



VCS VERIFICATION REPORT OF ASSOCIATED GAS RECOVERY AND UTILIZATION AT KHAMILAH OIL FIELD AREA AT BLOCK-27 IN WILAYAT LBRI OF THE SULTANATE OF OMAN

(VCS PROJECT ID: 2768)



Document Prepared By CTI Certification Co., Ltd

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Prepared By	CTI Certification Co., Ltd.
Contact	Address: F8-A CTI Building, No.4 LiuXianSan Road, Xin'an Street, Bao'an District, 518101, Shen Zhen, China Tel: +86 10 65580012 Email: linshunrong@cti-cert.com Website: http://www.cti-cert.org
Approved By	Zhou Lu 
Work Carried Out By	Team Leader: Tong Dezheng Team Member: Feng Tian Local Expert: Halima Hamed Al Hinaai Technical Reviewer: Lin Wu

Summary:

CTI Certification Co., Ltd. (CTI) has performed the verification of the emission reductions reported for the project activity “Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman” (VCS Project ID:2768) for the monitoring period 05/01/2020-31/07/2020 within the 10-year fixed VCS crediting period 05/01/2020-04/01/2030, to review and determine the monitored reductions in GHG emissions that have occurred as a result of the project activity. These emission reductions are claimed as Verified Carbon Units (VCU) under the VCS Standard Version 4.4.

The verification was performed on the basis of VCS Standard Version 4.4 for the VCS projects, as well as criteria given to provide for consistent project operations, monitoring and reporting. The verification was conducted by means of document review, follow-up interviews and site inspections, and the resolution of outstanding issues. The verification team identified two CLs, and no CAR or FAR is raised in this monitoring period.

In CTI's opinion, the GHG emission reductions reported for the project in the monitoring report (version 02 dated 24/04/2023) are fairly stated. The GHG emission reductions of the period from 05/01/2020-31/07/2020 within the 10-year fixed VCS crediting period were calculated correctly on the basis of approved methodology: ACM0009, version 07.0, the and registered CDM-PDD (Version 03.0 dated 02/08/2020) and registered VCS PD (version 04 dated 18/08/2022)

CTI does not assume any responsibility towards the issuance and utilization of the VCU's hereby verified and certified. Request for issuance of VCU's shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to CTI and the engagement conditions detailed in this report. CTI cannot be held liable by any party for decisions made or not made based on this report.

Hence, CTI is able to certify that the emission reductions from the "Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman" during this monitoring period from 05/01/2020-31/07/2020 amount to 384,590 tCO₂e.

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1 INTRODUCTION

Vitol SA has commissioned CTI Certification Co., Ltd. (CTI) to carry out the verification and certification of emission reductions reported for the “Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman” (the Project) for the monitoring period 05/01/2020-31/07/2020. This report contains the findings from the verification and includes a verification statement for the verified carbon units.

1.1 Objective

Verification is the periodic independent review and ex-post determination by an accredited verification body of the monitored reductions in GHG emissions that have occurred as a result of the registered VCS project activity during a defined verification period.

A verification statement is the written assurance by a verification body that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and provide a verification statement of emission reductions reported for the “Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman” for the period 05/01/2020-31/07/2020.

1.2 Scope and Criteria

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emissions reduction data is free from material misstatement;
- To verify that reported GHG emissions data is sufficiently supported by evidence.

The criteria of the verification are:

- VCS Program Guide (version 4.3)/45/
- VCS Standard (version 4.4)/44/ and other relevant requirements defined by Verra;
- The approved methodology ACM0009 (version 07.0)/48/ applied by the project.

The verification shall ensure that reported emission reductions are complete and accurate in order to be verified.

1.3 Level of Assurance

The verification report expresses a conclusion with a reasonable level of assurance about whether the reported GHG emissions reduction data is free from material misstatement. As per the para 3.10.1 of the VCS Standard Version 4.4, the project size categorization belongs to 'Large Project' as the expected annual emission reductions is 473,826tCO₂e larger than 300,000 tCO₂e. Therefore, according to the requirement of para 4.1.8 (4) of VCS standard Version 4.4 "The threshold for materiality with respect to the aggregate of errors, omissions and misrepresentations relative to the total reported GHG emission reductions and/or removals shall be five percent for projects and one percent for large projects.", CTI applied a materiality threshold of 1% with respect to omission or misstatements concerning reported quantities of the project activity.

1.4 Summary Description of the Project

Sectoral Scope and Project Type

According to the VCS Program Guide (version 4.3)/45/ and Annex A of the Kyoto Protocol, the project is applicable under the following activity categories:

Sectoral scope 10: Fugitive emissions from fuels (solid, oil and gas)

This project is not a grouped project.

Project Background

The project collects associated gas from Khamilah oil field at Block-27, Wilayat Ibri of Al- Dhahirah Governorate, the Sultanate of Oman. The purpose of the project activity is to deliver recovered gas to the national gas pipeline to meet energy needs of end-users, and also to reduce local air pollution due to flaring. The recovery process comprises three main stages including the separation stage where gas is separated from oil and water, the compression stage where gas is compressed for transportation to gas plant, and the processing stage where gas is processed to fit with conditions of gas pipeline for further transportation to end-users as confirmed by checking the VCS PD approved by Verra /5/, Diagram of the pipeline and gas recovery system /16/ and through ground inspection during site visit. Main equipment necessary for the project activity comprises electric motor-driven reciprocating and screw compressors installed on site, and a network of pipelines for gas transportation which are confirmed by checking the Technical specifications of the equipment /18/ and through physically checking the facilities during site visit. The Khamilah station's approximate coordinates are 56° 14' 38" E and 22° 43' 01" N. The project activity was registered as a CDM project with Ref.10584 on 03/08/2020 and the 10-year fixed crediting period was selected starting on 03/08/2020. The project has been registered as VCS project with VCS ID. 2768 under VCS Standard Version 4.2 with the crediting period start date 05/01/2020 when the commencement of operations activities started as confirmed by checking the Commissioning Report /12/, Daily operation and maintenance records /15/, VCS gap validation report /6/, the previous approved CDM monitoring reports /7/ and verification

reports /8/. The crediting period adopted under VCS is a 10-year fixed crediting period from 05/01/2020-04/01/2030 and the first monitoring period under VCS i.e. this monitoring period is 05/01/2020-31/07/2020.

GHG emission reductions have been applied for CERs under CDM of which total 258,075 tCO₂e have been issued for the monitoring periods 03/08/2020-15/10/2020, 16/10/2020-15/11/2020 and 16/11/2020-15/12/2020.

