



# VALIDATION REPORT

OMAN TRADING INTERNATIONAL

## VALIDATION OF THE ASSOCIATED GAS RECOVERY AND UTILIZATION AT BLOCK 9

### BUREAU VERITAS CERTIFICATION

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REPORT NO. DUBAI-VAL/OMAN-01/2012

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## VALIDATION REPORT



Date of first issue: <b>16/07/2012</b>	Organizational unit: <b>Bureau Veritas Certification Holding SAS</b>
Client: <b>Oman Trading International.</b>	Client ref.: <b>Mr. SAID AL MAAWALI</b>

**Summary:**  
Bureau Veritas Certification has made the validation of the Associated Gas Recovery and Utilization at Block 9 project of Oman Trading International located in the Safah Oil Field, A'Dhahirah region of the Sultanate of Oman on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and 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 validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, is being conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CLs and CARs), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology Version 06.0.0 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.: <b>Dubai-val/Oman-01/2012</b>	Subject Group: <b>CDM</b>
Project title: <b>Associated Gas Recovery and Utilization at Block 9</b>	
Work carried out by: <b>Leonid Yaskin – Team Leader</b> <b>Usman Haider - Verifier</b>	
Internal Technical Review carried out by: <b>Vladimir Lukin – Internal Technical Reviewer</b>	
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**Indexing terms**

Work approved by:

Mr. Flavio Gomes

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**Abbreviations:**

Bcf	Billion Cubic Feet
CAPEX	Capital expenditures
CAR	Corrective action request
CDM	Clean development mechanism
CDM EB	Executive Board
CER	Certified emission reduction
CL	Clarification request
COP/MOP	Conference of Parties/Meeting of the Parties
DOE	Designated operational entity
DNA	Designated national authority
EF	Emission Factor
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
FAR	Forward action request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
LNG	Liquefied Natural Gas
LoA	Letter of Approval
MBTU	Million British Thermal Units
MoC	Modalities of Communication
MP	Monitoring Plan
NCV	Net Calorific Value
OPEX	Operational expenditures
PDD	Project Design Document
PP	Project participant
QC/QA	Quality Control / Quality Assurance
Scf	Standard Cubic Feet
UAE	United Arab Emirates
UNFCCC	United Nations Framework Convention on Climate Change



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## 1 INTRODUCTION

Oman Trading International has commissioned Bureau Veritas Certification to validate its CDM project Associated Gas Recovery and Utilization at Block 9 (hereafter called “the project”) at Safah Oil Field, A’Dhahirah region of the Sultanate of Oman.

This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

### 1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

### 1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

### 1.3 Validation team

The validation team consists of the following personnel:

FUNCTION	NAME	CODE	TASK
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		HOLDER*	PERFORMED
<b>Lead Verifier</b>	Leonid Yaskin	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI
<b>Verifier</b>	Usman Haider	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI
<b>Technical Specialist</b>	Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Financial Specialist</b>	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Internal Technical Reviewer (ITR)</b>	Vladimir Lukin	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
<b>Specialist supporting ITR</b>	N.A.	N.A.	N.A.

\*DR = Document Review; SV = Site Visit; RI = Report issuance

## 2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55th meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

It organizes, details, and clarifies the requirements a CDM project is expected to meet;

It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix A to this report.

### 2.1 Review of Documents

The Project Design Document (PDD) submitted by Oman Trading International and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, Kyoto



Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, Oman Trading International revised the PDD and resubmitted it as version 6.0 on 30/12/2012.

The validation findings presented in this report relate to the project as described in the PDD version v.6.0.

## 2.2 Follow-up Interviews

On 26/06/2011 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Ministry of Oil & Gas of the Sultanate of Oman (Project Participant), Occidental Oman (Project Operator), Oman Trading International (the entity of UAE, the latter being the Party involved other than the host Party) and local Stakeholder were interviewed (see References). The main topics of the interviews are summarized in Table 1.

**Table 1 Interview topics**

Interviewed organization	Interview topics
Ministry of Oil & Gas	<ul style="list-style-type: none"> <li>➤ Presentation of the project and of its participants</li> <li>➤ Status of LoA</li> </ul>
Oman Trading International and Occidental Oman	<ul style="list-style-type: none"> <li>➤ Presentation of the project and of its participants</li> <li>➤ Project status</li> <li>➤ PDD review</li> <li>➤ Provision of supporting information and evidence</li> </ul>
LOCAL Stakeholder	<ul style="list-style-type: none"> <li>➤ Views on the project from the local community</li> </ul>
Oman Trading International and Occidental Oman.	<ul style="list-style-type: none"> <li>➤ Project status</li> <li>➤ PDD review</li> <li>➤ Project operation and equipment</li> <li>➤ Input data for Investment Analysis and ER estimation</li> <li>➤ Provision of supporting information and evidence</li> </ul>

## 2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that



need to be clarified for Bureau Veritas Certification positive conclusion on the project design.

Corrective Action Requests (CAR) is issued, where:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

The validation team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

## **2.4 Internal Technical Review**

The validation report underwent through an Internal Technical Review (ITR) before requesting registration of the project activity.

The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.

The Lead Verifier provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This is a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.





The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the validation exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Validation Team and discusses these matters with Lead Verifier.

After the agreement of the responses on the clarification questions from the Lead Verifier as well as the PP(s) the finalized validation report is accepted for further processing such as uploading on the UNFCCC webpage.

### **3 VALIDATION CONCLUSIONS**

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original and amended project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in Appendix A.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 24 Corrective Action Requests (CARs) and 11 Clarification Requests (CLs).

The CARs and CLs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

In the following sections, the conclusions of the validation are stated.

The number between brackets at the name of each section correspond to the VVM paragraph.

#### **3.1 Approval (49-50)**

A Letter of Approval (LoA) from the DNA of the host Party on the CDM project has been issued (Ref MECA/DGCA/CDM-P2/LoA-1/2012 dated 31/12/2012). /13/



A Letter of Approval (LoA) from the DNA of UAE being the Party involved other than the host Party on the CDM project has been issued (dated 17/07/2012) /14/.

Bureau Veritas Certification received a copy of each letter from the project participant and does not doubt their authenticity. The title and contents of the letters of approval refer to the precise proposed CDM project activity title in the PDD being submitted for registration.

Bureau Veritas Certification considers the above Letters of Approvals are in accordance with paragraphs 45 - 48 of the VVM. In particular the Oman LoA states that the proposed CDM activity contributes to sustainable development of the Sultanate of Oman.

The LoAs includes clear statements on the ratification of Kyoto Protocol and voluntary participation.

When the letters of approval were pending (Ref CAR 01, Appendix A), validation team has raised a related CAR 01 which is now closed.

### **3.2 Participation (54)**

The participation of the Ministry of Oil & Gas of the Sultanate of Oman in the CDM project has been authorized by the above Letter of Approval (LoA) from the DNA of the host Party on the CDM project (Ref MECA/DGCA/CDM-P2/LoA-1/2012 dated 31/12/2012). /13/

A Letter of Approval from the DNA of UAE on the participation of Oman Trading International in the CDM project has been issued (dated 17/07/2012) /16/.

Bureau Veritas Certification received a copy of each letter from the project participant and does not doubt their authenticity. The title and contents of the letters of approval refer to the precise proposed CDM project activity title in the PDD being submitted for registration.

Bureau Veritas Certification considers the above Letters of Authorization are in accordance with paragraphs 52-53 of the VVM.

When the letters of authorization were pending (Ref CAR 02, Appendix A), validation team has raised a related CAR 02 which is now closed.



### 3.3 Project design document (57)

The validation team hereby confirms that the PDD Version 6.0 dated 30/12/2012 complies with the latest CDM requirements for completing the PDD (Ref Guidelines for completing the project design document (CDM-PDD) Version 07. The PDD Form Version 03 is the latest PDD template with regard to VVM track.

### 3.4 Changes in the Project Activity

No changes in the project activity were observed during the validation as compared to description on in webhosted PDD.

### 3.5 Project description (64)

The process undertaken to validate the accuracy and completeness of the project description consisted in the documentation reviews by the lead verifier of the validation team and by the validation team at the site visit. Certain findings were identified by DOE and were raised in the form of CARs and CLs by the DOE and then being addressed by the project participant. For further details, refer to Appendix A Validation protocol of this report.

The proposed project activity Associated Gas Recovery and Utilization at Block 9 consists of the recovery and utilization of natural gas found in association with oil at Block 9. The project activity is located in the Safah Oil Field, A'Dhahirah region of the Sultanate of Oman. Block 9 is operated by Occidental of Oman Inc. under a exploration and production sharing agreement (PSA) with the Ministry of Oil and Gas. The PSA /28/ was made available to the DOE in copy with stamps and signatures proving its authenticity.

Purpose of the proposed project activity:

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.

- Scenario existing prior to the start of the implementation of the project activity:

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 any



other significant changes, and the use of gas from the same source and quantity as under the project activity in the gas-lift system.

- Project scenario:

The proposed project activity Associated Gas Recovery and Utilization at Block 9 consists of the recovery and utilization of natural gas found in association with oil at Block 9. 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 at several locations on site, and a network of pipelines for gas transportation.

- Baseline scenario:

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.

Reduction of greenhouse gases:

Contribution to sustainable development:

The total estimated amount of associated gas to be recovered during crediting period is about 2.1 billion m<sup>3</sup> while average methane content is estimated at about 70%. The project activity is expected to reduce emissions by approximately 775,250 tonnes of CO<sub>2</sub> equivalent annually over the crediting period. The fixed crediting period of project activity is 7 years (see PDD Table A.4 for detailed values).

The proposed project activity contributes to sustainable development in Oman through a number of ways:

- Benefit the local air conditions by reducing the air pollution due to flaring.

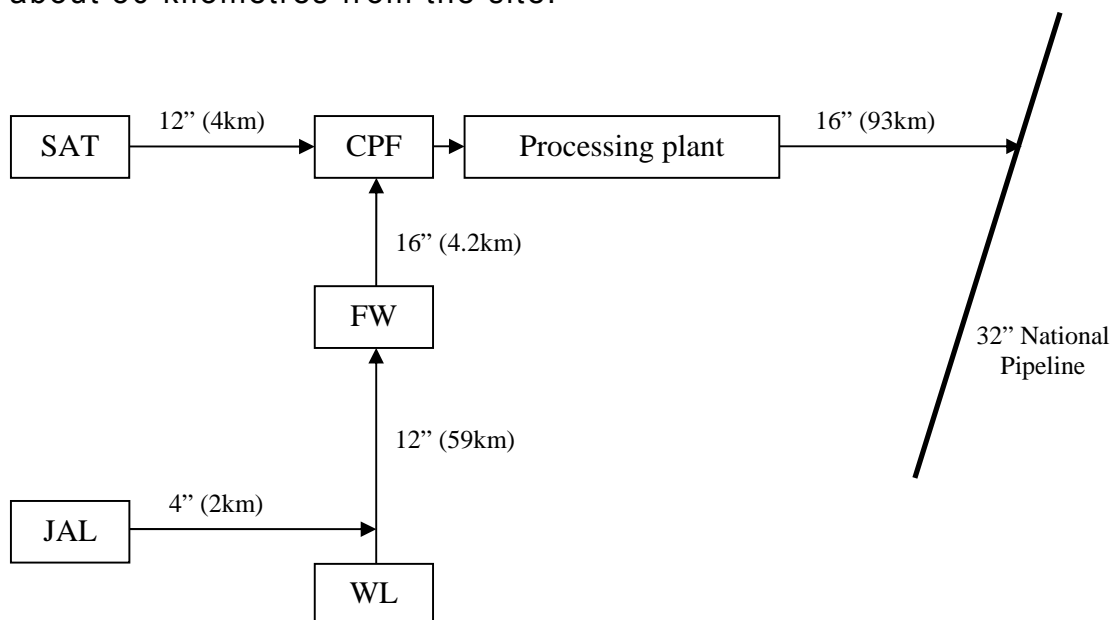


- Efficient use of natural resources due to the utilization of the gas that would be flared in the absence of the project.
- New job opportunities due to the construction activities.
- Reduce the combustion of fossil fuels at end-users that are produced from non-associated gas or other fossil sources.

During the validation, validation team validated the accuracy and completeness of the project description referred in the PDD as stated below:

**Project location:**

The proposed project activity aims to recover associated gas flow that is currently flared at 5 different sites at Block 9 Safah oil field in A'Dhahirah Region of Northern Oman. These are: central production boot flare in Safah (CPF), Satellite (SAT), Far West (FW), Jalal (JAL), Wadi Latham (WL). The sites are connected by pipelines as shown on the figure below. Gas will be transported to a processing plant on-site where it will be processed then further transported and sold to gas pipeline. The validation team visited Wadi Latham site, the nearest town is Ibri which is about 50 kilometres from the site.



During validation it was determined that the sites of the project and their characteristics (investments by years, gas gains, type of equipment) are specified in the Project Authorisation Request being an official internal document of Occidental Oman /11/.

**Project equipment**

The project activity mainly comprises the installation of compressor packages at five different locations, including compressor, motor, scrubbers, suction and discharge bottles, coolers, as well as installation of a pipeline network. Compressors are driven by electric energy supplied by the captive gas turbine power plants firing a part of the collected gas. The validation included the visit to a project site where the project activity and the equipment set-up were determined visually and by studying passports of equipment. Start of operations at each site was validated by official Acts of Commissioning which were provided to the DOE /45/.

**Gas gains**

Gas profiles by year for each site were attached to the Project Authorization Request. Consumption of gas by captive gas turbine power plants was estimated by the compressors capacity and specific fuel consumption at gas turbines. Composition of gas needed to calculate Net Calorific Value (NCV) under the AM0009 Version 06.0.0 was measured by chromatograph by laboratory; the gas protocols were made available to the DOE/19/ which checked the accuracy of calculating NCV. During the project implementation shrinking of gas gains due to production of condensate (C3+) was taken into account and the provided protocols were validated by the DOE /19/.

The following finding on Project description (64) was raised by the validation team and then addressed by the project participant by updating the PDD:

- CAR 03 was raised as to the missing e-mail or fax of PP contact persons. This information was added to the PDD and the CAR was closed.
- CAR 04 was raised on the missing information on purpose of the project activity and on non-treatment of gas pipelines as main equipment. The issues were duly addressed by the PP and the CAR was closed.
- CAR 05 was raised as to the missing indication of technical area of the project activity. This information was added to the PDD and the CAR was closed.
- CAR 06 was raised to the lacking or inconsistent information about characteristics of compressors, pipelines, monitoring equipment and about gas gains. PDD was revised by the PP to include the information in question.
- CAR 23 was raised on the inconsistency in indicating the start of the project activity.



- CAR 24 was raised on the incorrectly defined length of the fixed crediting period.
- CL 01 was raised on the lack of clarity as to coordinates of each location. Due amendment was made to the PDD Section A.4.1.4.
- CL 05 requests to provide the DOE a copy of the contract indicating the project starting date.

The DOE hereby confirms that the project description in PDD version 6.0 is accurate and complete in all respects and that there are no changes to the project activity/design or boundary, as compared to the webhosted PDD.

### **3.6 Baseline and monitoring methodology**

#### **3.6.1 General requirement (76-77)**

The steps taken to assess the relevant information contained in the PDD against each applicability condition are described below.

The project activity uses the baseline and monitoring methodology Version 06.0.0 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented".

This methodology also refers to the latest approved versions of the following tools:

- *"Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" (not used in this PDD);*
- *"Tool to calculate baseline, project and/or leakage emissions from electricity consumption (Version 1)";*
- *"Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" (not used in this PDD);*
- *"Tool for the demonstration and assessment of additionality (Version 06.1.0)".*

The proposed project activity aims to recover and utilize associated gas from oil wells (Block 9). Prior to the start of the project activity, part of the associated gas was used for the purpose of the gas-lift process and energy generation to cover onsite demands, and excess gas was flared on-site. The DOE determined that the baseline and monitoring methodology AM0009 Version 06.0.0 is applicable to the proposed project activity because the project meets all the applicability criteria stated in the methodology (refer to the smaller font):





- Under the project activity the recovered gas, after pre-treatment (compression and phase separation) in movable or stationary equipment, is:
  - Consumed on-site to meet energy demands; and/or
  - Transported to a gas pipeline without prior processing; and/or
  - Transported to a processing plant where it is processed into hydrocarbon products (e.g. dry gas, liquefied petroleum gas (LPG) and condensates). The dry gas is either: (i) transported to a gas pipeline directly; or (ii) compressed to CNG first, then transported by trailers/trucks/carriers and then decompressed again, before it finally enters the gas pipeline

The perusal of the PDD and the site visit enabled the DOE to confirm that the gas from the proposed CDM project activity will be transported to a processing plant and processed into hydrocarbon products (dry gas and condensate) while a small amount of recovered associated gas will be consumed on-site to meet energy demands of the proposed project activity. The dry gas will be transported to a gas pipeline directly.

- The project activity does not lead to changes in the process of oil-production, such as an increase in the quantity or quality of oil extracted, in the oil-wells within the project boundaries;

Based on the study of the project activity on site the DOE confirms that the proposed project activity will utilize associated gas in excess of quantities of gas used as gas-lift gas. Excess gas will be compressed and sent to processing plant. Therefore, the project activity will have no impact on the quality or quantity of oil extracted in the oil wells within the project boundaries.

- The injection of any gases into the oil reservoir and its production system is allowed in the project activity only for the purpose of the gas-lift process;

Evidence has been provided to DOE by the reservoir management team on-site that the project activity includes the injection of associated gas into oil reservoir for gas-lift proposes. Quantity of gas used in gas-lift system has been estimated by the reservoir management team on-site over the life time of the project and the project activity will only utilize associated gas in excess of quantities needed in gas-lift system. Evidence has been provided to DOE.

- All recovered gas comes from oil wells that are in operation and are producing oil at the time of the recovery of the associated gas and/or gas-lift gas.

The DOE confirms that the project activity will be carried out at five different locations allowing recovery of associated gas across the Block 9, which has been in operation before the project design and which will continue to operate for at least as long as the proposed project activity.





In addition, the applicability conditions included in the tools referred to above apply:

“Tool to calculate baseline, project and/or leakage emissions from electricity consumption (Version 01)” is applicable to the proposed project activity because the project meets the applicability criteria stated in the tool:

- The tool is only applicable if one out of the following three scenarios applies to the sources of electricity consumption:
  - Scenario A: Electricity consumption from the grid;
  - Scenario B: Electricity consumption from (an) off-grid fossil fuel fired captive power plant(s): One or more fossil fuel fired captive power plants are installed at the site of the electricity consumption source and supply the source with electricity. The captive power plant(s) is/are not connected to the electricity grid.
  - Scenario C: Electricity consumption from the grid and (a) fossil fuel fired captive power plant(s).

