



**Verified Carbon  
Standard**

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

Document Prepared by Vitol SA

|                      |                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Project Title</b> | Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman |
| <b>Version</b>       | 02                                                                                                                      |
| <b>Date of Issue</b> | 09/03/2021                                                                                                              |
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# 1 PROJECT DETAILS

## 1.1 Summary Description of the Project

Associated Gas Recovery and Utilization at Khamilah oil field area at Block-27 in Wilayat Ibri of the Sultanate of Oman (hereafter referred as “the proposed project”) consists of the 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 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 recovered associated gas by the project will be collected and processed at Khamilah station. 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. Main equipment necessary for the proposed project activity comprises electric motor-driven reciprocating and screw compressors installed on site, and a network of pipelines for gas transportation.

The scenario existing prior to the start of the implementation of the proposed project activity is flaring of associated gas at the oil production site, the operation of the existing oil and gas infrastructure without processing of any recovered associated gas, and the use of gas-lift gas from the same source and quantity as under the project activity in the gas-lift system. The baseline scenario is the same as the scenario existing prior to the start of implementation of the proposed project activity. The project reduces greenhouse gases emissions as the utilization of recovered gas displaces the use of non-associated gas or other fossil sources at end-users.

The project boundary includes:

- The project oil reservoir and oil wells at Khamilah oil field area at Block-27, where the associated gas is collected;
- The site where the associated gas was flared in the absence of the project activity;
- The gas recovery, pre-treatment, processing and transportation infrastructures, and compressors;
- The source of gas-lift gas.

The total estimated amount of associated gas to be recovered during crediting period is about 2.01 billion m<sup>3</sup> while average methane content is estimated at about 78%. The project is expected to have an annual average of 473,826 tCO<sub>2</sub> emission reduction over the crediting period. The estimated emission reductions are 4,738,260 tCO<sub>2</sub> over a fixed 10-year crediting period.

The proposed project activity will contribute to the Oman national and local sustainable development and also generates the following benefits:

- Benefit the local air conditions by reducing the air pollution due to flaring.
- Efficient use of natural resources due to the utilization of the gas that would be flared in the absence of the project.
- New job opportunities due to the construction activities.
- Reduce the combustion of fossil fuels at end-users that are produced from non-associated gas or other fossil sources.

## 1.2 Sectoral Scope and Project Type

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

The project is not a grouped project.

## 1.3 Project Eligibility

The project belongs to Scope 10: Fugitive emissions from fuels (solid, oil and gas), and does not fall into the excluded project activities list of VCS standard version 4. The project has been registered as a CDM project (CDM PA10584), and meet with the criteria set out for clarification 1 and clarification 3 by Errata & Clarifications, VCS Standard, v4.0.

## 1.4 Project Design

n.a.

## 1.5 Project Proponent

|                          |                                               |
|--------------------------|-----------------------------------------------|
| <b>Organization name</b> | OQ Trading Limited                            |
| <b>Contact person</b>    | Mr. Said Al Maawali                           |
| <b>Title</b>             | Executive Director Middle East                |
| <b>Address</b>           | Muscat Grand Mall, PO Box 241, PC 118, Muscat |
| <b>Telephone</b>         | +968 9137 0000                                |
| <b>Email</b>             | said.almaawali@oq.com                         |

## 1.6 Other Entities Involved in the Project

|                            |                                               |
|----------------------------|-----------------------------------------------|
| <b>Organization name</b>   | Vitol SA                                      |
| <b>Role in the project</b> | VCS account manager                           |
| <b>Contact person</b>      | Mr. Michael Ivanovitch                        |
| <b>Title</b>               | VCS account manager                           |
| <b>Address</b>             | Place des Bergues 3, 1201 Geneva, Switzerland |
| <b>Telephone</b>           | +41 22 322 1111                               |
| <b>Email</b>               | MXI@vitol.com                                 |

## 1.7 Ownership

The Government of the Sultanate of Oman, represented by the Ministry of Oil & Gas is the project owner, and OQ Trading Limited is the buyer of the carbon credits. The project owner, the Government of the Sultanate of Oman, represented by the Ministry of Oil & Gas could be evidenced by the approval letter, and the CDM LOA. Below is the chain of the ownership of carbon credits, which could be supported by relevant documents and records.

| Date       | Events                                                                                                                                                                                           |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nov 2010   | ERPA was signed between the Government of the Sultanate of Oman, represented by the Ministry of Oil & Gas (seller) and Oman Trading International (Buyer)                                        |
| 13/04/2020 | Oman Trading International Limited was officially changed to OQ Trading Limited                                                                                                                  |
| Aug 2020   | Name of the Ministry of Oil and Gas was amended to the Ministry of Energy and Minerals                                                                                                           |
| Oct 2021   | Amendment Agreement signed between OQ Trading Limited and The Government of the Sultanate of Oman, represented by the Ministry of Energy and Minerals                                            |
| 24/11/2021 | Communications agreement signed between OQ Trading Limited and Vitol SA, Vitol SA is acting on behalf OQ Trading Limited, to manage the project at Verra and receiving the credits to be issued. |

## 1.8 Project Start Date

The project started operation on 05/01/2020, thus the project start date is 05/01/2020.