The total estimated amount of associated gas to be recovered during crediting period is about 2.20 billion m³ while average methane content is estimated at about 78%, and the project is estimated to deliver 473,826 tCO₂e emission reductions annually.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification was performed through means of the following three phases in accordance with the requirement of the registered VCS PD (version 04 dated 18/08/2022) and registered CDM PDD (version 03.0 dated 02/08/2020), the applied methodology, and the VCS Standard, Version 4.4 and other relevant VCS requirements:

- A desk review of the monitoring report and all support documents;
- Follow-up interviews with project stakeholders and site inspection;
- The resolution of outstanding issues and the issuance of the verification report and statement.

The following sections outline each step in more detail.

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. These include:

- The emission reduction calculations and the relevant data records;
- The calibration and maintenance records for the monitoring instruments;
- The management systems to support the project operation and monitoring.

2.2 Document Review

Based on the requirements of competency, experience and qualified sectoral scopes, CTI appointed a verification team in accordance with CTI's internal procedures.

Function	Name	Technical competence	Task Performance*
Team Leader	Tong Dezheng	1.2, 8.1, 10.1	☒ DR ☒ SV ☒ RP ☐ TR

Team Member	Feng Tian	1.2, 8.1, 13.1, 13.2	☒ DR ☒ SV ☒ RP ☐ TR
Local Expert	Halima Hamed Al Hinaai	Regional aspects and applicable rules and requirements of the host country	☒ DR ☒ SV ☐ RP ☐ TR
Technical Reviewer	Lin Wu	1.1, 1.2, 2.1, 3.1, 4.1, 5.1, 5.2, 10.1, 11.1, 11.2, 12.1, 13.1, 13.2	☒ DR ☐ SV ☐ RP ☒ TR

*DR=Document review; SV=Site visit; RP=Reporting; TR=Technical review

In addition to the VER/VCU monitoring report/1/, the registered VCS PD /5/, registered CDM PDD /3/, emission reduction calculation spreadsheet /2/ during this monitoring period, the following documents also were assessed as a part of the verification audit:

- The VCS validation report /6/;
- The CDM validation report /4/;
- The previous CDM/CER monitoring reports /7/and verification reports /8/;
- Baseline and monitoring methodology ACM0009 (version 07.0) applied by the project/48/;
- Relevant decisions, clarifications and guidance from the Verra/44/-/47/; and
- Other information and references relevant to the project activity.

During the desk review, CTI has applied standard auditing techniques to assess the quality of information provided. The following activities were performed:

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures; and

An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

2.3 Interviews

On 11/04/2023, CTI visited the site: Khamilah oil field at Block-27, Wilayat Ibri of Al- Dhahirah Governorate, the Sultanate of Oman to perform on-site assessment. Main topics of the interview cover implementation of the project construction, applicability of selected methodology, implementation of project monitoring, emission reduction calculation, etc.

The key personnel interviewed are summarized in the table below:

Interviewed personnel	Role	Organization	Subject
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Mr. Al Ajmi, Hassan Ali	HSE manager	Occidental of Oman Inc.	Operation of the project activity; Implementation of the monitor plan of the project activity;
Mr. Al Maawali Said	Executive Director	OQ Trading Limited	Data collection and data achievement; Calibration of meters and equipment maintenance; The complaint by local stakeholders; The on-going local stakeholder consultation during the operation of the project activity. Project's sustainable development contributions.
Ms. Al Saadi, Zainab	Director of HSE	Ministry of Energy and Minerals	The impact of the project activity; The complaint by local stakeholders; The on-going local stakeholder consultation during the operation of the project activity; Project's sustainable development contributions.
Ms. Livia Li	Project Manager	Vitol SA	Data collection and ER calculation.

2.4 Site Visits

During the on-site assessment, CTI has applied standard auditing techniques to assess the quality of information provided. The following aspects of the project activity have been verified:

- An assessment of the implementation and operation of the registered project activity is as per the registered VCS PD of the project activity;
- A review of information flows for generating, recording, aggregating and reporting the monitoring parameters; and
- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan;
- A cross-check between information provided in the monitoring report and data from other sources such as plant logbooks and the electricity receipts;
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the registered VCS PD and the selected methodology;
- A review of calculations and assumptions made in determining the GHG data and emission reductions; and
- An identification that quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The data presented in the monitoring report were assessed by review of the detailed project documentation and records of the gas flow meter /19/, electricity meter /21/ and gas composition analysis reports /23/, as well as by interviews with personnel from the project developer Occidental of

Oman Inc. and observation of collection of measurements, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. This has enabled the verification team to assess the accuracy and completeness of reported monitoring results, to verify the correct application of the approved monitoring methodology and the determination of the emission reductions.

In addition, all parameters required by the monitoring methodology ACM0009 (version 07.0), the requirements of the tools used i.e. Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0) and the management system were assessed during the site visit.

2.5 Resolution of Findings

A corrective action request (CAR) shall be raised, where:

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

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

The verification team identified 2 CLs and no CAR in this monitoring period. The CLs were satisfactorily addressed by the project proponents in the updated monitoring report version 02 dated 24/04/2023 (refer to Appendix D for further details).

2.5.1 Forward Action Requests

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

CTI confirmed that there was no FAR identified in previous verifications /8/, and no FAR was raised during this verification.

2.6 Eligibility for Validation Activities

The project has been validated by CTI under the CDM rules and registered as CDM project on 03/08/2020. It has three monitoring periods: 03/08/2020-15/10/2020, 16/10/2020-15/11/2020 and 16/11/2020-15/12/2020 with issued CERs and the verifications are all undertaken by China Certification Center, Inc. (CCCI) as confirmed by checking the UNFCCC website.

The project has been registered as VCS project under VCS standard version 4.2 through gap validation by CTI and this monitoring period 05/01/2020-31/07/2020 is the first monitoring period under VCS after the gap validation.

CTI was accredited in Sectoral Scope 10 on validation and verification and thus is eligible for verification activities on the project. Therefore, the verification undertaken by CTI is in line with the requirement for VVB stipulated in Section 4.1.23 of VCS standard Version 4.4.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project has been registered as a CDM project on 03/08/2020 under the UNFCCC with Ref. 10584. The 10-year fixed CDM crediting period was selected starting on 03/08/2020. By checking the UNFCCC website: <https://cdm.unfccc.int/Projects/DB/CTI1596441167.27/view>, it is confirmed that total 258,075tCO₂e of CERs have been issued for the monitoring periods 03/08/2020-15/10/2020, 16/10/2020-15/11/2020 and 16/11/2020-15/12/2020.

3.2 Methodology Deviations

The validation process /32/ has assessed all factors and issues that constitute the basis for emission reductions from the project according to the applicable CDM methodology ACM0009 (version 07.0) /48/. There was not any methodology deviation applied to this project. Details refer to section 4.1.

3.3 Project Description Deviations

There are no project description deviations applied.