The site visit provided the DOE with the evidence that the project activity is applicable to Scenario B. Captive power plant using fossil fuel (i.e. natural gas) will supply the source with electricity. The captive power plant(s) is/are not connected to the electricity grid.

- This tool is not applicable in cases where captive renewable power generation technologies are installed to provide electricity in the project activity, in the baseline scenario or to sources of leakage.

In the project activity, the captive power station which provides electricity uses natural gas as fuel; renewable resource will not be used as fuel.

“Tool for the demonstration and assessment of additionality (Version 06.1.0)” is applicable to the proposed project activity due to the tool requirement:

- Once the additionality tool is included in an approved methodology, its application by project participants using the methodology is mandatory.

Finally, the methodology AM0009 Version 06.0.0 is only applicable if the identified baseline scenario is:

- The continuation of the current practice of either venting (scenario G1), flaring (scenario G2) of the associated gas and/or gas-lift gas or on-site use of the partial amount of associated and/or gas-lift gas to meet on-site energy demands and the rest of the gas are either vented or flared (scenario G3); and
- The continued operation of the existing oil and gas infrastructure without any other significant changes (scenario P4);
- In the case where gas-lift is used under the project activity: the gas-lift gas under the baseline uses the same source as under the project activity and the same quantity as under the project activity (scenario O1).



Based on the results of interviews held on site and review of documents the DOE validates the justification in the PDD section B.4 that the identified baseline scenario is the current practice of gas flaring (scenario G2) as well as the continued operation of the existing oil and gas infrastructure without any other significant changes (scenario P4) and also the continued use of the lift gas from the same source and at the same quantity as under the project activity (scenario O1). According to the above, the project is therefore justified to be applicable to the methodology

The following finding on General requirement (76-77) was raised by the validation team and then addressed by the project participant by updating the PDD:

- CAR 07 requests to describe GHG involved from project gas flaring.
- CAR 08 requests to indicate the versions of the tools which AM0009 Version 06.0.0 draws upon.
- CAR 09 requests to show in the PDD that the project activity meets the applicability conditions included in the tools referred to in the methodology.
- CAR 10 requests to support the justification of the AM0009 Version 06.0.0 applicability by documentation. The appropriate reference to the Project Authorization Document was included in Section B.2.
- CL 02 requests to clarify how AM0009 Version 06.0.0 applicability conditions as regards the equality of reinjected gas amount in the project activity and the baseline is maintained. As a response, Section B.2 was added by additional explanation. As the project does not envisage any changes in the oil recovery technique it was reasonably assumed that for equal oil production volumes in the absence of the project and under the project the amount of the gas lift should evidently remain the same.

The DOE hereby confirms that the used methodology AM0009 Version 06.0.0 and the tools referred to therein are applicable to the project activity, which in turn complies with all the applicability conditions included in the methodology and the tools.

The DOE hereby also confirms that, as a result of the implementation of the proposed CDM project activity, there are no greenhouse gas emissions occurring within the proposed CDM project activity boundary, which are expected to contribute more than 1% of the overall expected



average annual emissions reductions and which are not addressed by the applied methodology.

### **3.6.2 Project boundary (80)**

The DOE validates the project boundary by:

- a) Reviewing the documents/drawings/layouts of gas collection, transportation and pre-treatment /9/;
- b) Walking in the project site (one location), reviewing the site maps and interviewing staff from Occidental Oman.

The project boundary delineated in the PDD Figure B.1 complies with AM0009 Version 06.0.0. On-site gas consumption is included in the project boundary as this is the own needs of gas pre-treatment and inter-site transportation.

Based on the above assessment, the DOE hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

### **3.6.3 Baseline identification (87-88)**

The steps taken to assess the requirement given in paragraph 81 and 82 of the VVM are described below:

Based on information in the PDD, supporting documentation, referred sources and review of similar CDM projects, DOE confirms that the approved baseline methodology has been correctly applied for baseline identification. The PDD provides a verifiable description of the identified baseline scenario, including a description of the employed technology and related activities. The baseline scenario is justified to be the same as the scenario existing prior to the start of implementation of the proposed project activity, the flaring of associated gas at the oil production site, continuation of the operation of the existing oil and gas infrastructure without any other significant changes, and the use of gas for gas-lift system from the same source and quantity as under the project activity. The Additionality Tool was applied correctly. No reasonable alternative scenario has been overlooked in the context of the proposed CDM project activity. Relevant sectoral policies and circumstances related to the flaring associated petroleum gas in Oman have been considered and listed in the PDD.



In accordance with AM0009 Version 06.0.0 the baseline is established using stepwise approach, as described in PDD Section B.4. At Step 1 all realistic and credible baseline scenarios were identified for each of three project components - associated gas and/or gas-lift gas from the project oil wells, oil and gas infrastructure, and use of gas-lift (indexed by G, P, and O respectively). Overall scenarios G1-G6, P1-P5 and O1-O5 were identified and assessed for plausibility.

The exclusion of not plausible scenarios was made based on reasonable arguments which caused no disagreements from the validation team.

Not plausible are:

- G1: Release of the associated gas and/or gas-lift gas into the atmosphere at the oil production site,
- G3: On-site use of the partial amount of associated gas and/or gas-lift gas to meet on-site energy and rest of the gas are either vented (G1) or flared (G2),
- G4: Injection of the associated gas and/or gas-lift gas into an oil or gas reservoir,
- G6: Recovery, transportation and utilization of the associated gas and/or gas-lift gas as feedstock for manufacturing of useful products,
- P1: Construction of a processing plant for the purpose of processing the recovered gas, in the same way as in the project activity, without being registered as a CDM project activity,
- P2: Construction of a processing plant of a lower capacity than under the project activity, which processes only non-associated gas and no recovered gas,
- P5: Supplying recovered gas to a gas pipeline without prior processing and without being registered as a CDM project activity,
- O2: Gas from a different source than under the project activity but using the same quantity of gas-lift gas as under the project activity, is used for the gas-lift system,
- O3: Gas from the same source as under the project activity but using a different quantity of gas-lift gas, is used for the gas-lift system,
- O4: Gas from a different source than under the project activity and in a different quantity than under the project activity, is used for the gas-lift system,
- O5: No gas-lift system is utilized.

The main reasons of the scenarios exclusion are: noncompliance with local legislation and regulations, no demand, existing equipment.



Outcome of Step 1: The analysis resulted in realistic combinations for baseline alternative scenario as:

Option 1: G2+P4+O1 - flaring of the associated gas at the oil production site (G2), continuation of the operation of the existing oil and gas infrastructure without any other significant changes (P4), and gas from the same source as under the project activity and in the same quantity as under the project activity, is used for the gas-lift system (O1). Option 1 is in fact the continuation of the scenario existing prior to the start of the proposed project activity.

Option 2: G5+P3+O1 – the proposed project activity without being registered as a CDM project activity (G5), supplying recovered gas to an existing gas processing plant and constructing the necessary infrastructure, without been registered as CDM project activity (P3), and gas from the same source as under the project activity and in the same quantity as under the project activity, is used for the gas-lift system (O1). Option 2 is in fact the proposed project activity without being registered as a CDM project activity.

As per Step 2 Evaluate legal aspects in AM0009 Version 06.0.0, the PDD Section B4 addresses the following issues:

- Are the alternatives permitted by law or other (industrial) agreements and standards?
- Are there laws or other regulations (e.g. environmental regulations) which implicitly restrict certain alternatives?

The DOE confirms that all the realistic and credible alternative scenarios (G2, G5, P3, P4, and O1) outlined above are permitted by law or other industrial agreements and standards. There are no laws or other regulations (e.g. environmental regulations) which implicitly restrict some of the alternatives.

This is evidenced in the report “Regulation of Associated Gas Flaring and Venting, A Global Overview and Lessons from International Experience” published by the Global Gas Flaring Reduction Public-Private Partnership of the World Bank /38/, which states that for the Sultanate of Oman: The operator may “lift, process, and market associated gas jointly with the national oil company, subject to a negotiated gas agreement” and “use associated gas in operations or reinject or flare gas, subject to relevant consents”. Besides, the report further explains that: “Permission to flare



gas that cannot be marketed and that exceeds operational requirements is granted by the minister's written consent.”

In addition, associated gas flaring at Block 9 (existing scenario prior to the proposed project activity) does not violate the emissions standards as prescribed by the Ministerial Decision 5/86 of May 17th 1986 that “Dark Smoke-products of combustion shall not emit smoke as dark as or darker than shade 1 on the Ringelmann Scale. (20% opacity)”, and that “sulfur recovery units must achieve at least 95% efficiency”, as evidenced by the renewal of environmental permit (7th renewal) issued by the Ministry of Environment and Climate affairs on July 25th 2010 /40/.

Outcome of Step 2: All the realistic and credible alternative scenarios (G2, G5, P3, P4, and O1) outlined above are in compliance with mandatory legislation and regulations taking into account the enforcement in Oman and EB decisions on national and/or sectoral policies and regulations.

Step 3 and Step 4 were carried out in the Section B.5.

As detailed in section B.5, the outcome of the investment analysis shows that Option 2 above (i.e. the proposed project activity without being registered as a CDM project activity) is not considered economically attractive by the project participants. Therefore, the most plausible baseline scenario for the Project is identified as Option 1: G2+P4+O1, flaring of the associated gas at the oil production site, continuation of the operation of the existing oil and gas infrastructure without any other significant changes, and gas from the same source as under the project activity and in the same quantity as under the project activity, is used for the gas-lift system.

Methodology Version 06.0.0 is applicable to the proposed project activity and the identified baseline scenario is scenario G2, P4 and O1.

The following findings on Baseline identification (87-88) were raised by the validation team and then addressed by the project participant by updating the PDD:

- CAR 11 concerns that Section B.4 does not provide transparent illustration of all data used to determine the baseline scenario, such as the recovered gas volume and NCV (refer to PDD Formula (1)).
- CAR 12. Concerns that a transparent and detailed description of the identified baseline scenario including a description of the technology





- that would be employed and/or the activities that would take place in the absence of the proposed project activity is not provided.
- CL 03 requests to check whether flaring at the block 9 does not violate the emission standards.

Based on the above assessment, the validation team hereby confirms that:

- (a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
- (e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity, and has not been subject to a clarification, revision or deviation

### **3.6.4 Algorithms and/or formulae used to determine emission reductions (92-93)**

The steps taken to assess the requirement outlined in paragraph 89 of the VVM – *The steps taken and equations applied to calculate project emissions, baseline emissions and emission reductions shall comply with the requirements of the selected baseline and monitoring methodology* - are described below.

The validation team determined whether the equations and parameters in the PDD and provide excel file have been correctly applied by comparing them to those in AM0009 Version 06.0.0 and the related tools. They were found correct. Also parameters, factors and coefficients used in the equations were checked and verified by validation team.

The validation team verified the justifications given in the PDD for the choice of data and parameters used in the equations.

For data and parameters that will not be monitored throughout the crediting period of the proposed CDM project activity but have already



been determined and will remain fixed throughout the crediting period, the validation team assessed that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions.

For data and parameters that will be monitored on implementation and hence become available only after validation of the project activity, the validation team followed the message in AM0009 Version 06.0.0 Section Projection and adjustment of project and baseline emissions on the basis of oil production:

*“Project as well as baseline emissions depend on the quantity of associated gas and gas-lift gas recovered, which is linked to the oil production. Oil production may be projected with the help of a reservoir simulator, reflecting the rock and fluid properties in the oil reservoir...”*

*The validating DOE shall confirm that estimated emission reductions reported in the CDM-PDD are based on estimates provided in the survey used for defining the terms of the underlying oil production project as per the production sharing contract”.*

As confirmed in a statement from the Ministry of Oil & Gas to DOE dated 23 November 2011 /33/, on-site operations at Block 9 fall under the Petroleum Agreement /28/ which was signed on December 7, 1975 between the Government of the sultanate of Oman and Quintana International, Ltd and authorized by the Sultani Decree No. 51 of 1975 dated December 3, 1975. In the Petroleum Agreement, the term “Quintana International, Ltd” includes its successors and assigns. Occidental of Oman, Inc. (“Occidental”) became sole operator of Block 9 effective June 8, 1983, after an assignment dated February 22, 1983, that was approved by the Government pursuant to the Sultani Decree No. 37 of 1983.

Article IX “Production capacity and allowance production” of the Petroleum Agreement paragraph 9.2 states: “Within a reasonable time prior to the commencement of regular exports or any commercial sale, whichever shall occur first, and annually thereafter or at such other times as the Management Committee may decide, Quintana shall submit to the Management Committee its planning and estimates showing the anticipated and feasible capacity or range of capacities of the contract area for the production of petroleum during each of the succeeding years”.





The projected gross gas gains (MMSCFD) for the proposed CDM project at FW, WL, JL and SAT locations were calculated through multiplying the expected oil production (BOPD) by the Gas/Oil Ratio (GOR) of 0.002495 for Block 9, as confirmed in a statement from Occidental to DOE dated 23rd December 2012 provided to DOE under name "statement gas and gains" /46/. The 2008 expected oil production volumes at each location are summarized in the below table. Please refer to Occidental of Oman letter to DOE dated 02 December 2011 /32/ for related gas gains.

Table 1: 2008 Oil production forecast (in BOPD)

	FW	WL	JL	SAT
31-Dec-10	5052.57	11641.48	4633.77	9040.57
31-Dec-11	4642.27	12082.40	4144.06	8079.26
31-Dec-12	4588.05	12565.73	4807.50	6971.74
31-Dec-13	3959.62	11531.98	4877.03	5972.19
31-Dec-14	3307.87	9510.67	4014.31	5456.38
31-Dec-15	2549.34	7478.94	3198.29	4780.87
31-Dec-16	2180.20	6535.17	2443.38	4334.93
31-Dec-17	1435.43	4760.69	1891.01	3988.42
31-Dec-18	877.94	3451.66	1552.32	3772.82
31-Dec-19	795.77	2569.98	1317.78	3528.49

Expected gross gains at Central Production Facilities (CPF) were estimated based on actual gas volumes flared prior to implementation of the proposed project and the maximum gas recovery capacity installed as part of the CDM project. The reason is that overall oil production at this location is expected to continue to increase during the lifetime of the proposed CDM project rather than decline, through the operationalization of new wells. Such information is publicly available: *"Oxy's expected gross production in Oman from existing projects is expected to grow to between 220,000 and 240,000 BOEPD by 2014 with additional potential from existing exploration projects."*

[http://www.rigzone.com/news/article.asp?a\\_id=93540&rss=true](http://www.rigzone.com/news/article.asp?a_id=93540&rss=true)

In conclusion, this confirms that projected gas gains at each location are based on estimates of the underlying oil production.

#### Algorithms and/or formulae used to determine emission reductions:

#### **Baseline emissions**



During the validation process validation team determined that Baseline emissions are calculated according to equation 1 in AM0009 Version 06.0.0 as follows:

$$BE_y = V_{F,y} \cdot NCV_{RG,F,y} \cdot EF_{CO_2, \text{Methane}} \quad (1)$$

Where:

- $BE_y$  = Baseline emissions during the period y, (tCO<sub>2</sub>e)  
 $V_{F,y}$  = Volume of total recovered gas measured at point F in methodology AM0009 Version 06.0.0 Figure 2, (Nm<sup>3</sup>)  
 $NCV_{RG,F,y}$  = Net calorific value of recovered gas measured at point F in methodology AM0009 Version 06.0.0 Figure 2 in year y, (TJ/Nm<sup>3</sup>)  
 $EF_{CO_2, \text{Methane}}$  = CO<sub>2</sub> emission factor for methane (tCO<sub>2</sub>/TJ)

**For V:** Volume of total recovered gas was estimated as the sum of predicted yearly profiles of gas gain in million cubic foot per day for each site /25/. This data was provided to the DOE by the reservoir team. To calculate yearly gas gains the daily values were multiplied by 350 operational days. The applicability and conservativeness of this value is justified in PP response 3 to CAR 11 (refer to Appendix A Table 2).

**For NCV:** In the PDD, NCV was calculated by the gas composition measured by chromatograph at each project site prior to the start of project activity. Copies of genuine protocols were made available to the DOE/19/. The DOE reproduced calculation of NCV and received the same results.

**For EFCO<sub>2</sub>Methane:** CO<sub>2</sub> emission factor for methane was taken 54,834 tCO<sub>2</sub>/TJ as per AM0009 Version 06.0.0. Refer to PDD Section B.6.2.

### Project emissions

The following sources of project emissions are accounted in methodology AM0009 Version 06.0.0:

- CO<sub>2</sub> emissions due to consumption of fossil fuels for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas;
- CO<sub>2</sub> emissions due to the use of electricity for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas.

Project emissions are calculated as follows:



$$PE_y = PE_{CO2, fossilfuels, y} + PE_{CO2, elec, y} \quad (2)$$

Where:

$PE_y$  = Project emissions in the period y, (tCO<sub>2</sub>e)

$PE_{CO2, fossilfuels, y}$  = CO<sub>2</sub> 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 methodology AM0009 Version 06.0.0 Figure 2 in year y, (tCO<sub>2</sub>e)

$PE_{CO2, elec, y}$  = CO<sub>2</sub> 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 methodology AM0009 Version 06.0.0 Figure 2 in year y, (tCO<sub>2</sub>e)

In the project, electric energy is used to run the compression, pre-treatment and transportation equipment. Electricity is produced in on-site captive power plant. The equipment is all electricity-driven, the electricity consumption monitored and the project emissions from the consumption of electricity are estimated using the conservative default factor of the applicable tool, and consequently the emissions from the fossil fuel consumed by the electricity generators as part of project activity is:  $PE_{CO2, fossilfuels, y} = 0$ . Thereby the double accounting of the same emissions is prevented.

### **Project emissions $PE_{CO2, elec, y}$**

Project emissions  $PE_{CO2, elec, y}$  due to the use of electricity for the recovery, pre-treatment, transportation, and, if applicable, compression of the recovered gas are calculated applying the latest approved version of the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" where  $PE_{CO2, elec, y}$  corresponds to  $PEEC, y$  in the tool and the electricity consumption sources j in the tool correspond to all sources of electricity consumption (e.g. a compressor, etc) up to point F in methodology Figure 2.

Applicable sources of electricity consumption as part of the project activity consists of the power required to run the compression, pre-treatment and transportation equipment. Electricity is produced in on-site captive power plant.

