.		OK	OK
3.5 Was the monitoring equipment for **baseline-, project- and leakage emission parameters** calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	x	x	x		Yes. MR - item 4: "Monitoring Parameters and Data Quality". The 2 flowmeters from Agrekko were calibrated during commissioning phases. Fiscal Meter is properly calibrated. Scanner 2000 meter is properly calibrated. **CL2: Please clarify flowmeters positions/diagram**	During FA the G2P flowmeter scheme was shown and explained, confirming the use of the properly calibrated meters. MR version 2 has been submitted with extensive description and flowmeter scheme included. **CL2 is closed.**	CL2	OK
3.6 Were all monitoring parameters available and verifiable through the whole monitoring period?	x				Yes. No omission of data occurred during monitoring period and all records are saved in PIMMS. Some results are kept more than 10 years and others for the entire project duration.		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				N/A		OK	OK

Checklist question	MoV				TÜV: Findings, comments, references, data sources	PP: Comments	Draft conclusion	Final conclusion
3.7 Was management and operation system established and operated in accordance with the monitoring plan?	x	x	x		Yes. MR - item 3.3: "Roles & responsibilities for daily operations at the project location".		OK	OK
4. Parameters								
4.1. Monitored Parameter 1 *Title:* Volume of fuel (recovered gas) consumed in the G2P plants in the monitoring period y *Indication:* **FC_y** *Unit:* Sm3 *Estimated value (ex-ante):* 4,100,175 Sm^3 *Measured value (ex-post):* 4,082,280 Sm^3	x				Volume measured via AGGREKO flowmeter (phase 1 SN 09870621, phase 2 SN 01200887) and PETROM flowmeter (SN 047/2019). Data from AGGREKO feeds in PIMMS, then verified and double-checked with data from Petrom, and after declared in monthly invoices. **CL2: Please clarify flowmeters positions/diagram**	MR version 2 has been submitted with extensive description and flowmeter scheme included. **CL2 is closed.**	CL2	OK
4.1 Monitored Parameter 2 *Title:* Average net calorific value of the fuel gas in the monitoring period y *Indication:* **$NCV_{RG,y}$** *Unit: TJ/Sm3* *Estimated value (ex-ante):* 3.92E-5 TJ/Sm3 *Measured value (ex-post)*: 3.92 x 10^{-5} TJ/Sm3	x				Gas analysis data comes from onsite sampling by accredited laboratory and gas chromatography analysis. **CAR4: MR version1.0, page 8, the value of this parameter is incomplete. Please correct the number.** **CL3: Please provide gas analysis pdf document from December.**	MR version 2 with corrected value and gas analysis from December have been submitted. **CAR 4 and CL3 are closed.**	CAR4 CL3	OK

Checklist question	MoV				TÜV: Findings, comments, references, data sources	PP: Comments	Draft conclusion	Final conclusion
4.1 Monitored Parameter 3 *Title:* Average CO2 emission factor of the fuel gas in the monitoring period y *Indication:* **$EF_{CO2,RG,y}$** *Unit:* tCO2/TJ *Estimated value (ex-ante):* 57.05 tCO2/TJ *Measured value (ex-post):* 57.05 tCO2/TJ	x				Gas analysis data comes from onsite sampling by accredited laboratory and gas chromatography analysis.		OK	OK
4.1 Monitored Parameter 4 *Title:* Volume of associated gas flared in the monitoring period y *Indication:* **$F_{flare,y}$** *Unit:* Sm^3 *Estimated value (ex-ante):* 161,768 Sm^3 *Measured value (ex-post):* 170,536 Sm^3	x				Gas flow to the flare stack is measured continuously with Scanner 2000. The gas containing methane that remains unburnt is calculated with an assumed conservative flare efficiency for open flare of 75% = 1,025,044 Sm3. It has been demonstrated that even with a delayed ignition at times, project emissions from the unburnt share of the associated gas are still significantly lower than in the baseline scenario and therefore conservative (Further explanation is given under FAR1) **CAR5: Please correct value of F_{flare} parameter in MR based on UER calculations Flare PIMMS daily.**	MR and UER calculations version 2 have been submitted with the correct value for this parameter. **CAR5 is closed.**	CAR5	OK
5. Calculations								
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. Calculations according to AM0009 version 07.0.		OK	OK