3.4 Grouped Project

The project was not a grouped project; hence this clause is not applicable.

4 VERIFICATION FINDINGS

This section summarizes the findings from the verification of the emission reductions reported for the “Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman” for the monitoring period 05/01/2020-31/07/2020.

4.1 Project Implementation Status

Project Implementation in accordance with the registered project design document

The project is an associated gas recovery and processing project to recovery and utilization of natural gas found in association with oil at Khamilah oil field at Block-27, Wilayat Ibri of Al- Dhahirah Governorate, the Sultanate of Oman. The geographical coordinates are verified by GPS system as 56°14'38" E and 22°43'01" N. It was confirmed by checking the Commissioning report /12/, the Daily operation and maintenance records /15/ that the project were put into operation since 05/01/2020. The total estimated amount of associated gas to be recovered during crediting period is about 2.20 billion m³ while average methane content is estimated at about 78%. Expected annual gross gas volumes to be recovered as part of the project activity are on average 8,106.8 mmscf over its lifetime while on average about 312.4 mmscf of the recovered gas will be used annually in captive power plant on-site to supply electricity to the project activity which are confirmed by checking the registered CDM PDD /3/, the VCS PD approved by Verra /5/, the Letter of Approval issued by the government /11/, the Statement gas and gains /29/ as well as interview and inspection during site visit. The actual implementation of the project during this verification period was verified by checking the Daily operation and maintenance records/15/, Diagram of the pipeline and gas recovery system /16/, nameplates of gas generators /36/ and the equipment purchase contract /36/. It is verified by the interview with the project proponent and the project owner and checking the technical specifications /18/ that the recovery process of the project comprises three main stages: the separation stage, the compression stage and the processing stage, and the main project activities include the installation of compressor packages at Khamilah oil field area at Block-27, including compressor, motor, scrubbers, suction and discharge bottles, coolers, as well as installation of pipeline network. There are five compressors in type of JGK-4 with the capacity of 8 MMSCFD installed and the compressors' lifetime is 10 years for products properly maintained and used according to instructions /18/ and nameplates /17/. The details of the compressors with respect to their installation and capacity have been verified to be consistent with description indicated in the registered CDM PDD. Furthermore, through checking the Statement on gas and gains /29/ and through interview and ground inspection during site visit, CTI verified that the project has a captive power plant which utilizes a small amount of recovered gas to generate the electricity for the on-site electricity consuming facilities. Through checking the Monthly reading records of the electricity meter /21/, it is confirmed that the project consumed 25,173.080MWh electricity which was generated by the captive power plant during this monitoring period.

Via on-site inspection, interviewing with PP and checking the daily operation and maintenance records /19/, it is confirmed that the project captures and deliver recovered gas to the national gas pipeline to meet energy needs of end-users, and also to reduce local air pollution due to flaring. No issues may influence the utilization of associated gas occurred during this monitoring period.

The recovered gas by the project activity is supplied to the national gas pipeline, which can be confirmed by the Gas Sales and Purchase Agreement signed between Occidental of Oman Inc. and The Government of the Sultanate of Oman, represented by the Ministry of Oil & Gas. The volume of recovered

gas is measured continuously by the gas flow meter installed at point F of the project location and is automatically converted to the volume at normal temperature and pressure using the temperature and pressure at the time to measurement as confirmed via on-site inspection and interviewing with PP. All the monitoring system in operation period is consistent with the description in the monitoring plan. The control system at the power plant is automated and assures continuous operation, including monitoring on malfunction of equipment. By checking the daily operation and maintenance records/15/ and via on-site visit, CTI can confirm that no serious malfunction happened and the plant was under a normal operation as expected in this monitoring period.

On-site training for the related procedures including, recording and reporting was verified to be in place/14/ and their implementation was confirmed by interview with the key operators and observing the operation.

CTI confirms that the project implementation is in accordance with the project description contained in registered VCS PD. Furthermore, through visual inspection and document review, it is confirmed that all physical features of the project activity including data collection systems and storage systems have been implemented in accordance with the monitoring plan.

Participation or any rejection under any other GHG programs, any other form of environmental credit or emissions trading program since validation or previous verification

By checking the UNFCCC website: <https://cdm.unfccc.int/Projects/DB/CTI1596441167.27/view>, it is confirmed that the emission reductions within the monitoring period 03/08/2020-15/10/2020, 16/10/2020-15/11/2020 and 16/11/2020-15/12/2020 have been issued as CERs and no other issuance request was submitted under CDM.

Therefore, it is concluded no double counting issuance has occurred for this verified monitoring period 05/01/2020-31/07/2020 under both VCS and CDM programmes. Via the on-site interview, the project proponent confirmed the emission reductions for this verified period are only requested for VCU issuance.

The verification team has also checked other GHGs programs and forms of credit such as exchange platform of GS, EU ETS, IREC and based on the interview with the project proponent, during this monitoring period, it is confirmed that except CDM and VCS scheme:

- No evidence showing that the project has participated or been rejected under any other GHG programs since validation or previous verification.
- There is no observation that the project has received or sought any other emission trading program and form of environmental credit, or has become eligible to do so since validation or previous verification.

The project is completely voluntary CDM and VCS project, not included in an emissions trading program or any other mechanism that includes GHG allowance trading. It is confirmed during the interview with the staff from the Ministry of Energy and Minerals, Oman has not launched any mandatory carbon

emission trading program, thus the net GHG emission reductions generated from the project will not be used for compliance with emission trading programs or to meet binding limits on GHG emissions.

Furthermore, the validation team confirms by checking the Declaration submitted by the project proponent that the net GHG emission reductions generated by the project will not be used for compliance with an emissions trading program and no double counting claiming of the credits.

Thus, it is concluded that the project activity is not involved on other emissions trading programs and other binding limits.

SD contributions resulted by implementation of the project activity

Via the on-site inspection, and through the interviews with the project proponent, staff and official from local government authority, and by checking the evidences provided by the project proponent, the verification team agrees on the following points regarding to the promotion of sustainability development by the project activity:

- *SDG 7, Indicator: Volume of the total recovered gas measured that delivered to the national pipeline for the end-users*

The project delivers the recovered gas to the national pipeline for end-users that otherwise be vented into the atmosphere which increases the Oman's energy security. During this monitoring period, 179,658,380.561Nm³ of recovered gas was delivered to the national pipie. It is verified by checking monthly reading records of the gas flow meter/19/, Monthly sales receipts of the total recovered gas /20/ and via on-site inspection. Which is also corresponding to Oman Vision 2040, Oman government is targeting to increase GDP per unit of energy use to 14.57 or top 40 countries by 2030 and to 74.69 or top 20 countries by 2040 /33/.
- *SDG 8, Indicator: Numbers of job opportunities provided by implementation of the project*

It is verified by interviewing with project proponent, staff and checking Staff information /32/ that the project activity provides 27 job opportunities including 13 for engineering and 14 for operation and maintenance by the end of this monitoring period. Hence, the contribution to this SDG has been confirmed and the provisions for monitoring and reporting this goal is verified as reasonable. This also contributes to one of the Oman's actions for encouraging creation of job opportunities, and promoting knowledge-based labour market/34/.
- *SDG 13, Indicator: Tonnes of greenhouse gas emissions avoided or removed*

As verified by on-site inspection, and via checking the emission reduction calculation sheet/2/, 384,590 tCO₂e GHG emission reductions are generated by the project activity during this monitoring period. This contributes achieve one of Oman's stated sustainable development priorities stated that: they will achieve carbon neutral in 2050 /35/.