As per above mentioned Tool, the generic approach for project emissions is based on the quantity of electricity consumed, an emission factor for



electricity generation and a factor to account for transmission losses:

$$PE_{CO2,elec,y} = PE_{EC,y}$$

$$PE_{EC,y} = \sum_j EC_{PJ,j,y} \times EF_{EL,j,y} \times (1 + TDL_{j,y}) \quad (3)$$

Where:

$PE_{EC,y}$  = Project emissions from electricity consumption in year y (tCO<sub>2</sub>/yr);

$EC_{PJ,j,y}$  = Quantity of electricity consumed by the project electricity consumption source j in year y (MWh/yr);

$EF_{EL,j,y}$  = Emission factor for electricity generation for source j in year y (tCO<sub>2</sub>/MWh)

$TD_{L,j,y}$  = Average technical transmission and distribution losses for providing electricity to source j in year y

j = Sources of electricity consumption in the project

**For  $EC_{PJ,j,y}$ :** Sources of electricity consumption in the project include vapour recovery unit at CPF and reciprocating compression units at WL, JAL, SAT and FW. Vapour recovery unit and reciprocating compression packages include compressors but also motors, air cooled exchangers, scrubbers, discharge scrubbers and suction bottles. The electricity consumption for each unit is estimated ex-ante through multiplying the total power capacity of the units at each location by the expected operating hours. Please refer to Annex 3 Table 8 for detailed values. Expected operating hours are calculated as gross gas gains at each location divided by total installed compression capacity at each location, and then multiplied by 24 hours and 350 days, considering annual downtime for maintenance (evidence provided to DOE). Please refer to Annex 3 Table 7 for detailed values.

**For  $EF_{EL,j,y}$ :**

Scenario B “Electricity consumption from an off-grid captive power plant” of the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” applies. Option B1 is not applicable as the captive power plant does not monitor the quantity of fossil fuel fired to generate electricity. Therefore Option B2 is selected and the conservative value of 1.3tCO<sub>2</sub>/MWh is applied as the electricity consumption source is a project electricity consumption source. Application of this conservative value results in overestimation of project emissions compared to the fuel gas consumption. Evidence has been provided to DOE.

**For TDL:**

Scenario B “Electricity consumption from an off-grid captive power plant” of the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” is applied. The tool explicitly indicates that in case of scenario B assume  $TDL_{j/k/l,y} = 0$  as a simplification. This value was used in the PDD.

**Leakage**

No leakage emission is considered as clearly follows from AM0009 Version 06.0.0 for the conditions of the project activity (dry gas is directly sold to the pipeline).

Thus,  $LE_y = 0$ .

**Emission reductions**

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y \quad (3)$$

Where:

$ER_y$  = Emission reductions in the period  $y$ , (t CO<sub>2</sub>e)

$BE_y$  = Baseline emissions in the period  $y$ , (t CO<sub>2</sub>e)

$PE_y$  = Project emissions in the period  $y$ , (t CO<sub>2</sub>e)

The following findings on Algorithms and/or formulae used to determine emission reductions (92-93) were raised by the validation team and then addressed by the project participant by updating the PDD:

- CAR 17 concerns that no explanation is provided in Section B.6.1 as to how the procedures in the approved methodology AM0009 Version 06.0.0 to calculate project emissions are applied to the proposed project activity. In emission reduction calculations, the project emissions are calculated as the product of the fixed value of gas volume, gas NCV and CO<sub>2</sub> emission factor for methane. The approach to the definition of gas consumption is not provided nor is explained why the gas consumption does not decrease with the yearly decrease of gas recovery. The use of CO<sub>2</sub> emission factor for methane is not conservative; the emission factor of the recovered associated gas shall be used.
- CL 04 requests to explain why the sum of molar fractions of hydrocarbons in Table “Gross heating value measured by PO” is 94% rather than 100%; also requests to explain the meaning of gross value (net rather gross calorific value is used in AM0009 Version 06.0.0).



Based on the described means of validation the validation team confirms that:

- (a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- (c) All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- (d) The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, and emission reductions; the correctness was validated by reproducing the calculations on the excel sheet.
- (e) All estimates of the baseline emissions have been replicated using the data and parameter values provided in the PDD.

### **3.7 Additionality of a project activity (97)**

The steps taken and sources of information used, to cross-check the information contained in the PDD on this matter are described below.

To prove additionality the project proponent has demonstrated that CDM benefits were considered necessary in the decision to the project as a proposed CDM project activity undertake (refer to 3.7.1), carried out the identification of alternatives (3.7.2), and applied the benchmark investment analysis (refer to 3.7.3) and common practice analysis (refer to 3.7.5).

The validation team made the following steps:

- assessed and verified the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by the project participants to support the demonstration of additionality;
- checked the application of tools and documents provided by the CDM Executive Board to demonstrate the additionality of the proposed project activity;
- checked the authenticity of documentation used for demonstration of additionality including CDM prior consideration documents, justification of the benchmark, the input data for investment analysis, the proof that the project is not the common practice.



### **3.7.1 Prior consideration of the clean development mechanism (104)**

The project start date is set at 1 April 2008. This date marks financial controller approval (final internal approval) of earliest significant capital expenditures in relation to the proposed project activity, i.e. the purchase of new pipelines and re-routes at Far West location, as per Occidental Oman internal document project authorization request. The DOE received a copy of the genuine document /11/ and validates the above date.

The project participant submitted an evidence of the CDM prior consideration in form of letter of the Ministry of Oil & Gas to the Occidental of Oman in which it stated the decision to develop the CDM project (Early CDM consideration) /12/. The CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity. The letter reads: «additional revenues from the sales of carbon credits will significantly increase the economics of the project while the flare will have significant positive impacts on the environment and on climate change». The validation team cross-checked the content of the letter with the parties concerned at the validation site visit.

The assessment of the Prior Consideration of the project activity “Associated Gas Recovery and Utilization at Block 9” is conducted by the DOE by consulting the UNFCCC website, and the validation team hereby confirms that the Period for Comments related to this project activity was set as from 23/06/2011 to 22/07/2011.

The validation team also validated other real and continuing actions taken to secure CDM status by review of documented evidences provided by PP and discussions with PP during the site visit to cross-check the evidences.

Based on the above assessment, the validation team hereby confirms that the proposed CDM project activity complies with the requirements of the latest version of the Guidance on prior consideration of CDM.

#### **3.7.1.1 Historical information on project timeline**

- On 12th February 2008, the Ministry of Oil & Gas sent a letter to the Occidental of Oman in which it stated its decision to develop the CDM project (Early CDM consideration).
- On 1st April 2008, a Project Authorization Request is approved internally for the reduction of the FW flare and the purchase of a series of new pipeline and re-routes. (Start of the project activity).





- In May 2008, the Oman Authority for Electricity Regulation recommends that Oman establish a Designated National Authority (DNA) to facilitate and administer incentives for Clean Development Mechanisms (CDM).
- On 4th August 2008, the Ministry of Oil & Gas contacts the Ministry of Environment & Climate Affairs (MECA) to inform about the progress of the project and inquire about establishment of the Designated National Authority.
- On 24th May 2009, a Memorandum of Understanding is drafted between Operator on-site and CER buyer.
- On 6th July 2009, MECA issue a statement in the press confirming that DNA is at final stage of establishment.
- On 29 March 2009, the construction of compressor started at CPF; commissioned on 28 November 2009.
- On 30th September 2009, following MECA statement clarifying the status of Omani DNA establishment process, CDM consultant is hired and starts work.
- On 15th December 2009, a meeting is organized between project participants and CDM consultant at Occidental of Oman.
- On 10th May 2010, a term sheet for the purchase of carbon credits is signed.
- In June 2010, a CDM-related local stakeholder consultations organized.
- In September 2010, Omani Government names the Directorate General of Climate Affairs (Ministry of Environment and Climate Affairs) as the statutory body with responsibility to serve as the DNA in Oman. Ministerial Decree 30/2010
- In November 2010, ERPA is signed with CER buyer.
- 28<sup>th</sup> June – On-site validation was carried out.
- 30 July 2011 – No-objection Letter is issued by the Ministry of Environment and Climate Affairs in relation to the proposed project activity.

Based on the review of the abovementioned documents held on site the DOE hereby confirms that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation and that the project activity comply with the requirements stated by EB 49, Annex 22.

### **3.7.2 Identification of alternatives (107)**

Identification of the alternatives was carried out in the PDD Section B.4 under Step 1 in AM0009 Version 06.0.0 and reported in 3.6.3 above.





These are Option 1 G2+P4+O1 being the continuation of the scenario existing prior to the start of the proposed project activity and Option 2 G5+P3+O1 being the proposed project activity without being registered as a CDM project activity.

The DOE considers the listed alternatives to be credible and complete.

### 3.7.3 Investment analysis (114)

According to AM0009 Version 06.0.0, “the economic attractiveness is assessed for those alternative scenarios that are feasible in technical terms and that are identified as permitted by law or other (industrial) agreements and standards in Step 2. The economic attractiveness is assessed by determining an expected Internal Rate of Return (IRR) of each alternative scenario, following the guidance for the investment analysis in the latest approved version of the “Tool for the demonstration and assessment of additionality” (Version 06.1.0). The IRR should be determined using, inter alia, the following parameters (input data) as applicable to the relevant scenario:

1. Overall projected production of associated gas and/or gas-lift gas;
2. The projected quantity of gas recovered, gas flared, vented, consumed on-site, processed in a gas processing plant and/or compressed into a pipeline;
3. The agreed price for the delivery of recovered gas (e.g. from a Production Sharing Contract) to the gas pipeline or gas processing plant (if operated by a third party);
4. The net calorific value of the recovered gas;
5. Capital expenditure for all oil and gas infrastructure needed in the relevant scenario, such as gas recovery facilities, pipelines, and gas processing plant (if applicable) etc. (CAPEX);
6. All operational expenditure associated with the respective scenario (OPEX);
7. All revenues from the operation of the alternative scenario, such as revenues from selling processed gas or other products of the gas processing plant or electricity;
8. Any profit sharing agreements and cost recovery, such as cost savings through the substitution of products by the recovered gas, if applicable (end of quotation)”.

In the proposed project activity, the combinations of alternative scenarios left after step 2 are:



- Option 1: G2+P4+O1 being the continuation of the scenario occurring prior to the start of the proposed project activity does not involve any investment and no revenues are generated from the operations of such scenario. Associated gas flaring and the use of gas-lift are common production practices at Block 9. Flaring of associated gas at a given location is not subject to taxes or fine. Due to the above this Option is not subject to the investment analysis.
- Option 2: G5+P3+O1, being the proposed project activity without being registered as a CDM project activity. This option requires capital investment and generates revenues from the sales of gas and by-products. The investment analysis is conducted for this alternative. The IRR is determined following the guidance for the investment analysis in the “Tool for the demonstration and assessment of additionality (Version 06.1.0)”.

The investment analysis was reviewed by the validation team in order to check and validate the specific investment condition of the project, the input data for investment analysis (see the list above), and the compliance of the IRR calculation with CDM Guidelines on the Assessment of Investment Analysis Version 05.

Particular information on key input data for investment analysis was validated:

1. **Projected quantity of gas recovered and sold:** Table below provides actual gas gains in 2012 due to implementation of the CDM project at CPF location. The values are in line with values projected in PDD. Evidence is provided to DOE; please see evidence “statement gas and gains” /46/.

Table. CPF actual gas gains

Month-Yr	Recovered Gas
	MMscfd
Jan-12	10.23
Feb-12	11.86
Mar-12	9.82
Apr-12	6.9
May-12	8.82
Jun-12	8.45
Jul-12	10.63
Aug-12	10.85
Sep-12	10.8



Oct-12	9.33
Nov-12	8.6
Dec-12	8.08

At other locations, existing metering equipment does not for the time being allow specific measurement of gas volumes recovered by the proposed CDM project. However, actual gas volumes can be calculated from actual oil production volumes at these locations using the Gas/Oil Ratio (GOR) of 0.002495 for Block 9. The following table provides a comparison of calculated actual gas gains and the projected values used for investment decision and in PDD:

Actual /projected gross gas gains – FW, WL, JAL and SAT (MMSCFD)

		2010	2011	2012
<b>Actual gas gains calculated based on oil production volumes</b>	<b>FW</b>	2.55	6.26	10.07
	<b>WL</b>	27.62	33.87	37.50
	<b>JAL</b>	6.01	4.40	5.90
	<b>SAT</b>	0.00	0.00	0.44
	<b>Total</b>	<b>46.18</b>	<b>54.53</b>	<b>63.92</b>
<b>2008 Projected gas gains (PDD values)</b>	<b>FW</b>	10.21	13.58	16.65
	<b>WL</b>	18.45	24.35	28.35
	<b>JAL</b>	6.56	5.34	6.99
	<b>SAT</b>	8.16	9.36	4.19
	<b>Total</b>	<b>53.37</b>	<b>62.63</b>	<b>66.19</b>
<b>difference</b>		<b>-7.19</b>	<b>-8.10</b>	<b>-2.27</b>

The values used in PDD are on the high side compared to actual values, which is conservative for the assessment of additionality. Please see evidence “statement gas and gains” /46/.

## 2. The projected quantity of liquid by-product of gas pre-treatment:

Values were provided by the reservoir management team in Liquid gains model report /20/ in which gas shrinkage values for each site were indicated (refer also to PDD Table B.9). Accounting of the by-product from gas processing plant is in strict conformity with AM0009 Version 06.0.0.

All natural gas volumes (associated and non-associated) produced and recovered from all wells within Block 9 are transported and treated at Safah gas plant for the purpose of meeting specifications of the national pipeline. All these volumes go through the same treatment



process and generate condensate as by-product (also referred to as 'Natural Gas Liquids'). Thus, it is not technically feasible to specifically monitor the actual amount of NGL recovered that is directly attributable to the proposed CDM project. Nevertheless, as explained in the 'Liquid Gain From Flare Reduction Project' /20/ report provided to DOE, NGL volumes are a direct function of gas volumes. Since actual gas volumes are lower than projected volumes, subsequent actual NGL volumes strictly follow a similar trend compared projected NGL volumes. Hence, values for NGL volumes used in PDD are conservative in the assessment of additionality. Evidence is provided in "statement gas and gains" /46/.

3. **The projected quantity of gas consumed on-site:** Values were calculated by compressors capacity and electrical efficiency of power plant gas turbines; these data were available at the time of the investment decision. Detailed calculations are presented in the PDD Annex 3, Table 11. The DOE validated the values presented in PDD Annex 3, Table 11 by reproducing the calculations on the IRR excel sheet.
4. **Agreed gas price:** According to Article 5 of the Gas Purchase Agreement (GPA) effective April 29th 2003, which was made available to DOE /22/, the gas price is US\$ 0.85 per MMBTU (Gross Heating Value), escalated at 1.5% per annum, with the first escalation effective the first day of the 49th 'Contract Month'. As per GPA Article 1, paragraph 1.1, 'Contract Month' starts from the 'First Gas Date'. The definition of 'First Gas Date' as per GPA Article 2, paragraph 2.2 is as follows: The date of first delivery of natural gas, but no later than January 1st 2004. As evidenced by actual gas invoice dated December 1st 2012 and provided to DOE /48/, the current gas price is 0.91569 US\$ per MMBTU (or 1056.70787941018 US\$ per MMSCF). It confirms that the 'First Gas Date' was January 1st 2004 and that first escalation occurred in 2008. Such information was available at investment decision therefore the IRR and PDD have been revised accordingly. The updated value is conservative for the additionality assessment.
5. **Net calorific value of recovered gas:** Maximum value 43 MJ/m3 acceptable at gas selling point as per gas sales and purchase agreement /22/ was used for the purpose of conservativeness. The evidence has been provided to the DOE.
6. **CAPEX:** The yearly values for each site and the whole project were validated by the operator's internal "Project Authorization Request" provided to the DOE. The capital expenditures were calculated by process engineer in charge of the project and the amount was approved internally at 3 subsequent levels, plus a reviewer. Final



approval was granted by the operator's financial controller. The value for total investment used in PDD amounts to 86,066,460 USD. DOE was provided main actual invoices related to the implementation of the proposed project activity. Actual invoices amount to 88,859,850 USD /47/, of which around 85% relates to equipment, 8% to construction and 8% to electrical works. Design phase related invoices are not provided which is conservative. Hence, the capital costs used in PDD's investment analysis are in line with actual costs.

7. **OPEX:** Operational expenses have been calculated by the on-site operator based on available technical data on compressors. They amounted to 1.2% of CAPEX. The value was cross-checked with actual O&M costs which amount to 1,155,674 USD, evidence was provided to DOE /17/.
8. **Projected Liquid Price:** As for the price applied in IRR for liquids, the following CAR 16 (e) was raised: "Official oil price for budget purposed at investment decision 55 USD/barrel (for 2008). Official information was not provided to the DOE." Project participants responded through providing a copy of the Sultanate of Oman's State General Budget for the Financial Year 2008 which uses 45\$/brl as budgeted oil price /26/. The value is valid as the budget was published on 1st January 2008, while investment decision was taken April 1st 2008. The value is applicable because liquids recovered are 'Natural Gas Liquids (NGL)' or 'condensate' and are swollen into the crude oil for sales therefore revenues from condensate are estimated at crude oil price. There is no LNG production. 2009 State Budget was made publicly available on January 1st 2009 and was therefore unknown at the time of investment decision. Nevertheless, budgeted oil price in the State General Budget for the Financial Year 2009 is also 45\$/brl. A copy of the 2009 budget is provided to DOE /49/. Consequently, the price applied for liquids in IRR was revised to 45\$/brl because the 55\$/brl liquid price in the published PDD is neither valid nor applicable, even more than a year after the start of the proposed project activity. Moreover, if for conservativeness the value of 55USD/brl was to be applied in financial analysis, the IRR would be 10.81% and would not cross the 11.5% benchmark.
9. **Production sharing agreement and cost recovery:** The production sharing agreement and cost recovery signed between the original operator back in the 1970's (a company called Quintana) still prevails, a copy of the "amendment to the (Suneinah block) petroleum agreement" which shows how operating responsibilities were transferred from original operator Quintana to Occidental of Oman is provided to DOE /27/.



The production sharing and cost recovery agreement signed between Quintana and Government shows that the first 40% annual production can be used by operator to recover its costs, then from the remaining 60%, 20% can be retained by Operator and 80% by Government. The IRR calculations reflect such structure. The Exploration and Production Sharing Agreement signed between Quintana and Government describes production sharing structure between the Parties. For confidential reasons the sharing percentage is not detailed in Validation Report or in PDD or IRR sheet, but it has been validated by DOE.

- 10. Income tax for the operator:** In accordance with Omani Law, Petroleum Companies are taxed at 55% /29/. Two pieces of evidence are provided to DOE, Oman Tax Law showing the 55% tax rate applicable to such companies and Tax receipts showing that the Operator actually paid the taxes/30/.