## 1.9 Project Crediting Period

05/01/2020 – 04/01/2030, the crediting period is 10 years from the project start date.

## 1.10 Project Scale and Estimated GHG Emission Reductions or Removals

| Project Scale |   |
|---------------|---|
| Project       |   |
| Large project | √ |

The project is expected to have an annual average of 473,826 tCO<sub>2</sub>e emission reduction over the crediting period. The estimated emission reductions are 4,738,260 tCO<sub>2</sub>e over a fixed 10-year crediting period.

| Year                                   | Estimated GHG emission reductions or removals (tCO <sub>2</sub> e) |
|----------------------------------------|--------------------------------------------------------------------|
| 05/01/2020-31/12/2020                  | 703,773                                                            |
| 01/01/2021-31/12/2021                  | 711,550                                                            |
| 01/01/2022-31/12/2022                  | 690,203                                                            |
| 01/01/2023-31/12/2023                  | 690,203                                                            |
| 01/01/2024-31/12/2024                  | 533,662                                                            |
| 01/01/2025-31/12/2025                  | 426,930                                                            |
| 01/01/2026-31/12/2026                  | 355,775                                                            |
| 01/01/2027-31/12/2027                  | 284,620                                                            |
| 01/01/2028-31/12/2028                  | 177,887                                                            |
| 01/01/2029-31/12/2029                  | 163,656                                                            |
| 01/01/2030-04/01/2030                  | 0                                                                  |
| <b>Total estimated ERs</b>             | <b>4,738,260</b>                                                   |
| <b>Total number of crediting years</b> | <b>10 years</b>                                                    |
| <b>Average annual ERs</b>              | <b>473,826</b>                                                     |

## 1.11 Description of the Project Activity

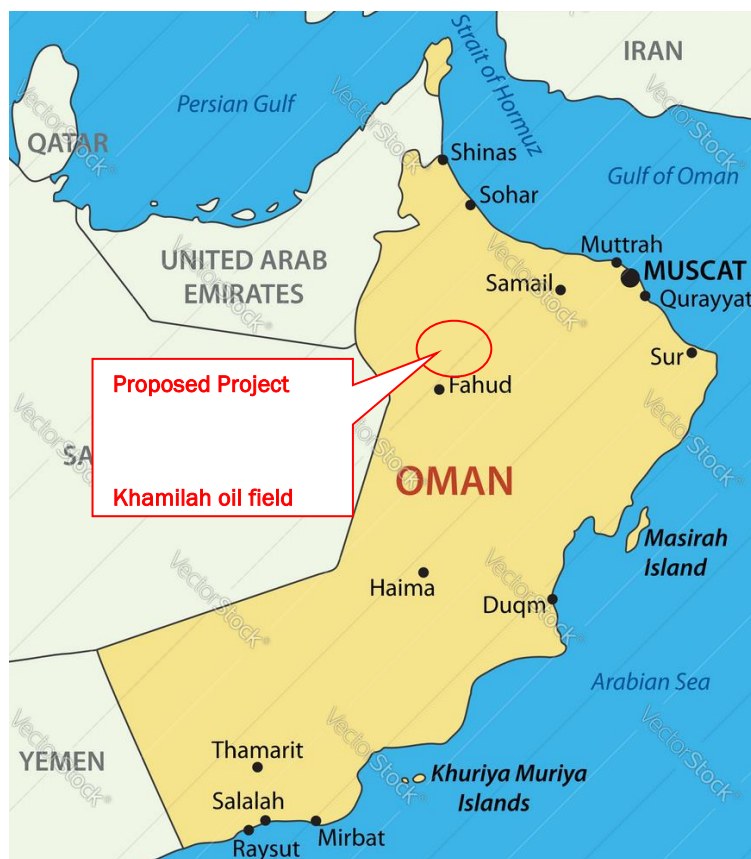
n.a.