Meanwhile, as per MR template v4.2, *"the cumulative impact should be calculated by summing the current project contributions with all impacts included in previously approved VCS monitoring reports or Sustainable Development Contribution Reports"*, since this is the first monitoring period under VCS scheme, the cumulative contributions over the project lifetime are considered as the same as the current project contributions.

In conclusion, Verification Team was able to confirm that the project implementation is in accordance with the project description contained in the VCS PD. All required equipments and procedures are available and implemented in an appropriate manner. All necessary monitoring instruments are installed and operated. The project is completely operational and the same has been confirmed on-site. Neither mistakes nor malfunction on main meters have been observed during this monitoring period.

4.2 Safeguards

4.2.1 No Net Harm

Via on-site inspection and checking the EIA summary and conclusion provided in section D.1 in the registered CDM PDD and based on the local expert of the verification team, it is confirmed that there is no binding national/regional regulation in Oman as to undertake an environmental impact assessment for the project. Since this project was built on an existing oil field, CTI has checked the Environmental permit /10/ issued by Ministry of Environment and Climate Affairs on 03/09/2018 and confirmed that the environmental permit for the oil field has been obtained. The impact caused by the oil field as well as the project activity on the surrounding ecosystem including air quality, noise and solid waste is insignificant.

Also, no potential social economic matter was found during the site visit. It is verified by interviewing with project proponent, staff and checking the Staff list of employees/32/, that the project has contributed to the local employment and improved income levels by providing job opportunities. As stated by the plant staff during the on-site interviews, they have gained knowledge and skills in the regular training organized by the project proponent, so it can be judged that the project has, to some extent, improved the marketability of the employees as well as the possibility of lifelong learning for them.

In conclusion, the implementation of the project activity does not cause any significant negative environmental or socio-economic impacts and is beneficial to the local socio-economic environment.

4.2.2 Local Stakeholder Consultation

By checking the Section E in the registered CDM PDD and interview with PP, it is confirmed that the local stakeholder consultation prior to the operation of the project was carried out during 27/04/2019 to 28/04/2019. Since there is only a small tribe lives nearby and all the men from the tribe have been employed by the project as confirmed by interviewing with project operator and local stakeholders and checking the Staff list /32/ of the project, the members of the tribe were informed orally in an open and transparent manner by the Health and Safety Department of the project operator. The project owner carried out a questionnaire survey on the local stakeholders of which total 20 questionnaires were given out and all of them were returned successfully.

The stakeholder consultation showed that the project receives strong support from the local stakeholders. They all believe the project will promote local economic development and agree with the project development and construction.

For continuous communication with local stakeholders, as verified above, there is only a small tribe lives nearby and all the men from the tribe have been employed by the project, therefore, no formal written invitation for comments was conducted. Through interview with project operator and local residents, it is confirmed that the members of the tribe can raise their concerns and opinions directly to the Health and Safety Department of the Operator on-site. During this monitoring period and no negative comment nor grievance was received by interviewing with the project proponent and local residents through on-site visit.

4.3 AFOLU-Specific Safeguards

For non-AFOLU projects, this section is not required.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Compliance of monitoring plan with monitoring methodology

CTI is able to confirm that the monitoring plan contained in the registered CDM-PDD /3/ is in accordance with the approved methodology applied by the project activity, i.e. ACM0009 (version 07.0).

Compliance of monitoring with the monitoring plan

CTI confirms that the parameters stated in the monitoring plan are monitored and reported appropriately. Parameters required to be monitored by the monitoring plan as per the monitoring methodology ACM0009 (version 07.0) and the management system was assessed during the site visit. The monitoring report lists each parameter required by the monitoring plan and the information flow (i.e. from data generation, recording, aggregation, calculation and reporting) for each parameter is provided. The information flow for each parameter is further verified in the following sections.

Data and Parameters Available at Validation

“Data and parameters available at validation” in the MR are checked against the registered CDM-PDD. The parameters fixed ex-ante are as follows:

- $EF_{CO_2, \text{Methane}}$ is the CO_2 emission factor for methane which was calculated according to the procedures and data presented in ISO 6976 /43/ and was determined ex-ante at validation stage as 54.834 t CO_2 /TJ;
- $TDL_{j,y}$ is the average technical transmission and distribution losses for providing electricity to source j which was determined ex-ante as 0 at validation stage since the electricity consumption situation for the project is from an off-grid on-site captive power plant as confirmed through interview and ground inspection during site visit ;
- $EF_{EL,j,y}$ is the emission factor for electricity generation for source j which was determined ex-ante as 1.3 t CO_2 /MWh at validation stage that the conservative default value is applied since the electricity consumption source is a project electricity consumption source according to CDM TOOL05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0)/49/;

CTI verified and confirms that the above ex-ante parameters used in the monitoring report is in compliance with the registered CDM-PDD.

Data and Parameters Monitored

CTI conducted document review and performed on-site assessment with project operator to:

- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- Determine whether the operational and data collection procedures are implemented in accordance with the registered monitoring plan;
- A cross-check between information provided in the monitoring report and data from other sources such as plant logbooks and sales receipts;
- An identification that quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

According to the approved revised monitoring plan, the parameters to be monitored are as below:

$V_{F,y}$	Volume of the total recovered gas measured at point F in methodology AM0009 version 07.0 Figure 2 (Nm ³)
$NCV_{RG,F,y}$	Average net calorific value of recovered gas at point F in methodology AM0009 version 07.0 Figure 2 (TJ/Nm ³)
$EC_{PJ,j,y}$	Quantity of electricity consumed by the project electricity consumption source j (MWh)

Monitored parameter $V_{F,y}$

By site inspection and checking monitoring plan and previous verification reports, CTI confirmed that:

Volume of the recovered gas is continuously measured by the gas flow meter with accuracy of 0.04% installed at the point F at project location and is recorded monthly which is in line with the monitoring plan contained in the registered CDM-PDD /3/. During the monitoring practice, the recorded recovered gas volume is automatically converted to the volume at normal temperature and pressure using the temperature and pressure at the time to measurement, namely 101.325kpa, 25°C /31/, which follows ISO 6976 /43/.