DOE confirms that all the above input values used in the investment analysis have been valid and applicable at the time of the investment decision taken by the project participant as per paragraph 6 of the Guidelines on the Assessment of Investment Analysis Version 5.

#### **Suitability of the benchmark**

Following the Guidelines on the Assessment of Investment Analysis Version 05 and as the project could only be implemented by the current Block 9 operator, the operator's internal benchmark applies and the cost of equity is determined by selecting the simple default option value provided in Appendix A of the above mentioned UNFCCC Guidelines, in line with Guidelines section IV paragraph 15. The project belongs to Sectoral Scope 10 "Fugitive Emissions from fuels" and therefore falls under project category Group 2. The default value for the expected return on equity calculated after taxes for the Sultanate of Oman is 11.5%. Thus, the investment analysis compares the equity Internal Rate of Return after tax (IRR) with the 11.5% benchmark. The DOE confirms the suitability of this benchmark.

#### **Correctness of underlying assumptions**

Apart from the validated above input data for the investment analysis and the benchmark, the underlying assumptions include:

- The assessment period is taken 12 years from 2008 till 2019 what is in line with paragraph 3 of the UNFCCC Guidelines.





- Taxation is included as an expense in the IRR calculation in cases since the benchmark indicator is intended for post-tax comparisons. This is in line with paragraph 5 of the UNFCCC Guidelines.
- The project is financed by Occidental of Oman from the equity without taking loan. The DOE validated this by the company 2008 Annual Report /35/.
- Depreciation is not taken into account in the calculations of taxable income to avoid double-counting, as under the production sharing agreement the operator is allowed to recover all costs including equipment costs.

### **Assessment of the sensitivity analysis**

The DOE assessed the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions. A sensitivity analysis is performed to show whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions. The range of +10% and -10% is standard for this type of projects and in line with the Guidelines on the assessment of investment analysis (version 05) paragraph 21 and there are no reasons to doubt in the likelihood of these variations for the considered project. Investment costs, gas volumes / price and liquid gains / price have been reasonably subjected to variations in the sensitivity analysis. O&M was included as well to provide the integrity of the analysis though this parameter should not be studied since it is below 20% of investment costs or revenues as per paragraph 20 in the Guidelines. The sensitivity analysis of the Internal Rate of Return confirms that the proposed project after the realistic modifications to the critical assumptions remains unlikely to be financially/economically attractive without CDM revenues. The Internal Rate of Return of the proposed project activity without CDM revenues remains below the 11.5% benchmark.

### **Correctness of financial calculations**

The DOE validated the correctness of the financial calculations on the excel spreadsheet by cross-checking the input data and underlying assumptions with those reported in the PDD and by reproducing the calculations which yielded the same results. Both the investment analysis and the sensitivity analysis show that the Internal Rate of Return of the proposed project activity without CDM revenues remains below the 11.5% benchmark. This implies that Option 2: G5+P3+O1 is not economically attractive for the operator without CDM support.



According to AM0009 Version 06.0.0, the alternative scenario that is economically the most attractive course of action is considered as the baseline scenario. Consequently, Option 2 is eliminated and Option 1 is the baseline scenario.

The following finding on Investment analysis (114) was raised by the validation team and then addressed by the project participant by updating the PDD:

- CAR 13 concerns that is not explicitly indicted in the PDD that Option 1, i.e. the business as usual is considered as the baseline scenario and that Option 2 i.e. the project activity is additional.
- CAR 15 requests to justify the appropriateness of using the 10% benchmark for the project activity with taking into account that AM0009 Version 06.0.0 does not suggest to take this benchmark without justification.
- CAR 16 requests to justify and/or cite assumptions on input data for the investment analysis in a manner that can be validated by the DOE.
- CL 09 requests to describe on the excel spreadsheet the method of calculating cost recovery (gas/fuel parts) and gas/fuel revenues.
- CL10. Requests to provide for DOE review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants.
- CL 11 requests to provide for DOE assessment previous decisions by the project participants involved.

Finally taking into account the above, it was demonstrated by PP that the project was not financially feasible without the sale of certified emission reductions.

The validation team, based on the assessment results by the Lead verifier being specialist in financial analysis, hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

### **3.7.4 Barrier analysis (118)**

Not applicable.

### **3.7.5 Common practice analysis (121)**

The Validation team has validated the requirements for common practice analysis to confirm that the project activity is not widely observed and commonly carried out in the region.





As the means of validation the DOE used its local and sectoral expertise to:

- (a) Assess whether the geographical scope (defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology and industry type.
- (b) Using official sources and local and industry expertise, determine to what extent similar and operational projects (e.g. using similar technology or practice), other than CDM project activities, have been undertaken in the defined region;
- (c) If similar and operational projects, other than CDM project activities, are already widely observed and commonly carried out in the defined region, assess whether there are essential distinctions between the proposed CDM project activity and the other similar activities.

The following legal-nature finding on Common practice analysis (121) was raised by the validation team and addressed by the project participant:

- CAR 14 (e): "Please check information that the Oman Ministry of Oil and Gas had enacted laws to cut flaring of associated gas where it is economically viable, particularly within PDO's concession. Since the 1970's, PDO has invested an estimated US\$800 million in initiatives aimed at capturing gas for utilization in power stations in the interior, as well as a resource for power and water schemes:

<http://www.tbpetroleum.com.br/news/see/id/17141/titulo/Petroleum+Devt+Oman+Plans+to+Halve+Flared+Gas+Volume+in+Block+Six>"

Appropriateness of geographical scope (defined region) of the project activity

The entire host country was selected as default in line with Additionality Tool. It was validated by reviewing oil concessions and petroleum companies active in the Sultanate of Oman, based on concession boundaries and operators list provided by the Ministry of Oil & Gas /8/ and relevant information publicly available (refer to the PDD, footnotes 9-17 Annex 3, Table 13).

#### Legal aspects

DOE confirms that according to the "Regulation of Associated Gas Flaring and Venting, A Global Overview and Lessons from International Experience" published by the Global Gas Flaring Reduction Public-Private Partnership of the World Bank<sup>1</sup> /38/, in the Sultanate of Oman an operator

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<sup>1</sup> <http://go.worldbank.org/NEBP6PEHS0>



may “lift, process, and market associated gas jointly with the national oil company, subject to a negotiated gas agreement” and “use associated gas in operations or reinject or flare gas, subject to relevant consents”.

Hence, there is no Law that binds operators to cut flaring where economically viable. This can be evidenced in case of the proposed CDM project activity by the renewal of environmental permit (7th renewal) issued by the Ministry of Environment and Climate affairs on July 25th 2010 /40/. Legal aspects are discussed in PDD section B.4 step 2.

#### Identification of the project type under the analysis

The analysis of the extent to which the proposed project type has already diffused in the relevant sector and region (common practice test) has been revised in the latest PDD version 6.0, and discussed following the sub-steps described in paragraph 47 of the “Tool for the demonstration and assessment of additionality” version 06.1.0. Paragraph 47 is applicable as the greenhouse gas emission reduction activities as part of the proposed project fall within Measure type (a) “Fuel and feedstock switch” listed in paragraph 6 of the Tool. This was confirmed with UNFCCC CDM helpdesk /50/.

#### Associated gas at PDO concession

The applicable output range of the proposed CDM project activity has been calculated to be between 18.5 mmscfd and 55.52 mmscfd gas as per paragraph 47 Step 1. After that, during the identification of all plants that deliver the same output within the applicable range, it was found in the PDD that the output of Block 6, which is PDO concession and the object of the issued CAR 14 (e), is significantly over the applicable range, with 493mmscfd, according to official company press release available online<sup>2</sup> /51/.

#### CAR 14(e) closure

In line with the “Tool for the demonstration and assessment of additionality” version 06.1.0, CAR 14(e) can be closed on the basis that the proposed CDM project activity is in compliance with mandatory legislation and regulations taking into account the enforcement in Oman,

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[http://pdointernet.pdo.co.om/Press%20Releases/\\_PressReleaseFile\\_PDO%20Announces%20Strong%202011%20Results%20in%20Production-%20Reserves-%20Safety%20and%20Omani%20National%20Employment20127287370.pdf](http://pdointernet.pdo.co.om/Press%20Releases/_PressReleaseFile_PDO%20Announces%20Strong%202011%20Results%20in%20Production-%20Reserves-%20Safety%20and%20Omani%20National%20Employment20127287370.pdf)



and that activities at PDO do not fall within the applicable common practice test output range of the proposed CDM project activity.

#### Analysis output

Identification of plants with a similar output in the applicable geographical area (Oman) demonstrated that only Block 5 delivers an output within the applicable output range defined in sub-step 1 and has started commercial operation before the start date of the proposed CDM project. However gas recovery and utilization activities at Block 5 differ from the proposed CDM project by the 'investment climate in the date of the investment decision' with regard to 'subsidies or other financial flows'.

#### Assessment of essential distinctions

There are essential distinctions between the Block 5 and the proposed CDM project activity as the operator of Block-5 benefited from a US\$40 Million from the International Finance Corporation as *"international banks have shied away from extending long-term financing at reasonable rates to small local private players in the region following the events of September 11<sup>th</sup>".* IFC also states that *"IFC's participation with a longer maturity will afford the Project with greater flexibility"*<sup>3</sup>. Evidence is available on the International Finance Corporation website.

Thereby analysis detected one activity with a similar output ( $N_{all}=1$ ) and at the same time with 'different technology' ( $N_{diff}=1$ ). According to the Tool, the proposed project activity is a "common practice" within a sector in the applicable geographical area if both the following conditions are fulfilled:

- (a) The factor  $F=1-N_{diff}/N_{all}$  is greater than 0.2; and
- (b)  $N_{all}-N_{diff}$  is greater than 3.

Both condition (a) and condition (b) are not fulfilled, hence the proposed project activity is not a 'common practice'.

The following finding on Investment analysis (114) was raised by the validation team and then addressed by the project participant by updating the PDD:

- CAR 14 concerns that the common practice analysis is not in compliance with the Tool for the demonstration and assessment of additionality.

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<http://www.ifc.org/ifcext/spiwebsite1.nsf/2bc34f011b50ff6e85256a550073ff1c/2da4cf88b1048a13852576ba000e266e?OpenDocument&Highlight=0,Hungary>



Based on the above assessment, the validation team hereby confirms that requirements of the common practice analysis are fulfilled, the proposed CDM project activity is not common and the project can be deemed additional.

### 3.8 Monitoring plan (124)

The DOE hereby confirms that the monitoring plan complies with the requirements of the methodology.

The steps taken by the DOE to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below.

As per monitoring requirements of parameters to be monitored (detailed below) in methodology AM0009 Version 06.0.0, the validation team validated the requirements on the basis of description in PDD and based on the evidences provided. Furthermore, during the physical validation of the project activity at the project site as well the monitoring being done was evidenced for each parameter to be monitored. During this validation process the validation team cross checked the evidences & data related to these parameters as provided by the PP in the form of electronic and hard copy records and protocols.

Following is the details of the parameters to be monitored as per description in PDD and in line with monitoring methodology in AM0009 Version 06.0.0.

**VF,y,Nm<sup>3</sup>**- Volume of the total recovered gas measured as per AM0009 Version 06.0.0 after pre-treatment and before the part of the recovered gas is used on-site, during the period y. Data are measured continuously using calibrated flow meters. Measurements are taken at the point(s) where recovered gas exits the pre treatment plant. QA/QC procedures to be applied: Volume of gas is metered through differential pressure (or equivalent) flow meters at each site. Calibration frequency is annual. Accuracy is  $\pm 2\%$  of reading typical or more accurate. Lead operators at each location are responsible for monitoring and reporting to Central Production Facility. The total value for parameter VF,y will be equal to the sum of volumes of recovered gas at each 5 locations.

**NCV<sub>RG,F,y</sub>**, TJ/Nm<sup>3</sup> - Net calorific value of recovered gas measured after pre-treatment and before the part of the part of the recovered gas is used on-site during the period y. In line with national and international fuel



standards, NCV is determined based on gas composition measurements which will be undertaken under the responsibility of the on-site lab located at Safah gas plant. Samples are taken at least monthly through PerkinElmer Clarus 500 GC chromatography (or equivalent) gas analyzer. Calibration frequency is at minimum annual using standard gas. 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/DP 6976:1995 standard. QA/QC procedures to be applied: Measurements will be done as per ISO10715 as well as other international standards, in strict accordance with requirements listed in gas purchase agreement provided to DOE.

The net calorific value (volume based) of the recovered gas in TJ/standard cubic meter will be calculated according to the following method:

$NCV_{RG,F,y}$  = the net calorific value (volume based) of the recovered gas in TJ/standard cubic meter will be calculated according to the following method:

$$NCV_{RG,F,y} = \sum (X_i \times NCV_i) / \sum X_i,$$

where

$X_i$  = molar fraction of the individual component i in the recovered gas sample provided by Safah Lab using chromatography gas analyzer at least monthly.

$NCV_i$  = Net Calorific Value (volume based) of the individual component i as per ISO/DP 6976:1995 standard, at reference conditions dry and ideal gas and air, combustion temperature of 15 degrees Celsius, air and gas temperature of fifteen degrees Celsius and Pressure of 1.01325 Bar. For details refer to PDD Table B.24.

**EC<sub>PJ,j,y</sub>**, MWh/yr - Quantity of electricity consumed by the project electricity consumption source j in year y. Data are measured continuously at each site using calibrated electricity meters to national standard. QA/QC procedures to be applied: accuracy Class 2 or more accurate. Instruments will be calibrated periodically in accordance with local requirements.

As per requirements in AM0009 Version 06.0.0, the above parameters will be monitored as described in section B.7.2 and computed as per relevant equations in section B.6.1 to obtain emissions reductions for the



monitored period. The DOE confirms that estimated emission reductions reported in the PDD are based on estimates provided in the gas gains original source /25/ used for defining the terms of the underlying oil production project as per the production sharing contract.

The validation team also validated the QA/QC & Calibration procedures established for the monitoring of these parameters against the recommendations as provided by the operator and as per CDM requirements. Similarly the processes established for the trainings of the relevant personnel were also validated by review of relevant records, discussions with personnel and review of other evidences provided.

The DOE acquainted with project measurement equipment, records maintained, and the person in charge of monitoring on the project site. In particular, the validation team cross checked the requirements for accuracy of measurement methods, calibration frequency for the parameters and QA/QC procedures of the parameters. The information in PDD on measuring equipment was cross checked against the local operational procedures and CDM requirements. Validation team also noted that the operational procedures envisage the emergencies defined as conditions under which monitoring is not possible due to an unexpected incident; in such cases the project entity will not claim emission reductions due to the project activity for the duration of the emergency. Hence compliance with the information in PDD was observed.

The following finding on Monitoring plan (124) was raised by the validation team and then addressed by the project participant by updating the PDD:

- CAR 18 was raised to indicate that CO<sub>2</sub> emission factor of the recovered gas shall be measured to calculate project emissions from gas combustion in gas turbines as per the original approach to calculate  $PE_{CO_2, fossil fuels, y}$  in equation (2) and included in Section 7.1.
- CAR 19 indicates that no specific information is provided in Section B.7.1 for measured gas volume and NCV as to the measurement methods and procedures, including a specification of standards and calibration procedures to be applied, accuracy of the measurement method, and allocation of responsibility for measurements.
- CAR 20 requests to provide a detailed description of the monitoring plan as to measurements of gas NCV.
- CAR 21 requests to provide transparency as to responsibility for monitoring at each of five project sites.





- CAR 22 concerns that the responsibilities for and institutional arrangements for data collection and archiving are not indicated

Hence, from the above description, the Validation Team confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design and that the project participant is able to implement the monitoring plan. Hence, the monitoring plan is in accordance with the Para 124 of the VV Manual.

### **3.9 Sustainable development (127)**

The host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party. Refer to item 3.1 of the LoA.

In PDD, under heading "Project Description" it is mentioned that 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.

### **3.10 Local stakeholder consultation (130)**

The steps taken to assess the adequacy of the local stakeholder consultation are described below.

The project is located in the middle of the Omani desert on an existing oil field, while the nearest town Ibri about 50 km away. The validation team passed this city when was driven to the validation project site Wadi Latham (WL). Only one small tribe leaves nearby. All men from the tribe are employed on the project site at the block 9 oil field and the tribe mainly consists of members of the same family. Therefore no formal written invitation for comments was considered necessary nor practical or most efficient, and the members of the tribe were informed orally in an open and transparent manner by the Health and Safety Department of the Operator on-site. Questionnaires were distributed that contained a description of the project activity and reasonable time for comments was given.





The validation team conducted on 26/06/2011 consultations with Occidental Oman employees which belonged to the local tribe. Only positive attitude to the project was stated based on the firm understanding that the project provides work places for the local people and improves environment.

In order to confirm the impact of the project on local stakeholders, the project entity carried out a separate consultation of local stakeholders near the project site on July 2nd and 4th 2010. A total number of 20 questionnaires have been filled in and outcome of the survey is provided in the PDD section E.2.

The results confirmed the interviews conducted by the DOE. The 100% of the stakeholders support the gas recovery project for its contribution to environment. All of the participants agreed that the project will bring no negative impact on economy, environment or society. Local stakeholders consider that the project will be bring benefit and support the project implementation.

The following findings on Local stakeholder consultation (130) were raised by the validation team and then addressed by the project participant by updating the PDD:

- CL 07 requests to provide the DOE a sample invitation for comments by local stakeholders.
- CL 08 requests to provide the DOE filled-in questionnaire.

The validation team hereby confirms that the process of local stakeholder consultation is observed to be adequate.

### **3.11 Environmental impacts (133)**

During the site visit and interview with the Ministry of Oil & Gas of the Sultanate of Oman the DOE was advised that there is no binding national/regional regulation in Oman as to undertake an environmental impact assessment for the proposed project activity.

The main regulation with regard to requirements to undertake an EIA is the Royal Decree No. 114/2001 issued the Law on Conservation of the Environment and Prevention of the Pollution. The decree states "The owner of any source or area of work which – according to the basis specified by the Ministry – may constitute an avoidable or curable risk to the environment, shall submit, prior to the application for the environmental permit, a detailed environmental impact assessment study confirming that the benefits of the source or area of work surpass the



potential damage to the environment.” And also “No permit shall be given to practice any activity, which may cause inevitable or incurable damage to the environment.”

The environmental permit granted to the operator of Block 9 was renewed for the 7th time on 25/07/2010 by Ministry of Environment and Climate Affairs.

The project is located in landscape which has high sand dune area and gravel plains. There are no local residents next to the project site. Thus, the project has limited impacts on local residents. Furthermore, the project has been built on an existing oil field for which an environmental impact assessment had already been approved by Omani Government.