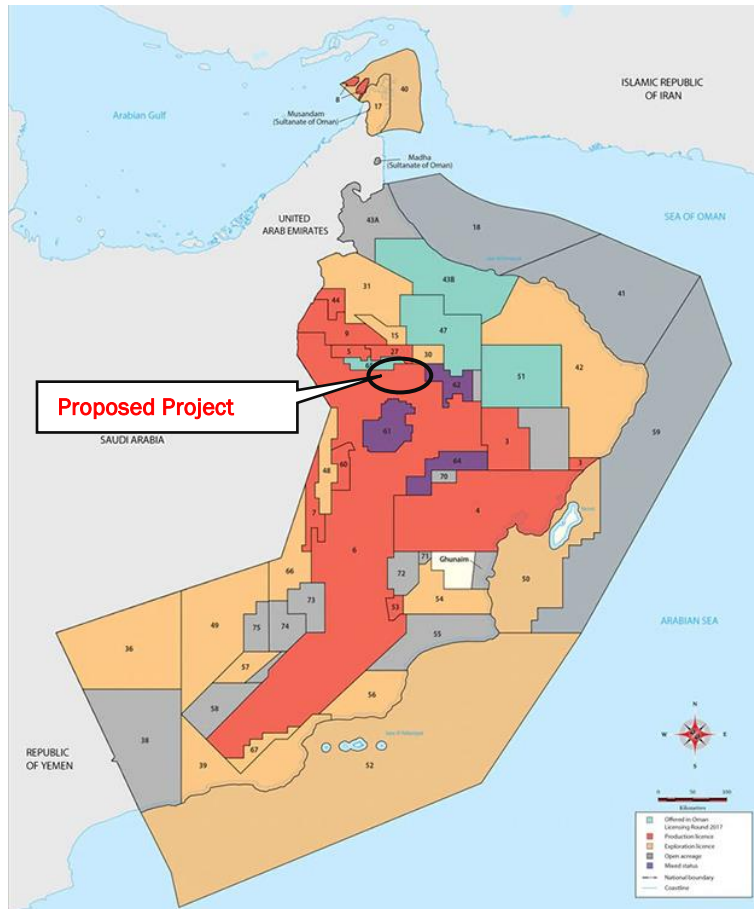
## 1.12 Project Location

The project will collect associated gas from Khamilah oil field at Block-27, Wilayat Ibri of Al-Dhahirah Governorate, the Sultanate of Oman. The recovered gas will be collected and processed at Khamilah station. Al-Dhahirah Region is in the Northern Oman.

Approximate coordinates of Khamilah station are east longitude of  $56^{\circ}14'38''$  and north latitude of  $22^{\circ}43'01''$ . Figure A.1 shows the location of the project.

The proposed project is located at Block 9, Safah oil field in A'Dhahirah Region of Northern Oman. Approximate coordinates of Safah gas processing plant are east longitude of  $55^{\circ}27'40''$  and north latitude of  $23^{\circ}11'20''$ . The project includes four other locations: Far West ( $23^{\circ}09'11''\text{N}$ ,  $55^{\circ}27'03''\text{E}$ ), Satellite ( $23^{\circ}10'39''\text{N}$ ,  $55^{\circ}29'52''\text{E}$ ), Jalal ( $22^{\circ}55'50''\text{N}$ ,  $55^{\circ}48'16''\text{E}$ ), and Wadi Latham ( $22^{\circ}52'50''\text{N}$ ,  $55^{\circ}48'16''\text{E}$ ).





### 1.13 Conditions Prior to Project Initiation

The baseline scenario is the same as the conditions existing prior to the project initiation.

### 1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

The project complies with all relevant laws and regulations by the Sultanate of Oman. Mainly include:

1. Ministerial Decision 5/86 of May 17 1986
2. Law on Conservation of Environment and Prevention of Pollution promulgated by Royal Decree No. 114/2001
3. Regulations for Air Pollution Control from Stationary Sources
4. Oil and Gas Regulation in Oman

The project obtained environmental permit and CDM LOA from Ministry of Environment and Climate Affairs, which approvals well demonstrate that government permits the construction of

the project. Consequently, the project is compliance with laws, status and other regulatory frameworks.

## 1.15 Participation under Other GHG Programs

### 1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

The project has been registered under CDM under AM0009, the CDM reference number is 10584. The crediting period under CDM is 03/08/2020 – 02/08/2030 (Fixed).

### 1.15.2 Projects Rejected by Other GHG Programs

The project has not been rejected by any other GHG programs.

## 1.16 Other Forms of Credit

### 1.16.1 Emissions Trading Programs and Other Binding Limits

The project is not involved in an emission trading program or any other mechanism that includes GHG allowance trading.

### 1.16.2 Other Forms of Environmental Credit

The project has not sought or received another form of GHG-related environmental credit.