The verification team had on-site checked the location of the flow meter against the Diagram of the pipeline and gas recovery system /16/ and confirmed that the gas flow meter is installed at point F of the project site, where associated gas sampling point is nearby which is consistent and installed in accordance with the monitoring plan.

By checking the Daily operation and maintenance records /15/, calibration reports of the gas flow meter /25/ and via on-site visit, it is confirmed that the flow meter was working well and the calibration frequency is once every year during this monitoring period which is in line with the monitoring plan. Via the on-site interview and by checking the Daily operation and maintenance records/15/, monthly reading records of the flow meter /19/ and monthly sales receipts of the total recovered gas /20/ issued by the government of the Sultanate of Oman, it is confirmed by the verification team that the lead operator is responsible for monitoring and the data is continuously monitored and monthly recorded which is in line with the monitoring plan. The commercial data i.e. monthly sales receipts have been used for cross-checking with the monthly reading records, the most conservative values were used for the monitoring report and ERs calculation spreadsheet. Furthermore, the monitored data /19/ is consistent with the values on the sales receipts /20/ and the values used for ER calculation and displayed in the MR are all consistent with the monitoring records.

Monitored parameter $NCV_{RG,F,y}$

$NCV_{RG,F,y}$ is the average net calorific value of recovered gas and is calculate based on the monthly on-site gas sampling and compositional analysis by the nearby lab with the chromatography gas analyzer.

By checking the gas composition analysis reports /23/ for each month i.e. January to July during this monitoring period, the relevant standards /38/-/42/ and interview with project operator, it is confirmed that sampling is taken monthly in accordance with ISO 10715 /42/and gas compositional analysis are undertaken monthly in line with ISO 6974 /39/ under the responsibility of the on-site lab with the chromatography gas analyzer near the project site. The chromatography gas analyzer is calibrated every 6 months which is confirmed by checking the Calibration reports /27/ and the calibration frequency is in line with the requirement of ISO/IEC 17025/42/. And then based on the molar composition, Net Calorific Value on a volumetric basis is determined for each sample in line with ISO 6976 for a combustion reference temperature of 25°C and the same metering reference condition used for parameter $V_{F,y}$. NCV is calculated as the sum of molar fraction of each individual component in the natural gas sample multiplied by net calorific value of each individual component in the natural gas sample as referenced in ISO 6976 standard for a combustion reference temperature of 25°C.

According to the monitoring plan in the registered CDM-PDD, the average NCV is calculated as the arithmetic average of NCVs for the samples taken during the monitoring period. This is in line with the applied methodology. By reviewing the ER calculation sheet /2/, and the monthly gas composition analysis report of the sampled associated gas/23/, the verification team confirmed that the average NCV calculations in the spreadsheet are correct and traceable and correctly presented in the monitoring report.

Monitored parameter $EC_{PJ,j,y}$

By site inspection and checking monitoring plan and previous verification reports, CTI confirmed that:

Quantity of electricity consumed by the project activity source j is continuously measured by the electricity meter with an accuracy of 0.5S and monthly recorded. The verification team had on-site checked the location of the electricity meter against the Diagram of the pipeline and gas recovery system /16/ and confirmed that the electricity meter is installed at point F of the project site which is consistent and installed in accordance with the monitoring plan.

By checking the Daily operation and maintenance records /15/, calibration reports of the electricity meter /26/ and via on-site visit, it is confirmed that the electricity meter was working well and the calibration frequency is once every year during this monitoring period which is in line with the monitoring plan. Via the on-site interview and by checking the Daily operation and maintenance records/15/, monthly reading records of the electricity meter /21/ and Confirmation of monthly on-site consumed electricity /22/ issued by the government of the Sultanate of Oman, it is confirmed by the verification team that the lead operator is responsible for monitoring and the electricity data is continuously monitored and monthly recorded which is in line with the monitoring plan. The commercial data i.e. Confirmation of monthly on-site consumed electricity have been used for cross-checking with the monthly reading records, the most conservative values were used for the monitoring report and ERs calculation spreadsheet. Furthermore, the monitored electricity data/21/is consistent with the values on the Confirmation letter of monthly on-site consumed electricity /22/ and the values used for ER calculation and displayed in the MR are all consistent with the monitoring records.

Monitoring equipment and calibration

The documents review was carried out. Particular attention was paid to the frequency of measurements, the quality of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the registered CDM-PDD and the methodology ACM0009 (version 07.0) and corresponding tool(s), and the quality assurance and quality control procedures.

Through physically checking the monitoring equipment's locations and nameplates during site visit, CTI confirms that the gas flow meter with accuracy of 0.04% and electricity meter with accuracy of 0.5s are installed at the point F at project location which are in line with the monitoring plan.

All monitoring equipments have been calibrated in line with the monitoring plan and the national/industrial standards covering this monitoring period. The relevant information of the calibration is listed as below:

Monitoring equipment type	Serial NO.	Accuracy	Calibration frequency	Calibration date	Validity date
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Gas flow meter	0500971	0.04%	Annually	02/01/2020	01/01/2021
Electricity meter	P13C8095	0.5S	Annually	02/01/2020	01/01/2021

Calibration reports for the monitoring metering /25/-/27/ have been verified by the verification team. The actual accuracy for gas flow meter for measurement of $V_{F,y}$ is verified to be 0.04%. The actual accuracy for electricity meter for monitoring $EC_{PJ,j,y}$ is verified to be 0.5S. The accuracy of all monitoring equipments is in line with the requirement in the monitoring plan and the relevant standards. The calibration frequency of gas flow meter and electricity meter is annual during this monitoring period which is consistent with the monitoring plan. The calibration frequency of the chromatography gas analyzer is every 6 months and during this monitoring period, the chromatography gas analyzer has been calibrated twice on 24/10/2019 and 24/04/2020 with validity till 23/04/2020 and 23/10/2020 respectively which is in accordance with the requirement of ISO/IEC 17025/42/.

Based on the site visit and by checking the calibration reports, CTI confirms that:

- All monitoring equipments have been installed in accordance with the monitoring plan;
- The equipments' accuracy is in line with the requirement of the monitoring plan;
- The calibration frequency of all monitoring equipments is in line with the monitoring plan and technical standard /42/ as required by VCS standard. And the calibrations are verified to be valid for the whole reporting period.