In light of the above analysis, it is reasonably concluded that the proposed project activity has no significant negative impacts on the ambient environment during the construction and operation period. Some impacts are short-term, and others are mitigated through appropriate preventive and mitigation measures. Therefore, this project does not have significant negative environmental impact.

The following finding on Environmental impacts (133) consultation was raised by the validation team and then addressed by the project participant by updating the PDD:

- CL 06 requests to clarify if there are Host Party requirements to undertake the environmental impact assessment for the project like the present one. To clarify this issue the PDD was updated and the CL was closed.

The validation team confirms that the environmental impacts of the project are not significant as considered by the project participant and by the local authorities.

#### **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

The PDD using methodology ACM0009 was webhosted on the UNFCCC website from 23/06/2011 to 22/07/2011 for global stakeholders comments as per CDM requirements.



The project received comments named “Compilation of submitted inputs” submitted by the anonymous “sud” and published on UNFCCC site<sup>4</sup>.

DOE response to the above comments is reported in Appendix B. All comments are fully addressed in the PDD and validation report.

## 5 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the CDM project Gas Recovery and Utilization at Block 9 at Safah Oil Field, A'Dhahirah region of the Sultanate of Oman. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides an investment analysis and common practice analysis to determine that the project activity itself is not the baseline scenario.

By associated gas recovery and utilization at Block 9, the project is likely to result in reduction of GHG emissions on the average of 775,250 tCO<sub>2</sub> per annum over the first crediting period. The investment and common practice analyses demonstrate that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (final version 6.0) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfilment of stated

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<sup>4</sup><http://cdm.unfccc.int/Projects/Validation/DB/A6PSQS0172NWYVZXZOHQYT05XKYCT1/vi ew.html>



criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests registration of Associated Gas Recovery and Utilization at Block 9 as CDM project activity.



## 6 REFERENCES

### Category 1 Documents:

Documents provided by project participants that relate directly to the GHG components of the project.

- /1/ Webhosted PDD "Associated Gas Recovery and Utilization at Block 9" Version 1.0 dated 20 June 2011.
- /2/ Revised PDD "Associated Gas Recovery and Utilization at Block 9" Version 6.0 Dated 30 December 2012.
- /3/ Revised Block 9 ER Calculation Excel File dated 24 December 2012.
- /4/ Revised Block 9 IRR Calculation Excel File dated 24 December 2012..

### Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

- /5/ Approved CDM methodology: AM0009/Version 06.0.0
- /6/ Tool for the demonstration and assessment of additionality/Version 06.1.0
- /7/ Guidelines on the assessment of investment analysis/Version 05
- /8/ Oil concessions map Oman
- /9/ Drawings/layouts of project sites
- /10/ Evidence Investment Decision, Project Start Date and Investment
- /11/ Project authorization request – Operator onsite
- /12/ Letter of Ministry of Oil & Gas to Occidental Oman to develop the CDM project
- /13/ Oman DNA LoA
- /14/ UAE LoA issued to Oman Trading International Ltd. dd.17/07/2012
- /15/ Oman DNA authorization for Ministry of Oil & Gas (in DNA LoA)
- /16/ UAE DNA authorization for Oman Trading International(in DNA LoA)
- /17/ Oxy statement on O&M, project implementation and financing
- /18/ Daily operations reports – Onsite operator
- /19/ Gas composition protocols
- /20/ Liquid Gains Model report prepared by onsite operator
- /21/ email information from operator on oil production 2012 (350 days evidence)
- /22/ Gas sale and purchase agreement
- /23/ Oil price budgeted Oman 2008
- /24/ Production loss data 2010 2011 "Oman north losses"
- /25/ Gas gains original source – onsite operator
- /26/ Oman State General Budget 2008
- /27/ Amendment to Suneinah block
- /28/ EPSA – Exploration and Production Sharing Agreement
- /29/ Oman tax law
- /30/ Tax receipts – onsite operator



- /31/ Investment decision letter – Project participant
- /32/ 2008 gas gains confirmation letter – operator onsite
- /33/ Letter from Ministry of Oil & Gas confirming PSA is applicable to proposed project
- /34/ Daily flared volumes at CPF, Jan 08 – Dec 09
- /35/ Oxy 2008 annual report
- /36/ Royal decree N 114/2001
- /37/ Press Release on the proposed CDM project
- /38/ World bank flaring policy overview
- /39/ No objection letter – Omani DNA – 30 July 2011
- /40/ Environmental Permit
- /41/ Ministry decision 5/86 dated 17 May 1986, Regulations for Air Pollution Control from Stationary Sources
- /42/ Compressors specifications
- /43/ Gas turbines specifications
- /44/ EPA influence on ambient temp on gas turbines
- /45/ Acts of compressors commissioning
- Documents related to DOE responses to UNFCCC secretariat check**
- /46/ Statement from onsite operator (Dec. 2012) regarding estimation of gas gains and actual volumes (“statement gas and gains”)
- /47/ Project invoices (total 36 invoices provided)
- /48/ Oxy B9 Monthly Gas invoice, Nov. 2012
- /49/ Oman State General Budget 2009
- /50/ email communication with UN’s CDM helpdesk
- /51/ Press release from Petroleum Development Oman

**Persons interviewed:**

List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

- /1/ Mr. ZaidKhamis - DG Ministry of Oil & Gas.
- /2/ Mr. Hamed Al Mashaikhi – Oman Trading International.
- /3/ Mr. Hassan Al Ajimi – HES Team Leader Occidental Oman.
- /4/ Mr. Salim Al Derai – Production Supervisor
- /5/ Mr. Richard Smith – Electrical Supervisor.
- /6/ Mr. Christophe Assicot – Consultant Caspervandertak Consulting
- /7/ Mrs. Deng Ping – Consultant Caspervandertak Consulting
- /8/ Mr. Mohammed Al Derai – Tanama – member of local tribe
- /9/ Mr. Omar Al Derai – Tanama – member of local tribe



## 7 CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

### **Mr. Leonid Yaskin, PhD (thermal engineering)**

Team Leader Lead Verifier

Bureau Veritas Certification Rus General Director, JI Operational Manager, Lead Auditor, IRCA Lead Tutor, Lead Verifier, BREEAM Assessor

He has over 30 years of experience in heat and power R&D, engineering, and management, environmental science and investment analysis of projects. He worked in Krrzhizhanovsky Power Engineering Institute, All-Russian Teploelectroproject Institute, JSC Energoperspektiva. PhD in thermal engineering. He worked for 8 years on behalf of European Commission as a monitor of energy and environmental Technical Assistance Projects. He is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). He performed over 250 audits since 2002. Also he is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, a Lead Tutor of the IRCA registered OHSAS 18001 Lead Auditor Training Course, and a Lead Tutor of the IRCA registered ISO 50001 Auditor Conversion Course. He is an Assuror of Social Reports and licensed BREEAM assessor. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination/verification/ITR of over 100 GHG projects.

### **Mr. Usman Haider**

Team Member, Verifier

Bureau Veritas Certification Dubai, UAE.

He is Professional Engineer - B.E (Bachelor of Engineering) in Chemical Engineering, Masters in Total Quality Management. He has undergone intensive training on Clean Development Mechanism. IRCA Accredited Lead Auditor courses in QMS, EMS, OHSAS, Energy Management Systems and Social compliance SA 8000 under SAI. 09 Years+ extensive work experience in the field of Engineering, operations and quality management with expertise in Oil& Gas processing, manufacturing and services Sectors. Working as Verifier CDM and Lead Auditor QHSE in 03rd party certification, have been involved in the validation of different CDM/ Gold Standard projects and conducted more than 600 compliance audits in QHSE including Environmental management systems, Energy Management systems & GHG Accounting & reporting. Worked for Natural gas distribution/ transmission sector involved in the routine operations, calibrations of monitoring and measuring equipments, monitoring and management of gas losses control assignments and QHSE implementation. Have production and Operations management experience in the manufacturing sector. Have





done Consultancy and trainings for Eng operations & Management systems development and implementation.



## APPENDIX A VALIDATION PROTOCOL

**TABLE 1 VALIDATION REQUIREMENTS BASED ON THE CLEAN DEVELOPMENT MECHANISM VALIDATION AND VERIFICATION MANUAL (VERSION 01.1)**

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
<b>1. Approval</b>			<b>COUNTRY (Oman)</b>	<b>COUNTRY B (UAE)</b>		
a. Have all Parties involved approved the project activity?	VVM	44	<b>CAR 01.</b> There is no approval from the party that has been submitted to the DOE.	<b>CAR 01.</b> There is no approval from the party that has been submitted to the DOE.	CAR 01	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participants or directly from the DNA)	VVM	45	Please refer to question 1.a	Please refer to question 1.a	-	OK
c. Does the letter of approval from DNA of each Party involved:	VVM	45	Please refer to question 1.a	Please refer to question 1.a	-	OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
i.confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a	Please refer to question 1.a	Please refer to question 1.a	-	OK
ii.confirm that participation is voluntary?	VVM	45.b	Please refer to question 1.a	Please refer to question 1.a	-	
iii.confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c	Please refer to question 1.a	Please refer to question 1.a	-	OK
iv.Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d	Please refer to question 1.a	Please refer to question 1.a	-	OK
f. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Please refer to question 1.a	Please refer to question 1.a	-	OK
g. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA)?	VVM	47	Please refer to question 1.a	Please refer to question 1.a	-	OK
d. If there is doubt with respect to (e) above, was verified	VVM	47	Please refer to question 1.a	Please refer to question 1.a	-	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
with the DNA that the letter of approval is valid for the proposed CDM project activity under validation?						
e. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	Please refer to question 1.a	Please refer to question 1.a	-	OK
f. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48	Please refer to question 1.a	Please refer to question 1.a	-	OK
<b>2. Participation</b>			<i>PP1 (insert PP1 name)</i>	<i>PP2 (insert PP2 name)</i>		
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Yes, The Government of the Sultanate of Oman, represented by the Ministry of Oil & Gas (public entity) has been listed as a project participant.	Yes, Oman Trading International has been listed as a project participant.		OK
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	<b>CAR 02.</b> The participation of each project participant has not been approved.	<b>CAR 02.</b> The participation of each project participant has not been approved.	CAR 02	OK
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes, the project participants are listed in tabular form in section A.3	Yes, the project participants are listed in tabular form in section A.3 of the		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PDD?	VVM	52	of the PDD. Yes, the contact details provided in Annex 1 of the PDD.  <b>CAR 03.</b> Please indicate e-mail or fax of Mr. Al Siyabi.	PDD. Yes, the contact details provided in Annex 1 of the PDD.  <b>CAR 03.</b> Please indicate e-mail or fax of Mr. Al Maawali.	CAR 03	OK
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	Please refer to question 2.b.	Please refer to question 2.b.	-	OK
f. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No entities other than the indicated project participants are included in these sections of the PDD.			OK
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Please refer to question 2.b	Please refer to question 2.b	-	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
h. Is there doubt with respect to (g) above?	VVM	53	Please refer to question 2.b	Please refer to question 2.b	-	OK
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed CDM project participant?	VVM	53	Please refer to question 2.b	Please refer to question 2.b	-	OK
<b>3. Project desing document</b>						
a. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes, the PDD has been prepared on the basis of the latest PDD template which is Version 03 dated 28 July 2006.			OK
b. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Yes, the PDD is basically in accordance with the applicable CDM requirements for completing the PDD.			OK
c. In CDM-PDD section A.1 are the following provided?	EB 41	Ann 12				
i. Title of project	EB 41	Ann 12	Title of the project provided is "Associated Gas Recovery and Utilization at Block 9".			OK
ii. Current version number and date of document	EB 41	Ann 12	Version number will be changed after each revision. The current version is 1.0 dated 20/06/2011. Date of PDD is before the site			OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			visit and it will be also changed after each revision.		
d. In CDM-PDD section A.2 are following provided (max. one page)?	EB 41	Ann 12			OK
i. A brief description of the project activity covering purpose which includes the scenario existing prior to the start or project, present scenario and baseline scenario	EB 41	Ann 12	<p>PDD reads:</p> <p>"The Associated Gas Recovery and Utilization at Block 9 project consists of the recovery and utilization of natural gas found in association with oil at Block 9, Safah oil field, Sultanate of Oman. Block 9 is operated by Occidental of Oman Inc. under a development and production sharing agreement with the Ministry of Oil and Gas. 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, where the gas will be utilized to meet energy demand. Main equipment necessary for the proposed project activity comprises motor-driven reciprocating compressors installed at several locations on site.</p> <p>The scenario existing prior to the start of the implementation of the proposed project</p>	CAR 04	OK





CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>activity is that associated gas would continue to be flared on site while non-associated gas or other fossil sources would be combusted to meet energy needs of end-users. The baseline scenario is the same as the scenario existing prior to the start of implementation of the proposed project activity".</p> <p><b>CAR 04.</b> Ares of concern as to the project description are as follows:</p> <p>(a) The purpose of the project activity is not included;</p> <p>(b) The scenario existing prior to the start of the project (baseline scenario) does not include reinjection of about half of the gas for the purpose of the gas lift process;</p> <p>(c) Pipelines are not indicated as main equipment.</p>		
ii. Explanation on how the GHG emission reductions are effected	EB 41	Ann 12	PDD reads: "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."		OK
iii. The PP's views on the contribution of project activity to sustainable development	EB 41	Ann 12	<p>PDD reads "The proposed project activity will contribute to the Oman national and local sustainable development and also generates the following benefits:</p> <ul style="list-style-type: none"> <li>- Benefit the local air conditions by reducing the air pollution due to flaring.</li> </ul>		OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<ul style="list-style-type: none"> <li>- Efficient use of natural resources due to the utilization of the gas that would be flared in the absence of the project.</li> <li>- New job opportunities due to the construction activities.</li> <li>- Reduce the combustion of fossil fuels at end-users that are produced from non-associated gas or other fossil sources".</li> </ul>		
e. In CDM-PDD section A.3 are following provided in the tabular format?	EB 41	Ann 12			
i. List of project participants and parties	EB 41	Ann 12	Yes, the list of the project participants and parties is provided in tabular format.		OK
ii. Identification of Host Party			The host party identified is the Sultanate of Oman.		OK
iii. Indication whethre the Party wishes to be considered as project participant	EB 41	Ann 12	It is stated that parties do not wish to be considered as a project participant.		OK
f. In CDM-PDD section A.4.1 are following provided?	EB 41	Ann 12			
i. Technical description, location, host party(ies) and address as required	EB 41	Ann 12	Technical description, location, host party(ies) and address are provided as required		OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 41	Ann 12	PDD reads" The proposed project is located at Block 9, Safah oil field in A'Dhahirah Region of Northern Oman. Nearest town is Ibri which is about 50 kilometres from the site. The site location's approximate	CL 01	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			coordinates are east longitude of 55°27'40" and north latitude of 23°11'20".  <b>CL 01.</b> The project site consists of five locations and it is not clear which particular location is identified by the indicated coordinates.		
g. In CDM-PDD section A.4.2 is the list of categories of project activities provided?	EB 41	Ann 12	It is indicated that the proposed project activity falls within the following large scale project category: Sectoral Scope 10: Fugitive emissions from fuel (solid, oil, gas).  <b>CAR 05.</b> Please indicate the technical area as per the CDM Accreditation Standard Version 02.	CAR 05	OK
h. In CDM-PDD section A.4.3 are following provided?	EB 41	Ann 12			
i. A description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies)	EB 41	Ann 12	It is indicated that the staff of the project activity will receive the appropriate training on the operation of the associated gas recovery equipment and CDM related knowledge.		OK
ii. Explanation of purpose of project activity with scenario existing prior to the start of project, scope or present activities and the baseline scenario	EB 41	Ann 12	It is indicated that "the proposed project activity aims to recover associated gas flow that is currently flared at 5 different locations in Safah oil field. Gas will be transported to a processing plant on-site where it will be processed then further transported and sold to gas pipeline".		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. List and arrangement of the main manufacturing/production technologies, systems and equipments involved	EB 41	Ann 12	The scope of activities that are being implemented within the project activity with a list of equipment and systems to be installed is described.  <b>CAR 06.</b> Please describe: (a) the capacity, load factor, efficiency and life time of the compressors to be installed; (b) the pipeline systems to be installed; (c) gas amounts to be transported; (d) monitoring equipment.	CAR 06	OK
iv. The emissions sources and GHGs involved	EB 41	Ann 12	<b>CAR 07.</b> The description of the project activity does not describe GHG involved from gas flaring.	CAR 07	OK
i. In CDM-PDD section A.4.4 is the estimation of emission reductions provided as requested in a tabular format?	EB 41	Ann 12	Yes, the estimation of emission reductions is provided as requested in a tabular format.		OK
j. In CDM-PDD section A.4.5 is Information regarding Public funding provided?	EB 41	Ann 12	It is indicated that no public funding from Annex I Parties is involved in this project.		OK
k. In CDM-PDD section B.1 are following provided?	EB 41	Ann 12			
i. The approved methodology and version number	EB 41	Ann 12	The approved methodology AM0009 Version 06.0.0 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented". <b>DOE Note: AM0009 Version 06.0.0 was</b>		OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<b>indicated hereunder instead of Version 04 which was applied in the PDD Version 5.0.</b>		
ii. Any methodologies or tools which the above approved methodology draws upon and their version number	EB 41	Ann 12	<b>CAR 08.</b> The methodologies which the approved methodology draws upon are not indicated. Version numbers of the tools are not indicated.	CAR 08	OK
I. In CDM-PDD section B.2 are following provided?	EB 41	Ann 12			
i. Justification of the choice of methodology that the project activity meets each of the applicability conditions	EB 41	Ann 12	Meeting of each of applicability conditions of the applied methodology AM0009 Version 06.0.0 is justified.  <b>CAR 09.</b> It is not shown that the project activity meets the applicability conditions included in the tools referred to in the methodology.	CAR 09	OK
ii. Documentations with references that had been used. This can be provided in Annex 3 instead	EB 41	Ann 12	<b>CAR 10.</b> Please explain and refer to documentation that has been used for justification of the AM0009 applicability conditions (for instance the working design documentation).  <b>CL 02.</b> Please clarify how the AM0009 applicability condition as regards the equality of reinjected gas amount in the project activity and the baseline is maintained.	CAR 10 CL 02	OK OK
m. In CDM-PDD section B.3 are following provided?	EB 41	Ann 12			
i. Description of all sources	EB 41	Ann	All sources and gases included in the project		OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and gases included in the project boundary in the table		12	boundary are described in Table B.1.		
ii. A flow diagram of the project boundary physically delineating the project activity	EB 41	Ann 12	A flow diagram of the project boundary physically delineating the project activity is provided on Figure B.1.		OK
iii. The flow diagram with all equipments, systems and flows of mass and energy etc	EB 41	Ann 12	The systems and flows of mass and energy are depicted on the diagram.		OK
n. In CDM-PDD section B.4 are following provided?	EB 41	Ann 12			
i. Explanation how the most plausible baseline scenario is identified in accordance with the selected baseline methodology	EB 41	Ann 12	<p>Selection of the most plausible scenario follows the procedure in the applied methodology AM0009 Version 06.0.0.</p> <p><u>Step 1: Identify plausible alternative scenarios</u>  The list of alternatives from AM0009 Version 06.0.0 was reasonably screened what resulted in identification of two options being realistic combinations of baseline alternative scenarios. Option 1 is the continuation of the current gas management with flaring the gas and Option 2 is the project activity without CDM registration.</p> <p><u>Step 2: Evaluate legal aspects</u></p>	CL 03	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>It is concluded in PDD that both Option 1 and Option 2 outlined under Step 1 are in compliance with mandatory legislation and regulations taking into account the enforcement in Oman and EB decisions on national and/or sectoral policies and regulations. Involvement of the Ministry of Oil &amp; Gas as the project participant is likely to ensure the compliance.</p> <p><b>CL 03.</b> Please make it clear if the gas flaring at the block 9 does not violate the emission standards as prescribed by the Ministerial Decision 5/86 of May 17, 1986 (concerns smoke and sulphur).</p>		
ii. Justification of key assumptions and rationales	EB 41	Ann 12	The key assumption, namely, the selection of just two alternatives for the baseline scenario, has basically reasonable rationales. Refer to question n.i above.		OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources, etc.)	EB 41	Ann 12	<b>CAR 11.</b> Section B.4 does not provide transparent illustration of all data used to determine the baseline scenario, such as the recovered gas volume and NCV. Please refer to Formula (1) which does not indicate that the baseline emissions will be generated at five project locations.	CAR 11	OK
iv. A transparent and detailed description of the identified baseline scenario, including	EB 41	Ann 12	<b>CAR 12.</b> A transparent and detailed description of the identified baseline scenario including a description of the technology that	CAR 12	OK





## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity			would be employed and/or the activities that would take place in the absence of the proposed project activity is not provided.		
o. In CDM-PDD section B.5 are following provided?	EB 41	Ann 12			
i. Explanation of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology	EB 41	Ann 12	<p>The additionality of the project activity is demonstrated using Step 3 and Step 4 of AM0009.</p> <p><u>Step 3: Evaluate the economic attractiveness of alternatives</u> According to AM0009 Version 06.0.0) the economic attractiveness is assessed for those alternative scenarios that are feasible in technical terms and that are identified as permitted by law or other (industrial) agreements and standards in Step 2. The economic attractiveness is assessed by determining an expected Internal Rate of Return (IRR) of each alternative scenario.</p> <p>Option 1 being continuation of the current practice of gas flaring does not require any additional investments nor gains revenues.</p>	CAR 13 CAR 14	OK OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>Option 2, i.e. the project activity without CDM registration involves investment and revenues from the sale of product. The economic attractiveness of this alternative is assessed by determining an expected Internal Rate of Return (IRR) following the guidance for the investment analysis in the latest approved version of the “Tool for the demonstration and assessment of additionality”.</p> <p>As required by the methodology, the IRR should be determined using, inter alia, the following parameters as applicable to the relevant scenario:</p> <ul style="list-style-type: none"> <li>- Overall projected production of associated gas and/or gas-lift gas;</li> <li>- The projected quantity of gas recovered, gas flared, vented, consumed on-site, processed in a gas processing plant and/or compressed into a pipeline;</li> <li>- The agreed price for the delivery of recovered gas (e.g. from a Production Sharing Contract) to the gas pipeline or gas processing plant (if operated by a third party);</li> <li>- The net calorific value of the recovered gas;</li> <li>- Capital expenditure for all oil and gas</li> </ul>		



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>infrastructure needed in the relevant scenario, such as gas recovery facilities, pipelines, and gas processing plant (if applicable) etc. (CAPEX);</p> <ul style="list-style-type: none"> <li>- All operational expenditure associated with the respective scenario (OPEX);</li> <li>- All revenues from the operation of the alternative scenario, such as revenues from selling processed gas or other products of the gas processing plant or electricity;</li> <li>- Any profit sharing agreements and cost recovery, such as cost savings through the substitution of products by the recovered gas, if applicable.</li> </ul> <p>Financial input data for the investment analysis is presented in Table B.4. The benchmark was taken 10% as "suggested" (quoted by PDD) in AM0009. The results of the investment analysis complemented by the sensitivity analysis show that IRR remains below 10% benchmark. &lt;10%. It is concluded that Option 2 is not economically attractive.</p> <p><u>Step 4: Common practice analysis</u> It is argued that in Oman, flaring associated gas is common practice throughout the country due to large-scale oil exploration</p>		



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>activities. Based on the trend of satellite data for estimated gas flared volume in Oman in 2007 - 2010 it is concluded that the project is not the common practice.</p> <p><b>CAR 13.</b> It is not explicitly indicted in the PDD that Option 1, i.e. the business as usual is considered as the baseline scenario and that Option 2 i.e. the project activity is additional.</p> <p><b>CAR 14.</b> The common practice analysis is not in compliance with the Tool for the demonstration and assessment of additionality. Please analyze other activities similar to the proposed project activity (they are reported in Internet) and discuss any similar options that are occurring. Please link this analysis within clarification if there exist plants in Oman which process the associated petroleum gas.</p>		
ii. Justification of key assumptions and rationales	EB 41	Ann 12	<p>The DOE considers the selection of the two alternatives for the baseline scenario to be credible and complete.</p> <p><b>CAR 15.</b> Please justify the appropriateness of using the 10% benchmark for the project activity. Please take note that AM0009 does not suggest to take this benchmark without</p>	CAR 15	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources etc)	EB 41	Ann 12	justification. <b>CAR 16.</b> Justify and/or cite assumptions on input data for the investment analysis in a manner that can be validated by the DOE.	CAR 16	OK
iv. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation	EB 41	Ann 12	The starting date of the project activity is before the date of validation. As follows from Table B.7 the incentive from the CDM was seriously considered in the decision to proceed with the project activity.		OK
p. In CDM-PDD section B.6.1 are following provided?	EB 41	Ann 12			
i. Explanation as to how the procedures in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity	EB 41	Ann 12	Explanation is provided in Section B.6.1 as to as how the procedures in the approved methodology AM0009 Version 06.0.0 to calculate baseline emissions and emission reductions are applied to the proposed project activity. No leakage emission is considered as per AM0009 Version 06.0.0.  <b>CAR 17.</b> No explanation is provided in Section B.6.1 as to as how the procedures in the approved methodology AM0009 Version 06.0.0 to calculate project emissions are applied to the proposed project activity. In	CAR 17	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			emission reduction calculations, the project emissions are calculated as the product of the fixed value of gas volume, gas NCV and CO2 emission factor for methane. The approach to definition of gas consumption for compression of the gas transported to the processing plant is not provided nor is explained why the gas consumption does not decrease with the yearly decrease of gas recovery. The use of CO2 emission factor for methane is not conservative; the emission factor of the recovered associated gas shall be used.		
ii. Equations used in calculating emission reductions	EB 41	Ann 12	Equations used in calculating emission reductions are taken from the approved methodology AM0009 Version 06.0.0.		OK
iii. Explanation and justification for all relevant methodological choices, including different scenarios or cases, options and default values	EB 41	Ann 12	Explanation and justification for all relevant methodological choices, including different scenarios or cases, options and default values is generally provided with reference to the applied approved methodology.  Conclusion is pending a response to CAR 17.	Pending	OK
q. In CDM-PDD section B.6.2 are following provided?	EB 41	Ann 12			
i. A compilation of information on the data and parameters that are not	EB 41	Ann 12	Section B.6.2 provides information about the CO2 emission factor for methane which is the only parameter that is not monitored		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
monitored throughout the crediting period but that are determined only once and thus remain fixed throughout the crediting period and that are available when validation is undertaken			throughout the crediting period but that is determined only once and thus remains fixed throughout the crediting period and that is available when validation is undertaken.		
ii. The actual value applied	EB 41	Ann 12	The default value of CO2 emission factor for methane is taken from AM0009 Version 06.0.0.		OK
iii. Explanation and justification for the choice of the source of data	EB 41	Ann 12	Due explanation and justification for the choice of the source of ex-ante data for gas CO2 emission factor for methane are provided.		OK
iv. Clear and transparent references or additional documentation in Annex 3	EB 41	Ann 12	Additional baseline ex-ante information is provided in Annex 3.  <b>CAR 18.</b> Clear and transparent references for the source of ex-ante data for gas recovery are not provided.	CAR 18	OK
v. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity	EB 41	Ann 12	There is no indication in PDD that measured values of parameters are included in Section B.6.2.		OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
having undertaken the measurement, the date of measurement(s) and the measurement results					
r. In CDM-PDD section B.6.3 are following provided?	EB 41	Ann 12			
i. A transparent ex ante calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology	EB 41	Ann 12	<p>A transparent ex ante calculation of project and baseline emissions is provided on excel spreadsheet "20jun2011 Block 9 ER calculation GSP version.xls" and in Tables B.8 and B.9.</p> <p><b>CL 04.</b> Please explain why the sum of molar fractions of hydrocarbons in Table "Gross heating value measured by PO" 94% rather than 100%. Also please explain the meaning of gross value (net rather gross caloric value is used in AM0009 Version 06.0.0).</p> <p>Also CAR 17 applies what makes the calculations incorrect.</p>	CL 04	OK
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 41	Ann 12	Documentation on how each equation is applied is provided in a manner that enables the reader to reproduce the calculation.		OK
iii. Additional background information and or data in	EB 41	Ann 12	The excel spreadsheet was made available to the DOE.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Annex 3, including relevant electronic files (i.e. spreadsheets)					
s. In CDM-PDD section B.6.4 are the results of the <i>ex ante</i> estimation of emission reductions for all years of the crediting period, provided in a tabular format?	EB 41	Ann 12	Section B.6.4 presents the results of the <i>ex ante</i> estimation of emission reductions for all years of the crediting period in a tabular format.		OK
t. In CDM-PDD section B.7.1 are following provided?	EB 41	Ann 12			
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 41	Ann 12	Specific information is provided in Section B.7.1 on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity.  <b>CAR 18.</b> CO2 emission factor of the recovered gas shall be measured to calculate project emissions and included in Section 7.1.	CAR 18	OK
ii. For each parameter the following below information, using the table provided:	EB 41	Ann 12			
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national	EB 41	Ann 12	The source(s) of data that will be actually used for the proposed project activity are provided in the tabular form.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
statistics). Where several sources may be used, explain and justify which data sources should be preferred.					
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the	EB 41	Ann 12	<b>CAR 19.</b> No specific information is provided in Section B.7.1 for measured gas volume and NCV as on the measurement methods and procedures, including a specification of standards and calibration procedures to be applied, accuracy of the measurement method, and allocation of responsibility for measurements. Reference in Annex 4 to recording of data on power delivered to the grid has no sense.	CAR 19	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
responsible person/entity that should undertake the measurements and what is the measurement interval; (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.					
u. In CDM-PDD section B.7.2 are following provided?	EB 41	Ann 12			
i. A detailed description of the monitoring plan	EB 41	Ann 12	<b>CAR 20.</b> A detailed description of the monitoring plan as to measurements of gas NCV is not provided.	CAR 20	OK
ii. The operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the	EB 41	Ann 12	The operational and management structure for monitoring of emission reduction is generally described.  <b>CAR 21.</b> Please provide transparency as to responsibility for monitoring at each of five project locations.	CAR 21	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
project activity					
iii. The responsibilities for and institutional arrangements for data collection and archiving	EB 41	Ann 12	<b>CAR 22.</b> The responsibilities for and institutional arrangements for data collection and archiving are not indicated.	CAR 22	OK
iv. Indication that the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 41	Ann 12	Conclusion is pending a response to CAR 20 – CAR 22.	Pending	OK
v. Relevant further background information in Annex 4	EB 41	Ann 12	Further relevant background information is provided in Annex 4.  Also CAR 19 applies: reference in Annex 4 to recording of data on power delivered to the grid has no sense.	Pending	OK
v. In CDM-PDD section B.8 are following provided?	EB 41	Ann 12			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 41	Ann 12	Date of completion of the application of the methodology to the project activity study is 15/06/2011.		OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project	EB 41	Ann 12	Contact information is provided: Caspervandertak Consulting BV Tel: +86-10-84505756 Fax: +86-10-84505758  Please change the term “person” to “entity”.	.Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activity					
iii. Indication if the person/entity is also a project participant listed in Annex 1	EB 41	Ann 12	It is indicated that Caspervandertak Consulting BV is not Project participant.		OK
w. In CDM-PDD section C.1.1 are following provided?	EB 41	Ann 12			
i. The starting date of a CDM project activity, which is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB 41	Ann 12	01/03/2008 being the date of signing the earliest project contract.  <b>CAR 23.</b> Table B.7 indicates 01/04/2008 as the start of the project activity. Please provide consistency.	CAR 23	OK
ii. A description of how this start date has been determined, and a description of the evidence available to support this start date	EB 41	Ann 12	<b>CL 05.</b> Please provide the DOE a copy of the contract.	CL 05	OK
iii. If this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a of how the benefits of the	EB 41	Ann 12	The starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by the DOE. There is a description in Section B.5 of how the benefits of the CDM were seriously considered prior to the starting date.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
CDM were seriously considered prior to the starting date (EB41, Para 68).					
x. In CDM-PDD section C.1.2 is the expected operational lifetime of the project activity in years and months provided?	EB 41	Ann 12	Expected operational lifetime of the project activity is provided as 11 years 0 months.		OK
y. In CDM-PDD section C.2 is it stated whether the project activity will use a renewable or a fixed crediting period and is C.2.1 or C.2.2 completed accordingly?	EB 41	Ann 12	It is indicated in Section C.2.2 that the project activity will use a fixed crediting period.		OK
z. In CDM-PDD section C.2.1 is it indicated that each crediting period shall be at most 7 years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable?	EB 41	Ann 12	N/A		OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
aa. In CDM-PDD section C.2.1.1 are dates in the following format: (DD/MM/YYYY) provided?	EB 41	Ann 12	N/A		OK
bb. In CDM-PDD section C.2.1.2 is the length of the first crediting period in years and months provided?	EB 41	Ann 12	N/A		OK
cc. In CDM-PDD section C.2.2 is the fixed crediting period at most ten (10) years provided?	EB 41	Ann 12	The length of the fixed crediting period is 10 years.  <b>CAR 24.</b> In fact the length of the fixed crediting period is 8 years since according to Table B.10 no emission reduction is generated in 2020 and 2021.	CAR 24	OK
dd. In CDM-PDD section C.2.2.1 are the dates provided in the following format: (DD/MM/YYYY)?	EB 41	Ann 12	01/01/2012.		OK
ee. In CDM-PDD section C.2.2.2 is the length of the crediting period in years and months provided?	EB 41	Ann 12	10 years 0 months.  Conclusion is pending a response to CAR 24.	Pending	OK
ff. In CDM-PDD section D.2 are the conclusions and all references to support documentation of an environmental impact assessment undertaken in	EB 41	Ann 12	Environmental impacts of the project are not considered significant by the project participants and the local authorities.  <b>CL 06.</b> Please clarify if there are Host Party requirements to undertake an environmental	CL 06	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
accordance with the procedures as required by the Host Party, if environmental impacts are considered significant by the project participants or the Host, provided?			impact assessment for the projects like the present one.		
gg. In CDM-PDD section E.1 are the following provided?	EB 41	Ann 12			
i. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	EB 41	Ann 12	The process by which comments by local stakeholders have been invited and compiled is described. <b>CL 07.</b> Please provide DOE a sample invitation for comments by local stakeholders.	CL 07	OK
ii. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality	EB 41	Ann 12	<b>CL 08.</b> Please provide the DOE filled in questionnaires.	CL 08	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provisions of the CDM modalities and procedures.					
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.	EB 41	Ann 12	The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.		OK
hh. In CDM-PDD section E.2 are following provided?	EB 41	Ann 12			
i. Identification of local stakeholders that have made comments	EB 41	Ann 12	The conclusion is pending a response to CL 08.		OK
ii. A summary of these comments.	EB 41	Ann 12	A summary of these comments is provided in Table E.1.		OK
ii. In CDM-PDD section E.3 is the explanation of how due account have been taken of comments received from local stakeholders provided?	EB 41	Ann 12	The comments received from the project participants through questionnaire survey were positive. Given the full support from local stakeholders, there is no need to make further adjustments to the design and implementation of the project.		OK
jj. In CDM-PDD Annex 1 are the following provided?	EB 41	Ann 12			
i. Contact information of project participants	EB 41	Ann 12	Contact information of project participants is provided in Annex 1.		OK
ii. For each organisation listed in section A.3 the following mandatory fields:	EB 41	Ann 12	For each organization listed in section A.3 the following mandatory fields are filled in: Organization, Name of contact person,	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail			Street, City, Postfix/ZIP, Country, Telephone..  Conclusion is pending a response to CAR 03.		
kk. In CDM-PDD Annex 2 is information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties provided?	EB 41	Ann 12	No public funding from Annex I Parties is involved in this project.		OK
ll. In CDM-PDD Annex 3 is the background information used in the application of the baseline methodology provided?	EB 41	Ann 12	In CDM-PDD Annex 3 just limited background information used in the application of the baseline methodology is provided.		OK
mm. In CDM-PDD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB 41	Ann 12	The background information used in the application of the monitoring methodology is provided in Annex 4.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>4. Project description</b>					
a. Does the PDD contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?	VVM	58	Yes, the PDD contains basically a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.  Conclusion is pending a response to CAR 04 and CAR 06.	Pending	OK
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59			
i. sufficiently covering all relevant elements?	VVM	59	Yes, the PDD is sufficiently covering all relevant elements		OK
ii. accurate?	VVM	59	Yes, the PDD is basically accurate		OK
iii. providing the reader with a clear understanding of the nature of the proposed CDM project activity?	VVM	59	Yes, the PDD is providing the reader with a clear understanding of the nature of the proposed CDM project activity		OK
c. Is the proposed CDM project activity in existing facilities or utilizing existing equipments?	VVM	60	No, the proposed CDM activity is not carried out in existing facilities or utilizing existing equipment.		OK
d. Is the CDM project activity one of the following types:	VVM	60			
i. Large scale?	VVM	60	Yes, this is large scale project.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	Not applicable.		OK
iii. Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes?	VVM	60	Not applicable.		OK
e. If yes to (c) and (d) above, was a physical site inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified in the methodology?	VVM	60	Not applicable.		OK
f. If yes to (d.iii) above, was the number of physical site visits base on samping?	VVM	60	Not applicable.		OK
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	Not applicable.		OK
h. For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	61	Not applicable.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a physical site inspection conducted?	VVM	62	Not applicable.		OK
j. If no, was it appropriately justified?	VVM	62	Not applicable.		OK
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	Yes, the proposed project activity changes the existing process of gas management.		OK
l. If yes, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM	63	Yes, the project description clearly states the differences resulting from the project activity compared to the pre-project situation?		OK
<b>5. Baseline and monitoring methodology</b>					
<b>a. General requirement</b>					
a. Do the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?	VVM	65	Yes, the project participants use the approved CDM methodology AM0009 Version 06.0.0.		OK
b. Is the selected methodology applicable to the project	VVM	66	Yes, the selected methodology is applicable to the project activity.		OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c. Had the PP correctly applied the selected methodology?	VVM	66	Yes, PP correctly applied the selected methodology.		OK
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Yes, the selected methodology has been correctly applied with respect to project boundary.		OK
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Yes, the selected methodology been correctly applied with respect to baseline identification.		OK
f. Had the selected methodology been correctly applied with respect to algorithms and/or formulae used to determine emission reductions?	VVM	67	Conclusion is pending a response to CAR 17.	Pending	OK
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67	Conclusion is pending a response to CAR 13 – CAR 16.	Pending	OK
i. Specific questions per methodology regarding application of the methodology with respect to additionality.			No specific questions are raised by DOE.		OK
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	Conclusion is pending a response to CAR 18 – CAR 22.	Pending	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Specific questions per methodology regarding application of the methodology with respect to monitoring methodology.			No specific questions are raised by DOE.		OK
<b><i>b. Applicability of the selected methodology to the project activity</i></b>					
b. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity?	VVM	68	Yes, he selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity		OK
i. Specific questions per methodology regarding applicability.			No specific questions are raised by DOE.		OK.
c. Is the methodology correctly quoted?	VVM	70	Yes, the methodology is correctly quoted.		OK
d. Are the applicability conditions of the methodology met?	VVM	71	Yes, the applicability conditions of the methodology are basically met.  Conclusion is pending a response to CAR 09.	Pending	OK
ii. Specific questions per methodology regarding applicability conditions.			Conclusion is pending a response to CAR 09.	Pending	OK
e. Is the project activity	VVM	71	No, the project activity is not expected to		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
expected to result in emissions other than those allowed by the methodology?			result in emissions other than those allowed by the methodology		
f. Is the choice of the methodology justified?	VVM	71	Yes, the choice of the methodology is justified.		OK
g. Have the project participants shown that the project activity meets each of the applicability conditions or the approved methodology?	VVM	71	Yes, the project participants have shown that the project activity meets each of the applicability conditions or the approved methodology.  Conclusion is pending a response to CAR 09.	Pending	OK
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71	Conclusion is pending a response to CAR 09.	Pending	OK
iii. Specific questions per methodology regarding applicability conditions of any tool or other methodology component referred to the methodology.		71	Conclusion is pending a response to CAR 09	Pending	OK
i. Is the DOE, based on local and sectoral knowledge, aware that comparable	VVM	71	The DOE, based on local and sectoral knowledge, is not aware that comparable information is available from sources other		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
information is available from sources other than that used in the PDD?			than that used in the PDD.		
j. If yes, was the PDD cross checked against the other sources to confirm that the project activity meets the applicability conditions of the methodology? (provide the reference to these choices)	VVM	71	Not applicable.		OK
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	The DOE has made a determination regarding the applicability of the selected methodology to the proposed CDM project activity.		OK
l. If no, clarification of the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	Not applicable.		OK
m. If answer to (5.b.c) above is "no", revision or deviation from the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	73	Not applicable.		OK
n. If yes to (5.b.k) and (5.b.l) above, a request for	VVM	74	Not applicable.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
registration was submitted before the CDM Executive Board has approved the proposed deviation or revision?					
<b>c. Project boundary</b>					
a. Does the PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity?	VVM	78	The PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity.		OK
i. Specific questions per methodology regarding application of the methodology with respect to project boundary.			No specific questions are raised by DOE.		OK
b. Is the delineation in the PDD of the project boundary correct?	VVM	79	Yes, the delineation in the PDD of the project boundary is correct.		OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the	VVM	79	Yes, the delineation in the PDD of the project boundary meets the requirements of the selected baseline.		OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
selected baseline?					
d. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes, all sources and GHGs required by the methodology have been included within the project boundary with a reservation below.		OK
e. Does the methodology allow project participant to choose whether a source or gas is to be included within the project boundary?	VVM	79	Yes, the methodology allows project participant to choose whether a source or gas is to be included within the project boundary.		OK
f. If yes, have the project participants justified that choice?	VVM	79	Yes, the project participants justified that choice with a reservation below.		OK
g. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Yes, the justification provided is reasonable.		OK
<b>d. Baseline identification</b>					
a. Does the PDD identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the	VVM	81	Yes, the PDD identifies the baseline for the proposed CDM project activity as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed CDM project activity?					
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82	Yes, the procedures contained in the methodology AM0009 Version 06.0.0 to identify the most reasonable baseline scenario have been correctly applied.		OK
i. Specific questions per methodology regarding application of any procedure contained in the methodology to identify the most reasonable baseline scenario.			No specific questions are raised by DOE.		OK
c. Does the selected methodology require use of tools (such as the "Tool for the demonstration and assessment of additionality" and the "Combined tool to identify the baseline scenario and demonstrate additionality") to establish the baseline scenario?	VVM	82	Yes, the selected methodology requires the use of the "Tool for the demonstration and assessment of additionality" to establish the baseline scenario		OK
d. If yes, was the methodology consulted on the application of these tools? (In such cases, the guidance in the methodology shall supersede	VVM	82	Yes, the methodology was consulted regarding the application of this tool.		OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the tool.)					
i. Specific questions per methodology regarding application of tools to establish the most reasonable baseline scenario.			No specific questions are raised by DOE.		OK
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	Yes, the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario.		OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to those required by the methodology reasonable in the context of the proposed CDM project activity?	VVM	83	All scenarios considered by the project participants are reasonable in the context of the proposed CDM project activity. No scenarios supplementary to those required by the methodology were considered.		OK
g. Has any reasonable alternative scenario been excluded?	VVM	83	None reasonable alternative scenario has been excluded.		OK
h. Is the baseline scenario identified reasonably supported by:	VVM	84			
i. Assumptions?	VVM	84	The Identified baseline scenario is reasonably supported by assumptions.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Conclusion is pending a response to CL 03		
ii. Calculations?	VVM	84	The Identified baseline scenario is reasonably supported by calculations.		OK
iii. Rationales?	VVM	84	The Identified baseline scenario is reasonably supported by rationales.		OK
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	The documents and sources referred to in the PDD are correctly quoted and interpreted.		OK
j. Was the information provided in the PDD cross checked with other verifiable and credible sources, such as local expert opinion, if available? (identify the sources)	VVM	84	The information provided in the PDD was cross checked by the lead verifier who has an experience in determination of associated gas utilization projects.		OK
k. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity?	VVM	85	Yes, all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity		OK
l. Have all relevant policies and circumstances been identified and correctly considered in the PDD, in accordance with the	VVM	85	Conclusion is pending a response to CL 03	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
guidance by the CDM Executive Board?					
m. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM	86	Yes, PDD provides a basically verifiable description of the identified baseline scenario, including a description of the technology that would be employed and the activities that would take place in the absence of the proposed CDM project activity.  Conclusion is pending a response to CAR 11 and CAR 12.	Pending	OK
<b>e. Algorithms and/or formulae used to determine emission reductions</b>					
a. Do the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring?	VVM	89	Yes, the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring.		OK
b. Have the equations and parameters in the PDD been correctly applied with respect to those in the selected approved methodology?	VVM	90	Yes, the equations and parameters in the PDD have been basically correctly applied with respect to those in the selected approved methodology.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Specific questions per methodology regarding steps taken and equations and parameters applied to calculate project emissions, baseline emissions, leakage and emission reductions.			Conclusion is pending a response to CAR 17.		OK
c. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	No, the methodology does not provide for selection between different options for equations or parameters.		OK
d. If yes, has adequate justification been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided)?	VVM	90	Not applicable.		OK
e. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Not applicable.		OK
f. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	Yes, the data and parameters be monitored throughout the crediting period of the proposed CDM project activity		OK
g. If no, and these data and	VVM	91	Not applicable.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
parameters will remain fixed throughout the crediting period, are all data sources and assumptions:					
i. Appropriate and correct?	VVM	91	Not applicable.		OK
ii. Applicable to the proposed CDM project activity?	VVM	91	Not applicable.		OK
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	Not applicable.		OK
h. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	Yes, data and parameters be monitored on implementation and hence become available only after validation of the project activity.		OK
i. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Conclusion is pending a response to CAR 17.	Pending	OK
<b>6. Additionality of a project activity</b>					
a. Does the PDD describe how a proposed CDM project activity is additional?	VVM	94	PDD describes how a proposed CDM project activity is additional		OK
b. Does the CDM-PDD state the latest version of the additionality tool being used?	VVM	95	Yes, the latest version of the additionality tool is mentioned in Section B.4.		OK
c. Were the following steps of	EB 39	Ann	Yes, all the following steps of the tool are		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the tool to assess additionality used:		10	used.		
i. Identification of alternatives to the project activity?	EB 39	Ann 10	Step 1 "Identify plausible alternative scenarios" is used.		OK
ii. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?	EB 39	Ann 10	Step 3 "Evaluate the economic attractiveness of alternatives" is used to determine that the proposed project activity is not the most economically or financially attractive.  Conclusion is pending a response to CAR 15.	Pending	OK
iii. Barriers analysis?	EB 39	Ann 10	N/A		OK
iv. Common practice analysis?	EB 39	Ann 10	Step "Common practice analysis" is used.  Conclusion is pending a response to CAR 14	Pending	OK
d. In step 1 (i) have all the sub- steps as below been followed?	EB 39	Ann 10	In the PPD, sub-step 1a was Step 1 and sub- step 1b was Step 2.		OK
i. Sub-step 1a: Define alternatives to the project activity	EB 39	Ann 10	Under sub-step 1a, alternatives to the project activity have been defined.		OK



## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Under sub-step 1b, consistency with mandatory laws and regulations was justified.  Conclusion is pending a response to CL 03.	Pending	OK
e. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10			
i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	Yes, the proposed project activity undertaken without being registered as a CDM project activity has been included while defining alternatives as per sub-step 1a.		OK
ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;	EB 39	Ann 10	No, other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas have not been included while defining alternatives as per sub-step 1a.		OK
iii. (c) If applicable, continuation of the current situation (no project activity	EB 39	Ann 10	Yes, continuation of the current situation (no project activity or other alternatives undertaken) has been included while		OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
or other alternatives undertaken).			defining alternatives as per sub-step 1a.		
f. Has the project participant included the technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity and that have been implemented previously or are currently being introduced in the relevant country/region?	EB 39	Ann 10	No technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity have been implemented previously or are currently being introduced in the project country/region.		OK
g. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	The outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity has been done correctly. The outcomes are two alternatives: - Option 1: Continuation of the current gas management with gas flaring; - Option2: the project activity without CDM registration.		OK
h. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions,	EB 39	Ann 10	Conclusion is pending a response to CL 03.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
e.g. to mitigate local air pollution.?					
i. If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?	EB 39	Ann 10	Conclusion is pending a response to CL 03.	Pending	OK
j. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations done correctly?	EB 39	Ann 10	Conclusion is pending a response to CL 03.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Please state the outcome.					
k. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	PP selected Step 2.		OK
l. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10	yes		OK
i. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	Yes, sub-step 2a has been used.		OK
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	N/A		OK
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	N/A		OK
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	Yes, sub-step 2b has been used.		OK
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	Yes, sub-step 2c has been used.		OK
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Yes, sensitivity analysis has been done.		OK
m. In sub-step 2a has the determination of appropriate method of analysis done as per the guidance as below?	EB 39	Ann 10			

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	N/A		OK
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	EB 39	Ann 10	The benchmark analysis has been done.		OK
n. Has the below guideline been followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	N/A		OK
o. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify	EB 39	Ann 10	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify					
p. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10	Option-III Benchmark analysis has been applied.		OK
i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	The financial/economic indicator IRR has been applied as mandatory under AM0009 Version 06.0.0		OK
ii. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the	EB 39	Ann 10	Conclusion is pending a response to CAR 15.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered.					
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private	EB 39	Ann 10	Conclusion is pending a response to CAR 15.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
equity investors/funds' required return on comparable projects; (c) A company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their indicator is appropriately justified.					



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Please specify benchmark and justify.					
q. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10	The guideline for Option III was followed.		OK
i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public	EB 39	Ann 10	Relevant costs and revenues were applied as input data. Refer to Table B.4 and the excel sheet "20jun2011 Block 9 IRR for GSP.xls".		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
investments in the host country.					
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	The investment analysis is presented on the excel sheet "20jun2011 Block 9 IRR for GSP.xls"		OK
iii. Justify and/or cite assumptions.	EB 39	Ann 10	Conclusion is pending a response to CAR 16.	Pending	OK
iv. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	The project's risks were not included what is conservative, i.e. prides maximum IRR. Taking account of the project risks would reduce IRR.		OK
v. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.	EB 39	Ann 10	Input data for the investment analysis does not differ across the project activity.		OK
vi. Present in the CDM-PDD a clear comparison of the financial indicator for the	EB 39	Ann 10	A clear comparison is given as below: Table B.5. Comparison of the financial indicator for the proposed project activity and		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl				
proposed CDM activity. Please specify details for above.			<div>the financial benchmark</div> <table><tr><td>Project IRR</td><td>7,80%</td></tr><tr><td>Financial benchmark</td><td>10%</td></tr></table> <div>It is concluded that the CDM project activity has a less favorable indicator than the benchmark, therefore the CDM project activity cannot be considered as financially attractive.</div>	Project IRR	7,80%	Financial benchmark	10%		
Project IRR	7,80%								
Financial benchmark	10%								
r. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	Sensitivity analysis shows the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.		OK				
s. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	In the PDD Version 2.0, following sensitivity analysis it is concluded that the proposed CDM project activity is not economically attractive.		OK				
t. In Step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10	N/A		OK				
i. Sub-step 3a: Identify barriers that would prevent the implementation of the	EB 39	Ann 10	N/A		OK				