Checklist question	MoV				TÜV: Findings, comments, references, data sources	PP: Comments	Draft conclusion	Final conclusion
5.2 Have all the calculations related to the project emissions been carried according to the formulae and methods described in the registered PDD and applied methodology?	x				N/A		OK	OK
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				N/A		OK	OK
6. Outstanding FARs								
FAR from Validation Report: During the verification process it needs to be checked that the project emissions value of "zero" in all instances is conservative.	x	x	x		**FAR1:** The project emissions value of "zero" in all instances makes the ER calculations only conservative as long as the amount of methane vented before manual ignition is successfully started for each venting event remains negligible compared to the amount remaining unburnt in the baseline scenario. It would be necessary that along the project proponents can provide sufficient evidence at verification that this is the case (e.g. by logbooks, automatic ignition, others).	Assuming a flare efficiency of conservative 75% in the baseline scenario a proportion of gas containing methane remains unburnt. Based on this calculation and comparing with the total amount of gas flare during monitoring period, the project emissions from the unburnt share of the AG are significantly lower than in the baseline scenario and therefore conservative. (unburnt AG in baseline = 1,025,044 Sm3 > gas flare in 2020 = 170,536 Sm3). **FAR1 is closed.**	**FAR1**	OK

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	A full description of the current measuring system should be included under section 2.2 "Deviations from validated monitoring plan".	MR_G2P-Gornet_2020_v1.0	MR version 2 has been submitted with extensive detail and overview of the measuring system.	The corrective actions are undertaken and MR have been accordingly revised. CAR1 is closed
CAR2	Please provide a new UER calculation considering Article 28 of the EU601/2012 and the Petrom fiscal meter integrated into SCADA system.	MR_G2P-Gornet_2020_Detailed-Quantification-of-Emissions_v1.0	Excel UER calculation version 2 has been submitted applying Art.28 of EU601/2012. For the period from 25/03/2020 until 17/03/2020 the volumes used for the calculation are taken from the more accurate SCADA based meter readings. For the period from 01/01/2020 until 24/03/2020 the volumes used for the calculation are taken from Aggreko invoices and corrected by 2%, (maximum error according to the meter specifications).	The corrective action is undertaken and UER calculations have been accordingly revised. CAR2 is closed
CAR3	MR version 1.0, in item 5.1 it is mentioned that the emissions are calculated according to formula 2, but there afterwards Formula 1 appears. Please correct the sentence.	MR_G2P-Gornet_2020_v1.0	MR version 2 has been submitted with the sentences corrected.	MR version 2 have been accordingly revised. CAR3 is closed

CAR/CL/FAR	Observation (CAR/CL)	Reference	Summary of project owner response	TÜV Comment
CAR4	MR version1.0, page 8, the value of this parameter is incomplete. Please correct the number.	MR_G2P-Gornet_2020_v1.0	MR version 2 with corrected value has been submitted.	MR ver.2 have been accordingly revised. CAR4 is closed
CAR5	Please correct value of Fflare parameter in MR based on UER calculations Flare PIMMS daily.	MR_G2P-Gornet_2020_v1.0	MR and UER calculations version 2 have been submitted with the correct value for this parameter.	The corrective action is undertaken, UER calculations and MR have been accordingly revised. CAR5 is closed
CL1	Please clarify what is the Upstream Energy Efficiency Department filling system mentioned in section 3.3 under "Responsibility".	MR_G2P-Gornet_2020_v1.0	During FA this filling system was shown and confirmed that data is safety stored.	CL1 is clarify and closed.
CL2	Please clarify flowmeters positions/diagram	MR_G2P-Gornet_2020_v1.0	During FA the G2P flowmeter scheme was shown and explained, confirming the use of the properly calibrated meters. MR version 2 has been submitted with extensive description and flowmeter scheme included.	CL2 is clarify and closed.
CL3	Please provide gas analysis pdf document from December.	Gas Analysis folder	Gas analysis corresponding to December 2020 has been submitted.	CL3 is closed.
FAR1	The project emissions value of "zero" in all instances makes the ER calculations only conservative as long as the amount of methane vented before manual ignition is successfully started for each venting event remains negligible compared to the amount remaining unburnt in the baseline scenario. It would be necessary that along the project proponents can provide sufficient evidence at verification that this is the case (e.g. by logbooks, automatic ignition, others).	MR_G2P-Gornet_2020_v1.0 MR_G2P-Gornet_2020_Detailed-Quantification-of-Emissions_v1.0	Assuming a flare efficiency of conservative 75% in the baseline scenario a proportion of gas containing methane remains unburnt. Based on this calculation and comparing with the total amount of gas flare during monitoring period, the project emissions from the unburnt share of the AG are significantly lower than in the baseline scenario and therefore conservative. (unburnt AG in baseline = 1,025,044 Sm3 > gas flare in 2020 = 170,536 Sm3).	The conservative approach have been accordingly verified. FAR1 is closed.

APPENDIX III

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
EU ETS	European Union Emissions Trading System
FAR	Forward Action Request
FQD	Fuel Quality Directive
G2P	Gas to power
GHG	Greenhouse Gas
ISO	International Standard Organisation
PD	Project Document
PP	Project proponent
UER	Upstream Emission Reductions