Data management and control

Occidental of Oman Inc., is responsible for operation and routine maintenance of power plant under the project activity. The quality assurance and quality control procedures have been addressed in the project management and monitoring manual /13/, including the organization structure with the responsibilities, personnel competencies, records of training for on-site staff /14/, monitoring procedures and monitoring management. By interviewing with the staff and checking Daily operation and maintenance records /15/, Monthly reading records of the gas flow meters /19/, Monthly reading records of the electricity meter /21/ and Monthly gas composition analysis reports /23/ during on-site visit, it can be confirmed that the monitoring management system is implemented following the project management and monitoring manual.

All monitoring devices have been calibrated and maintained periodically to ensure the accuracy of measurement. Calibration records of instruments used in measurements were made available during the verification visit and found to be valid for the entire period of the verification. Competence and training records of in-plant personnel engaged in measurement of plant parameters were presented during verification and found to be in order.

As the above and document review, verification team considers that the project activity operated properly in the way complying with the implementation plan and monitoring plan and the monitoring was performed in a transparent and comprehensive manner during this monitoring period.

Emission reduction calculation

CTI confirms that appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed, and the assumptions, emission factors and default values that are applied in the calculation have been justified.

According to the applied methodology, the emission reductions are determined as the difference between the baseline emissions, project emissions and leakage:

$$ER_y = BE_y - PE_y - LE_y$$

Baseline emissions

As per registered CDM-PDD and the applied methodology ACM0009 Version 07.0, baseline emissions are determined as follows:

$$BE_y = V_{F,y} \times NCV_{RG,F,y} \times EF_{CO_2,Methane}$$

Where,

BE_y = Baseline emissions in year y, (tCO₂e)

$V_{F,y}$ = Volume of total recovered gas measured at point F, in year y, (10⁴Nm³)

$NCV_{RG,F,y}$ = Average net calorific value of recovered gas at point F in year y, (TJ/Nm³)

$EF_{CO_2,Methane}$ = CO₂ emission factor for methane (tCO₂/TJ)

The verification team has checked the monthly records of $V_{F,y}$ /19/ against Monthly sales receipts of the total recovered gas /20/, and confirmed the values of $V_{F,y}$ used in the ER calculation spreadsheet is complete and correct.

As per applied methodology ACM0009, version 07.0 /48/ and the registered CDM PDD /3/, NCV is calculated as the sum of molar fraction of each individual component in the natural gas sample multiplied by net calorific value of each individual component in the natural gas sample as referenced in ISO 6976 standard for a combustion reference temperature of 25 °C. The average NCV during the period y is defined as the arithmetic average of NCVs for the samples taken during the same period.

By checking the gas composition analysis reports /23/ for each month i.e. January to July during this monitoring period and the calculation process of $NCV_{RG,F,y}$ in ER calculation spreadsheet, CTI confirms that the monitored data of gas composition, the calculation of NCVs for the monthly recovered gas samples and the average $NCV_{RG,F,y}$ during this monitoring period is completed and correct.

And as verified above, the $EF_{CO_2,Methane}$ is 54.834 tCO₂/TJ which is determined ex-ante at validation stage. Furthermore, by checking data input and calculation process for the baseline emissions in the ER calculation spreadsheet, it is confirmed that the baseline emissions are correctly calculated. Therefore, the verified values of $V_{F,y}$ and $NCV_{RG,F,y}$ as well as the calculation results of the baseline

emissions are summarized in the table below:

Monitoring period	$V_{F,y}$	$NCV_{RG,F,y}$	$EF_{CO_2,Methane}$	BE_y
	Volume of total recovered gas (Nm ³)	Net calorific value of recovered gas (TJ/Nm ³)	CO ₂ emission factor for methane (tCO ₂ e/TJ)	Baseline emissions (tCO ₂ e)
05/01/2020-31/01/2020	23,485,792.630	0.00004236	54.834	54,554
01/02/2020-29/02/2020	25,263,245.532			58,682
01/03/2020-31/03/2020	26,092,899.076			60,610
01/04/2020-30/04/2020	25,838,679.304			60,019
01/05/2020-31/05/2020	26,528,603.811			61,622
01/06/2020-30/06/2020	25,963,029.333			60,308
01/07/2020-31/07/2020	26,486,130.875			61,523
Total	179,658,380.561	-	-	417,318

Project emissions

As per registered CDM-PDD and applied methodology ACM0009 Version 07.0, project emissions are determined as follows:

$$PE_y = PE_{CO_2,fossilfuels,y} + PE_{CO_2,elec,y}$$

Where,

PE_y = Project emissions in year y, (tCO₂e)

$PE_{CO_2,fossilfuels,y}$ = CO₂ emissions due to consumption of fossil fuels for the recovery, pre-treatment, transportation, and if applicable, compression of the recovered gas up to the point F in year y (tCO₂e)

$PE_{CO_2,elec,y}$ = CO₂ emissions due to the use of electricity for recovery, pre-treatment, transportation and if applicable, compression of the recovered gas up to the point F in year y (tCO₂e)

According to CDM-PDD section B.6.1 and via site visit, it is confirmed that there is no direct consumption of fossil fuels as part of the Project activity therefore above equation can be simplified as:

$$PE_y = PE_{CO_2,elec,y} = PE_{EC,y} = \sum_j EC_{PJ,j,y} \times EF_{EL,j,y} \times (1+TDL_{j,y})$$

Where,

$PE_{EC,y}$ = Project emissions from electricity consumption in year y (tCO₂ / yr)

- $EC_{PJ,j,y}$ = Quantity of electricity consumed by the project electricity consumption source j in year y (MWh/yr)
 $EF_{EF,j,y}$ = Emission factor for electricity generation for source j in year y (tCO₂/MWh)
 $TDL_{j,y}$ = Average technical transmission and distribution losses for providing electricity to source j in year y
j = Sources of electricity consumption in the project

By checking the monthly records of $EC_{PJ,j,y}$ /21/ against Confirmation of monthly on-site consumed electricity issued by The government of the Sultanate of Oman/22/, it is confirmed the values of $EC_{PJ,j,y}$ used in the ER calculation spreadsheet is complete and correct.

As verified above, $EF_{EF,j,y}$ is confirmed to be 1.3tCO₂/MWh while $TDL_{j,y}$ is confirmed to be 0% which were the ex-ante parameters determined as validation stage. Furthermore, by checking the data input and calculation process for the project emissions in the ER calculation spreadsheet, it is confirmed that the project emissions are correctly calculated. Therefore, the verified values of $EC_{PJ,j,y}$ as well as the calculation results of the project emissions are summarized in the table below:

Period	$EC_{PJ,j,y}$	$EF_{EF,j,y}$	$TDL_{j,y}$	$PE_y = PE_{CO2,elec,y} = PE_{EC,y} = \sum_j EC_{PJ,j,y} \times EF_{EL,j,y} \times (1+TDL_{j,y})$
	MWh	tCO ₂ e/MWh	%	tCO ₂ e
05/01/2020-31/01/2020	3,418.880	1.3	0	4,445
01/02/2020-29/02/2020	3,439.200			4,471
01/03/2020-31/03/2020	3,641.320			4,734
01/04/2020-30/04/2020	3,594.800			4,674
01/05/2020-31/05/2020	3,722.840			4,840
01/06/2020-30/06/2020	3,618.920			4,705
01/07/2020-31/07/2020	3,737.120			4,859
Total	25,173.080	-	-	32,728

Leakages

Leakage does not need to be accounted for this project as per the registered CDM-PDD and applied methodology ACM0009 (version 07.0).