## 1.17 Additional Information Relevant to the Project

### Leakage Management

According to the registered CDM PDD and CDM methodology, there is no leakage emission considered.

### Commercially Sensitive Information

There is no commercially sensitive information in the project description.

### Sustainable Development

The proposed project activity will contribute to the Oman national and local sustainable development and also generates the following benefits:

- Benefit the local air conditions by reducing the air pollution due to flaring.
- Efficient use of natural resources due to the utilization of the gas that would be flared in the absence of the project.

- New job opportunities due to the construction activities.
- Reduce the combustion of fossil fuels at end-users that are produced from non-associated gas or other fossil sources.

### Further Information

There is no additional relevant legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and/or temporal information that may have a bearing on the eligibility of the project, the net GHG emission reductions or removals, or the quantification of the project's net GHG emission reductions or removals.

## 2 SAFEGUARDS

### 2.1 No Net Harm

n.a.

### 2.2 Local Stakeholder Consultation

n.a.

### 2.3 Environmental Impact

n.a.

### 2.4 Public Comments

n.a.

### 2.5 AFOLU-Specific Safeguards

n.a.

## 3 APPLICATION OF METHODOLOGY

### 3.1 Title and Reference of Methodology

The project activity uses the baseline and monitoring methodology AM0009/Version 07.0: “Recovery and utilization of gas from oil fields that would otherwise be flared or vented”.

Any other methodological tools to which the selected methodology AM0009/Version 07.0 refer:

- (a) “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0)”;
- (b) “Tool for the demonstration and assessment of additionality (Version 07.0.0)”;
- (c) “Combined tool to identify the baseline scenario and demonstrate additionality” (Version 7.0);

<https://cdm.unfccc.int/methodologies/DB/ET4NXMVXFQ5C2EJ5L10F8YZIEVLVDA>

### 3.2 Applicability of Methodology

The baseline and monitoring methodology AM0009 Version 07.0 is applicable to the proposed project; because the project meets all the applicability criteria stated in the methodology.

The detail demonstration of the applicability of the methodology has been displayed in section B.2. of the CDM PDD.

<https://cdm.unfccc.int/filestorage/C/W/S/CWSZBTI4LG00RU37M2PJ0KYE1XN9HA/PDD.pdf?t=Tkt8cjhpctJxfDAg0S6r5yS3R0H2Uwhus3IF>

### 3.3 Project Boundary

The project boundary encompasses:

- The project oil reservoir and oil wells at at Khamilah oil field area at Block-27, where the associated gas is collected;;
- The site where the associated gas was flared in the absence of the project activity;
- The gas recovery, pre-treatment, processing and transportation infrastructures, and compressors;
- The source of gas-lift gas

The greenhouse gases and emission sources included in or excluded from the project boundary have been presented in Section B.3 of the CDM PDD.

<https://cdm.unfccc.int/filestorage/C/W/S/CWSZBTI4LG00RU37M2PJ0KYE1XN9HA/PDD.pdf?t=Tkt8cjhpctJxfDAg0S6r5yS3R0H2Uwhus3IF>

### 3.4 Baseline Scenario

The scenario existing prior to the start of the implementation of the proposed project activity is flaring of associated gas at the oil production site, the operation of the existing oil and gas infrastructure without processing of any recovered associated gas, and the use of gas-lift gas from the same source and quantity as under the project activity in the gas-lift system. The

baseline scenario is the same as the scenario existing prior to the start of implementation of the proposed project activity.

Baseline scenario has been identified in detail in Section B.4 of the CDM PDD.

<https://cdm.unfccc.int/filestorage/C/W/S/CWSZBTI4LG0QRU37M2PJ0KYE1XN9HA/PDD.pdf?t=Tkt8cjhpcTJxfDag0S6r5yS3R0H2Uwhus3IF>

### 3.5 Additionality

The additionality has been demonstrated in Section B.5 of the CDM PDD.

<https://cdm.unfccc.int/filestorage/C/W/S/CWSZBTI4LG0QRU37M2PJ0KYE1XN9HA/PDD.pdf?t=Tkt8cjhpcTJxfDag0S6r5yS3R0H2Uwhus3IF>

### 3.6 Methodology Deviations

There is no methodology deviations applied for the project.

## 4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 4.1 Baseline Emissions

n.a.

### 4.2 Project Emissions

n.a.

### 4.3 Leakage

n.a.

### 4.4 Net GHG Emission Reductions and Removals

n.a.

## 5 MONITORING

## 5.1 Data and Parameters Available at Validation

n.a.

## 5.2 Data and Parameters Monitored

n.a.

## 5.3 Monitoring Plan

n.a.

# APPENDIX

n.a.