Emission reductions

The emission reductions for this monitoring period were calculated as:

Monitoring period	GHG emission reductions or removals (tCO ₂ e)
Year 2020 (05/01/2020-31/07/2020)	384,590
Total ERs claimed	384,590

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The assessment of each parameter related to calculate the GHG emission reductions is justified in Sections 4.1 and 4.4 above. Via the on-site inspection and desk review, the verification team verified the supporting evidence provided by the project proponent as listed in Appendix 3 used to determine the GHG emission reductions

For each reported data, the evidence is provided and verified as sufficient and quality is appropriate. Also, the cross-checks have been performed on the reported data with different source of evidence. The information flow from data generation and aggregation, to recording, calculation and final transposition into the monitoring report has been assessed by VVB in Section 4.4. Moreover, the calibration is verified as stated in Section 4.1 via on-site inspection with evidences to confirm the meters' location, accuracy and calibration frequency are in line with requirement of the monitoring plan.

Therefore, it is concluded that the evidence provided are verified as sufficient and quality is appropriate and thus the evidence can be used to determine the GHG emission reductions and removals for this monitoring period.

4.6 Non-Permanence Risk Analysis

The project is not AFOLU project, and thus non-permanence risk analysis is not applicable for the project.

5 VERIFICATION OPINION

CTI Certification Co., Ltd. (CTI) has performed the verification of the emission reductions that have been reported for the project activity “Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman” in China (VCS Project ID: 2768) for the period 05/01/2020-31/07/2020.

The verification is based on the baseline and monitoring methodology ACM0009 (version 07.0), the VCS PD. The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification and certification report.

The project proponents are responsible for the collection, calculation and determination of the GHG data in accordance with the monitoring plan and the reporting of GHG emission reductions on the basis set out within the project monitoring report.

Our verification and validation approach was based on the requirements as defined under the applicable VCS Standard Version 4.4 and relevant UNFCCC requirements. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is implemented and operated as per the registered VCS PD ;
- the monitoring plan is as per the applied methodology;
- the monitoring complies with the monitoring plan;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard Version 4.4 and CDM requirements;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements;

It is CTI’s responsibility to provide an independent verification statement on the reported GHG emission reductions for the project. Based on an understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these, CTI planned and performed our work to obtain the information and explanations that we considered necessary to provide reasonable assurance that reported GHG emission reductions are fairly stated.

CTI does not assume any responsibility towards the issuance and utilization of the VCUs hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to CTI and the engagement conditions detailed in this report. CTI cannot be held liable by any party for decisions made or not made based on this report.

In CTI's opinion the GHG emissions reductions of the "Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman" for the period 05/01/2020-31/07/2020 are fairly stated in the monitoring report (version 02 dated 24/04/2023). The GHG emission reductions were calculated correctly on the basis of the approved methodology ACM0009 (version 07.0) and the monitoring plan contained in the registered VCS PD.

CTI can confirm that the GHG emission reductions are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, CTI confirms the following statement:

Verification period: From 05-Janurary-2020 to 31-July-2020

Verified GHG emission reductions and removals in the above verification period, broken down by calendar year:

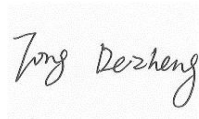
Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2020				
(05/01/2020-31/07/2020)	417,318	32,728	0	384,590
Total	417,318	32,728	0	384,590

Comparison between the estimated ex-ante GHG emission reductions and removals and the actual achieved emission reductions and removals for this monitoring period:

Year	Ex-ante emissions reductions /removals (tCO ₂ e)	Achieved emissions reductions /removals (tCO ₂ e)	Percent difference	Justification for the difference
Year 2020 (05-Janurary-2020–31-July-2020)	404,377 ¹	384,590	-4.89%	By checking the Daily operation and maintenance records /15/, interviewing with on-site staff, it is confirmed that the project was operating smoothly during this monitoring period, the actual
Total	404,377	384,590	-4.89%	

¹ According to the registered VCS PD, the estimated ER in 2020 is 703,773 tonnes for 05/01/2020 to 31/12/2020 which covers 362 days. This monitoring period: 05/01/2020-31/07/2020 covers 208 days. Therefore, the ERs estimated ex ante for this monitoring period is calculated as 703,773/362*208=404,377 tonnes.

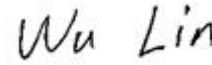
				achieved ERs are only 4.89% lower than the estimation which is not a significant decrease. Thus, CTI confirms that the actual achieved ERs is reasonable.
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Mr. Tong Dezheng

Team Leader

22-May-2022



Ms. Lin Wu

Technical Reviewer

22-May-2022

APPENDIX A: ABBREVIATIONS

Abbreviation	Full text
CAR	Corrective Action Request
CCER	Chinese Certified Emission Reduction
CER	Certified Emission Reduction(s)
CL	Clarification request
CMM	Coal mine methane
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CTI	CTI Certification Co., Ltd
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
ETS	Emissions Trading Scheme
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
IREC	International Renewable Energy Certificates
MR	Monitoring Report
NMHC	Non methane hydrocarbons
PD	Project Description
PP	Project Proponent
SN	Serial Number
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit

APPENDIX B: REFERENCES

No.	Reference
/1/	Vitol SA: VER/VCU Monitoring Report for Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman, version 01 dated 23/02/2023, version 02 dated 24/04/2023
/2/	Vitol SA: Emission reduction calculation spreadsheet for Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman, version 02 dated 24/04/2023
/3/	Registered CDM-PDD (Version 03.0 dated 02/08/2020)
/4/	CDM validation report (version 03 dated 03/08/2020)
/5/	Registered VCS PD (Gap) (version 04, dated 18/08/2022)
/6/	VCS validation report (Gap) (Version 01.1 dated 18/08/2022)
/7/	CDM Monitoring reports for previous monitoring periods: 03/08/2020-15/10/2020, 16/10/2020-15/11/2020 and 16/11/2020-15/12/2020
/8/	CDM Verification reports for previous monitoring periods: 03/08/2020-15/10/2020, 16/10/2020-15/11/2020 and 16/11/2020-15/12/2020
/9/	The Government of the Sultanate of Oman, represented by the Ministry of Oil & Gas and Occidental of Oman Inc.: Gas Sales and Purchase Agreement
/10/	Ministry of Environment and Climate Affairs: Environmental permit dated 03/09/2018
/11/	Sultanate of Oman Ministry of Environment and Climate Affairs: Letter of Approval from the Host Country
/12/	Occidental of Oman Inc.: Construction permit and Commissioning report
/13/	Occidental of Oman Inc.: VER monitoring manual and management procedure.
/14/	Occidental of Oman Inc.: Records of training for on-site staff.
/15/	Occidental of Oman Inc.: Daily operation and maintenance records.
/16/	Occidental of Oman Inc.: Diagram of the pipeline and gas recovery system
/17/	Occidental of Oman Inc.: Nameplates of the compressors
/18/	Technical specifications of the equipment from Occidental of Oman, Inc., December, 2019

/19/	Occidental of Oman Inc.: Monthly reading records of the gas flow meters covering this monitoring period
/20/	The government of the Sultanate of Oman: Monthly sales receipts of the total recovered gas covering this monitoring period
/21/	Occidental of Oman Inc.: Monthly reading records of the electricity meter covering this monitoring period
/22/	The government of the Sultanate of Oman: Confirmation of monthly on-site consumed electricity covering this monitoring period
/23/	Occidental of Oman Inc.: Monthly gas composition analysis reports of the sampled associated gas
/24/	Questionnaires filled by local stakeholders
/25/	Calibration reports for gas flow meter
/26/	Calibration reports for electricity meter
/27/	Calibration reports for the chromatography gas analyzer
/28/	Occidental of Oman Inc.: Oil and gas production statement
/29/	Occidental of Oman Inc.: Statement gas and gains dated 05/03/2019
/30/	Environmental Permit of Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman issued by Al Dhahirah Wilayat, Ibri Government, dated 03/09/2018
/31/	Honeywell: Run meter gas status verification report
/32/	Ministry of Energy and Minerals: Staff information
/33/	Oman Vision 2040: https://climate-laws.org/geographies/oman/climate_targets/Economy-wide
/34/	The Omani National Employment Programme (NEP) is all set to create a labour market filled with nationals who are qualified and skilled in their respective fields: https://www.zawya.com/en/economy/omans-national-employment-programme-to-create-a-knowledge-based-labour-market-f1zwy8s6
/35/	Oman has signed a royal decree approving the country's pledge to reach net zero emissions by 2050: https://www.argusmedia.com/en/news/2379719-oman-pledges-net-zero-emissions-by-2050
/36/	OQ Trading Limited: Statement on no double counting
/37/	Volume 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories

/38/	ISO 10715:1997: Natural gas - Sampling guidelines
/39/	ISO 6974: 2012: Natural gas - Determination of composition and associated uncertainty by gas chromatography
/40/	ISO/IEC TS 17023:2013 [IAF] Conformity assessment - Guidelines for determining the duration of management system certification audits
/41/	ISO 6141:2015: Gas analysis - Contents of certificates for calibration gas mixtures
/42/	ISO/IEC 17025:2017: General requirements for the competence of testing and calibration laboratories
/43/	ISO6976: Natural gas-Calculation of calorific values, density, relative density and Wobbe indices from composition
/44/	Verified Carbon Standard: VCS Standard, Version 4.4
/45/	Verified Carbon Standard: VCS Program Guide, version 4.3
/46/	Verified Carbon Standard: VCS Sectoral Scopes http://v-c-s.org/node/448
/47/	Verified Carbon Standard: Registration and Issuance Process, version 4.3
/48/	UNFCCC EB: Approved methodology: ACM0009 "Recovery and utilization of gas from oil fields that would otherwise be flared or vented" (version 07.0)
/49/	CDM TOOL05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0)
/50/	UNFCCC, http://cdm.unfccc.int
/51/	Gold Standard, http://www.goldstandard.org/

APPENDIX C: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS



CERTIFICATE OF APPOINTMENT

Mr. Dezheng TONG

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	✓	✓	✓	✓	-	✓

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 8: Mining/mineral production	TA 8.1: Mining/mineral production
SS 10: Fugitive emissions from fuels (solid, oil and gas)	TA 10.1: Fugitive emissions from oil and gas

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN

Wu Lin

Technical Competent Manager

Shenzhen, 01/07/2022



CERTIFICATE OF APPOINTMENT

Mr. Tian FENG

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	-	-

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 8: Mining/mineral production	TA 8.1: Mining/mineral production
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by: *Wu Lin*

Wu LIN

Technical Competent Manager

Shenzhen, 25/10/2022

Ms. Halima Hamed Al Hinaai

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification
Local Expert for regional aspects and applicable rules and requirements of the host country

Appointed Geography Area As Local Expert
Oman

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN

Technical Competent Manager

Shenzhen, 10/12/2021



CERTIFICATE OF APPOINTMENT

Mr. Wu LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	✓	✓	✓	✓	✓	✓

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation
	TA 1.2: Energy generation from renewable energy sources
SS 2: Energy distribution	TA 2.1: Electricity distribution
SS 3: Energy demand	TA 3.1: Energy demand
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 10: Fugitive emissions from fuels (solid, oil and gas)	TA 10.1: Fugitive emissions from oil and gas
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Lu ZHOU

General Manager

Shenzhen, 01/01/2021



APPENDIX D: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS

Table 1: Corrective Action Requests

CAR ID	Corrective Action Request	Response by Project Proponent	VVB Assessment
NA	NA	NA	NA

Table 2: Clarification Requests

CL ID	Clarification Request	Response by Project Proponent	VVB Assessment
CL 01	As per MR template v4.2 requirement, PP is requested to supplement the relevant implementation dates including dates of construction and commissioning in Section 1.1 of the MR, thus, CL01 was raised to clarify.	The relevant implementation date, i.e. date of construction and commissioning have been included in Section 1.1 of the updated MR.	OK. It has been revised and verified by CTI through checking the Construction permit and Commissioning report /12/. Therefore, CL 01 is closed.

CL ID	Clarification Request	Response by Project Proponent	Verification Team Assessment
CL 02	The project has been registered under other GHG program i.e., CDM, as per MR template v4.2 requirement, PP is requested to supplement the details of any GHG credits claimed under such programs, thus, CL02 was raised to clarify.	The detail of the GHG credits under CDM has been displayed in Section 1.9 of the updated MR.	OK. It has been revised and verified by CTI by checking updated MR and the registration interface of the project on UNFCCC. Therefore, CL 02 is closed.

Table 3: Forward Action Requests

FAR ID	Forward Action Request	Response by Project Proponent	Verification Team Assessment
NA	NA	NA	NA