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed CDM project activity;					
ii. Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity).	EB 39	Ann 10	N/A		OK
u. Has the below guideline been followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project?	EB 39	Ann 10	N/A		OK
i. (a) Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the	EB 39	Ann 10			OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.					
ii. (b) Technological barriers: Skilled and/or properly trained labour to operate and maintain the technology is not available in the relevant country/region, which leads to an unacceptably high risk of equipment disrepair and malfunctioning or other underperformance; Lack of infrastructure for implementation and logistics for maintenance of the technology, Risk of technological failure: the process/technology failure risk in the local circumstances is significantly greater than for other technologies that provide services or outputs	EB 39	Ann 10	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
comparable to those of the proposed CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.					
iii. (c) Barriers due to prevailing practice: The project activity is the “first of its kind”.	EB 39	Ann 10	N/A		OK
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	N/A		OK
v. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	N/A		OK
w. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project	EB 39	Ann 10	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activity)?					
i. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.	EB 39	Ann 10	N/A		OK
ii. Provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers and whether alternatives are prevented by these barriers.	EB 39	Ann 10	N/A		OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc; (c) Relevant statistical data from national or international statistics; (d) Documentation of relevant market data (e.g. market prices, tariffs, rules); (e) Written documentation of independent expert judgments from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others. Please specify.	EB 39	Ann 10	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
x. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	N/A		OK
y. In Step 4: Common practice analysis have all the sub-steps as below followed?	EB 39	Ann 10	Conclusion is pending a response to CAR 14.	Pending	OK
i. Sub-step 4a: Analyze other activities similar to the proposed project activity;	EB 39	Ann 10	Conclusion is pending a response to CAR 14.	Pending	OK
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	Conclusion is pending a response to CAR 14.	Pending	OK
z. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already	EB 39	Ann 10	Conclusion is pending a response to CAR 14.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
diffused in the relevant region.					
aa. Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring? If similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the	EB 39	Ann 10	Conclusion is pending a response to CAR 14.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information.					
bb. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	The outcome from Step 4 is clearly mentioned in PDD.		OK
cc. Has it been proven hat the project is additional?	EB 39	Ann 10	With open CAR 14 – CAR 16 the additionality of the project is not proven.	Pending	OK
<b><i>a. Prior consideration of the clean development mechanism</i></b>					
a. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Yes, the project activity start date is prior to the date of publication of the PDD for stakeholder comments.		OK
b. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	Yes, the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM activity.		OK
c. Is the start date of the project activity, reported in the PDD, in accordance with the “Glossary of CDM terms”,	VVM	99	Yes, the start date of the project activity, reported in the PDD is in accordance with the “Glossary of CDM terms”, which states that “The starting date of a CDM project	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins."?			activity is the earliest date at which either the implementation or construction or real action of a project activity begins".  Conclusion is pending a response to CAR 23.		
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	Yes, the project activity requires construction of gas collection and transportation systems.		OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	Yes, is it ensured that the date of commissioning cannot be considered as the project activity start date.		OK
f. Is it a new project activity (a project activity with a start date on or after 02 August 2008) or an existing project activity (a project activity with a start date before 02 August 2008)?	VVM	100	It is an existing project activity being the project activity with a start date before 02 August 2008.		OK
g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, had PPs informed the host	VVM	101	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from host Party DNA and UNFCCC secretariat).					
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102			OK
ii. evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project, including, inter alia:	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK
a. minutes and/or notes related to the consideration of the decision by the Board			Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity?					
iii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c. funds)? evidence of agreements or negotiations with a DOE for validation services?	VVM	102	The evidence is available.		OK
d. submission of a new methodology to the CDM Executive Board?	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK
e. publication in newspaper?	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK
f. interviews with DNA?	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	Evidence is not provided to the DOE as on the date of the validation protocol Revision 01.	Pending	OK
<b>b. Identification of alternatives</b>					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no	VVM	105	No, the approved methodology that is selected by the proposed CDM project activity does not prescribe the baseline scenario and hence further analysis is required.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
further analysis is required?					
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	Yes, the PDD identifies credible alternatives to the project activity in order to determine the most realistic baseline scenario		OK
c. Does the list of alternatives given in the PDD ensure that:	VVM	106			
i. the list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity?	VVM	106	Yes, the list of identified alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity.		OK
ii. the list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?	VVM	106	N/A		OK
iii. the alternatives comply with all applicable and enforced legislation?	VVM	106	Conclusion is pending a response to CL 03.	Pending	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b><i>c. Investment analysis</i></b>					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	The investment analysis in the form of the benchmark analysis (Option III) has been used to demonstrate the additionality.		OK
b. If yes, does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108			
i. the most economically or financially attractive alternative?	VVM	108	N/A		OK
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	Yes, PDD provides evidence that the proposed CDM project activity would not be economically or financially feasible, without the sale of certified emission reductions (CER).		OK
c. Was this shown by one of the following approaches?	VVM	109			
i. The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with	VVM	109	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity.					
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	It was shown that the proposed CDM project activity was less economically or financially attractive than at least one other credible and realistic alternative.		OK
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	The issue was not considered.		OK
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	Yes, the period of assessment is limited to the proposed crediting period of the CDM project activity.		OK
e. Does the project IRR and equity IRR calculations reflect the period of expected operation of the underlying	EB 51	Ann 58	IRR calculations reflect the period of expected operation of the underlying project activity (technical lifetime).		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?					
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 51	Ann 58	The benchmark analysis in the PDD includes the cost of major maintenance and/or rehabilitation that are expected to be incurred during the period of assessment.		OK
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	The period of assessments coincides with the proposed crediting period.		OK
h. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	The investment costs are recovered before the end of the assessment period.		OK
i. Has the fair value been calculated in accordance with local accounting regulations where available, or	EB 51	Ann 58	<b>CL 09.</b> Please describe on the excel spreadsheet the method of calculating cost	CL 09	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
international best practice?			recovery (gas/fuel parts) and gas/fuel revenues.		
j. Does the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	EB 51	Ann 58	Please refer to question h above.		OK
k. Was depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV)?	EB 51	Ann 58	Conclusion is pending a response to CL 09.	Pending	OK
l. Has taxation been included as an expense in the IRR/NPV calculation in cases where the benchmark or other comparator is intended for post-tax comparisons?	EB 51	Ann 58	Yes, taxation has been included as an expense in the IRR calculation.		OK
m. Are the input values used in all investment analysis valid and applicable at the time of the investment decision	EB 51	Ann	Conclusion is pending a response to CAR	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
taken by the project participant?		58	16.		
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	Conclusion is pending a response to CAR 16.	Pending	OK
o. Are all the listed input values been consistently applied in all calculations?	EB 51	Ann 58	Yes, applied consistently.		OK
p. Does the investment analysis reflect the economic decision making context at point of the decision to recommence the project in the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM?	EB 51	Ann 58	Not applicable to the decision making context.		OK
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 51	Ann 58	Yes, this is the IRR excel sheet		OK
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 51	Ann 58	Yes it is provided and relevant cells are viewable and unprotected.		OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 51	Ann 58	Yes a spreadsheet including some blacked-out formulas (with values only) has been provided.		OK
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 51	Ann 58	Yes, some information in Exploration and Production agreement is subject to confidentiality.		OK
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 51	Ann 58	No, these were not included.		OK
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 51	Ann 58	IRR was calculated for the project as a whole.		OK
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calculation of equity IRR?	EB 51	Ann 58	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(this is not allowed)					
x. Was a pre-tax benchmark applied?	EB 51	Ann 58	A post-tax benchmark was applied.		OK
y. In cases where a post-tax benchmark is applied, is actual interest payable taken into account in the calculation of income tax?	EB 51	Ann 58	N/A		OK
z. In such situations, was interest calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years?	EB 51	Ann 58	N/A		OK
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	Conclusion is pending a response to CAR 15.	Pending	OK
bb. Has local commercial lending rates or weighted average costs of capital (WACC)	EB 51	Ann 58	Local commercial lending rates or weighted		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
selected as appropriate benchmarks for a project IRR?			average costs of capital (WACC) were not selected as appropriate benchmarks for a project IRR.		
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	IRR was calculated for the project as a whole.		OK
dd. In case benchmarks supplied by relevant national authorities selected is it applicable to the project activity and the type of IRR calculation presented?	EB 51	Ann 58	Conclusion is pending a response to CAR 15.	Pending	
ee. In the cases of projects which could be developed by an entity other than the project participant is the benchmark applied based on publicly available data sources which can be clearly validated?	EB 51	Ann 58	N/A		OK
ff. Have internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a	EB 51	Ann 58	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
weighted average cost of capital - WACC) been applied in cases where there is only one possible project developer?					
gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	EB 51	Ann 58	N/A		OK
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 51	Ann 58	N/A		OK
ii. Has a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conducted?	EB 51	Ann 58	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
jj. Does the risk premiums applied in the determination of required returns on equity reflect the risk profile of the project activity being assessed, established according to national/international accounting principles? (It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.)	EB 51	Ann 58	N/A		OK
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services?	EB 51	Ann 58	Only the benchmark analysis (Option-III) was used.		OK
ll. Have variables, including the initial investment cost, that constitute more than 20% of	EB 51	Ann 58	All variables, including the initial investment		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the associated spreadsheets?			cost have been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the associated spreadsheets.		
mm. Have a corrective action been raised for a variable to be included in the sensitivity analysis which constitute less than 20% and have a material impact on the analysis ?	EB 51	Ann 58	Please refer to question II above.		OK
nn. Is the range of variations selected is reasonable in the project context?	EB 51	Ann 58	Conclusion is pending a response to CAR 15.		OK
oo. Do the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 51	Ann 58	The variations in the sensitivity analysis cover a range of +10% and -10%.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
pp. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative, is an assessment done of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity?	EB 51	Ann 58	Not applicable since IRR is less than the benchmark.		OK
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 48	Ann 11			
i. The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project	EB 48	Ann 11	N/A		OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activity for implementation approval?					
ii. The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)?	EB 48	Ann 11	The plant load factor was determined by the PDD developer.		OK
rr. Was a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	VVM	111	Conclusion is pending a response to CAR 15, CAR 16, and CL 08.	Pending	OK
ss. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	Conclusion is pending a response to CAR 15.	Pending	OK
tt. Were feasibility reports, public announcements and annual financial reports	VVM	111	Not applicable since Option I was used.	CL 10	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
related to the proposed CDM project activity and the project participants reviewed?			<b>CL 10.</b> Please provide DOE for review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants.		
uu. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	111	Correctness of computations on the excel sheet and in Tables B.8 – B.10 was assessed.		OK
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	The sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			were assessed.		
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	The type of benchmark applied is suitable for the type of financial indicator presented.		OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	Conclusion is pending a response to CAR 15.	Pending	OK
yy. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:					
i. Assessing previous investment decisions by the project participants involved?	VVM	112	CL 11. Please provide for DOE assessment previous decisions by the project participants involved.	CL 11	OK
ii. determining whether the same benchmark has been applied?	VVM	112	Conclusion is pending a response to CAR 27.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	Conclusion is pending a response to CAR 27.	Pending	OK
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed CDM project activities?	VVM	113	Not applicable since no FSR was issued.		OK
aaa. If yes:	VVM	113	N/A		OK
i. has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have	VVM	113	N/A		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
materially changed?					
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	N/A		OK
iii. If not, was the appropriateness of the values validated?	VVM	113	N/A		OK
iv. On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVM	113	N/A		OK
<b>d. Barrier analysis</b>					
a. Has barrier analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	115	N/A		OK
b. If yes, does the PDD demonstrate that the proposed CDM project	VVM	115	N/A		

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activity faces barriers that:					
i. prevent the implementation of this type of proposed CMD project activity?	VVM	115	N/A		OK
ii. do not prevent the implementation of at least one of the alternatives?	VVM	115	N/A		OK
c. Are there any issues that have a clear direct impact on the financial returns of the project activity, other than: risk related barriers, for example risk of technical failure, that could have negative effects on the financial performance; or barriers related to the unavailability of sources of finance for the project activity? {If yes, these issues cannot be considered barriers and shall be assessed by investment analysis. [Refer to (6.c) above]}	VVM	116	N/A		OK
d. Were the barriers determined as real by:	VVM	117			

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. assessing the available evidence and/or undertaking interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist?	VVM	117	N/A		OK
ii. ensuring that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics?	VVM	117	N/A		OK
iii. Is existence of a barrier substantiated only by the opinions of the project participants? (If yes, this barrier cannot be considered as adequately	VVM	117	N/A		OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
substantiated) e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives by applying local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of <i>at least one of</i> the possible alternatives, in particular the identified baseline scenario?	VVM	117	N/A		OK
<b>e. Common practice analysis</b>					
a. Is this a proposed large-scale, or first-of-its kind small-scale project activity?	VVM	119	The proposed project is large-scale project activity.		OK
b. If yes, was common practice analysis carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality?	VVM	119	Conclusion is pending a response to CAR 14.	Pending	OK



## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c. Was it assessed whether the geographical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologies the relevant region for assessment will be local and for others it may be transnational/global.	VVM	120	Conclusion is pending a response to CAR 14.	Pending	OK
d. Was a region other than the entire host country chosen?	VVM	120	No, a region other than the entire host country was not chosen.		OK
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	N/A		OK
f. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the defined region?	VVM	120	Internet survey which was conducted did not reveal that the project activity is the common practice.		OK
g. Are similar and operational projects, other than CDM	VVM	120	Internet survey which was conducted did not reveal that the project activity is the common		OK

## VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
project activities, already "widely observed and commonly carried out" in the defined region?			practice.		
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	Not applicable.		OK
<b>7. Monitoring plan</b>					
a. Does the PDD include a monitoring plan?	VVM	122	PDD includes a monitoring plan.		OK
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	Yes, this monitoring plan is based on the approved methodology AM0009 Version 4.0.		OK
c. Was the list of parameters required by the selected methodology identified?	VVM	123	Yes, the list of parameters required by the selected methodology was identified.  Conclusion is pending a response to CAR 18.	Pending	OK
d. Does the monitoring plan contain all necessary parameters?	VVM	123	Yes, the monitoring plan contains all necessary parameters. Conclusion is pending a response to CAR 18.	Pending	OK
e. Are the parameters clearly	VVM	123	Yes, the parameters are clearly described.		OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
described?					
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Conclusion is pending a response to CAR 19 and CAR 20.		OK
g. Specific questions per methodology regarding parameters.			No specific questions per methodology regarding parameters are raised by DOE.		OK
h. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	Yes, the monitoring arrangements described in the monitoring plan are feasible within the project design.  Conclusion is pending a response to CAR 19 – CAR 22.	Pending	OK
i. Are the following means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:	VVM	123			OK
i. data management procedures?	VVM	123	Yes, data management procedures were verified.		OK
ii. quality assurance procedures?	VVM	123	Yes, quality assurance procedures were verified.		OK
iii. quality control	VVM	123	Yes, quality assurance procedures were		OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
procedures?			verified.		
<b>8. Sustainable development</b>					
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Yes, the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development.		OK
b. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	125	Please refer to CAR 01.	Pending	OK
<b>9. Local stakeholder consultation</b>					
a. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on	VVM	128	Yes, local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) were invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website.		OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the UNFCCC website?					
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	128	Yes, comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity have been invited.		OK
c. Is the summary of the comments received as provided in the PDD complete?	VVM	128	Yes, the summary of the comments received as provided in the PDD complete.		OK
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	128	The results of the questionnaire surveys show that all respondents fully support the project without any negative opinion towards the project.		OK
<b>10. Environmental impacts</b>					
a. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	129	Conclusion is pending a response to CL 06.	Pending	OK
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	131	Yes the project participants have undertaken a cursory analysis of environmental impacts.		OK
c. Does the host Party require an environmental impact assessment?	VVM	131	Conclusion is pending a response to CL 06.	Pending	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Please refer to question c above.	Pending	OK

Table 2

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
<b>CAR 01.</b> There is no approval from the party that has been submitted to the DOE.	1.a	Response 1  The approvals from parties will be provided to DOE after they have been obtained	Letter of Approval (LoA) from the CDM-DNA of the Sultanate of Oman dated 16/07/2012 has been provided to the DOE.  Letter of Approval (LoA) from the CDM-DNA of the UAE dated 17/07/2012 has been provided to the DOE.
<b>CAR 02.</b> The participation of each project participant has not been approved.	2.b	Response 1  The approvals from parties will be provided to DOE after they have been obtained	Authorization of the participation of the Ministry of Oil & Gas as Project Participant for the CDM project was included in the LoA from the CDM-DNA of the Sultanate of Oman.  Authorization of the participation of the Oman Trading International as Project Participant for the CDM project was included in the LoA from CDM-DNA of UAE.



## VALIDATION REPORT

<b>CAR 03.</b> Please indicate e-mail or fax of Mr. Al Siyabi and Mr. Al Maawali.	2.e	<p>Response 1</p> <p>Faxes and e-mail addresses have been added in Annex 1.</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<p><b>CAR 04.</b> Areas of concern as to the project description are as follows:</p> <p>The purpose of the project activity is not included;</p> <p>The scenario existing prior to the start of the project (baseline scenario) does not include reinjection of about half of the gas for the purpose of the gas lift process;</p> <p>Pipelines are not indicated as main equipment.</p>	3.d.i	<p>Response 1</p> <p>(a) The purpose of project activity has been added in PDD.</p> <p>(b) The definition of the scenario existing prior to the start of the project activity (and baseline scenario) has been revised including the use of gas-lift gas.</p> <p>(c) Pipelines have been added in PDD A.2 as main equipment</p> <p>Response 2</p> <p>b) the definition of the scenario existing prior to the start of the project activity has been clarified</p> <p>c1) full pipeline network has been added in PDD including an overview in Figure A.2</p> <p>c2) the wording has been revised</p> <p>Response 3:</p> <p>(b) PDD has been revised in sections A.2; A.4.3; B.2, B.4 and B.5</p> <p>d) the presence of compressors at CPF has been</p>	<p>Response (a) is accepted.</p> <hr/> <p>Response (b) is not accepted.</p> <p>The corrected description "The scenario existing prior to the start of the implementation of the proposed project activity is flaring of associated gas and/or gas-lift gas at the oil production site, the continuation of the operation of the existing oil and gas infrastructure without processing of any recovered associated gas and/or gas-lift gas and without any other significant changes, and the use of gas-lift gas in the gas-lift system" is vague; please refer to the highlighted words which do not make sense.</p> <hr/> <p>Please take note that the scenario existing prior to the start of the project activity should be definite.</p> <hr/> <p>Response (c) is not accepted:</p> <hr/> <p>(c1) Information only about two pipelines from SGP to National pipeline and from WL to FW is included in the revised PDD. Please provide in the PDD complete specification of project pipelines transporting APG from each of 5 sites to SGP.</p> <p>(c2) Please review the meaning of <i>return</i> in "The</p>



		<p>added on page 5.</p> <p>e) gas sampling locations have been clarified in section A.4.3. References in page 31 have been revised.</p> <p>f) Table has been renumbered</p> <p>g) Please find attached documented evidence. See pdf named "Oxy statement OM, implementation, financing". Implementation dates have been updated; Besides, we hereby provide detailed specifications of compressors at each location to support data in PDD Table A.2. The table has been updated. Moreover, rated power at FW location and compression capacity at SAR have been revised and subsequent calculations of electricity consumption have been revised in PDD, and subsequently ER calculations and IRR. See evidence folder named "compressor specs".</p> <p>Response 4:</p> <p>/g1/ we hereby provide extracts from daily operations reports for each location confirming the commissioning dates. Please see attached evidence named "comp commissioning evidence".</p>	<p>recovered gas will be returned to the gas plant for processing" (refer to the PDD page 5.</p> <hr/> <p><u>Conclusion on Response 2</u></p> <p>(b) Response is not accepted. Please select one option out of <i>and/or</i> in the full description. The same pertains to Scenario G2 and P4 and the definition of the baseline in Section B.4.</p> <p>(c1) Response is accepted.</p> <p>(c2) Response is accepted.</p> <hr/> <p>Additional requests as to the project description:</p> <p>d) Please indicate the presence of compressors at CPF on page 5.</p> <p>e) Please indicate where probes of recovered gas are taken for chromatography. Reference on page 31 to point F in Figure 2 is incorrect.</p> <p>f) Please correct Table B.10 to Table B.14 on page 7.</p> <p>g) Please provide documented evidence of the dates in Table A.3.</p> <hr/> <p>CAR is not closed.</p> <hr/> <p><u>Conclusion on Response 3</u></p> <p>/b/ Response is accepted</p> <p>/d/ Response is accepted</p> <p>/e/ Response is accepted</p> <p>/f/ Response is accepted</p> <p>/g1/ The DOE cannot accept the document "Oxy</p>
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## VALIDATION REPORT



		<p>/g2/ values in Annex 3 Table 2 of the PDD and other related documentation such as IRR sheet have been revised in accordance with full commissioning dates (i.e. installation of final compression capacity), PDD table A.3 has been revised. CPF: 23 days operation in 2009; FW: 178 days operation in 2010; WL: 63 days operation in 2010; JAL: 143 days operation in 2010; SAT: 117 days operation in 2010.</p>	<p>statement OM, implementation, financing” as the evidence of Commissioning Dates. Please provide formal Acts of Commissioning.</p> <p>/g2/ Values 30, 180, 90, 90, 120 days used in Annex3 Table 2 for years 2008 and 2009 do not fit to the commissioning dates.</p> <hr/> <p>CAR is not closed.</p> <hr/> <p><u>Conclusion on Response 4</u>  /g1/ Response is accepted  /g2/ Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<p><b>CAR 05.</b> Please indicate the technical area as per the CDM Accreditation Standard Version 02.</p>	3.g	<p>Response 1</p> <p>The proposed project is in TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX), according to the categorisation of the accreditation standard v03 (EB62 Annex 1). However, as per BV TR decision on the Madinah project, technical area as per the CDM accreditation standard is not to be included in PDD.</p> <p>Response 2</p> <p>TA 10.2 has been added</p>	<p>Response 1 is not accepted.</p> <p>Please indicate TA 10.2 in addition to SS 10.</p> <p>CAR is not closed.</p> <p><u>Conclusion on Response 2</u>  Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>

## VALIDATION REPORT



<p>CAR 06. Please describe:</p> <ul style="list-style-type: none"> <li>(a) the capacity, load factor, efficiency and life time of the compressors to be installed;</li> <li>(b) the pipeline systems to be installed;</li> <li>(c) gas amounts to be transported;</li> <li>(d) monitoring equipment.</li> </ul>	3.h.iii	<p>Response 1</p> <ul style="list-style-type: none"> <li>(a) Section A.4.3 has been updated with compressors specifications, including capacity, load factor and lifetime. Efficiency of compressor was not provided by manufacturer.</li> <li>(b) New Pipeline system has been described in A.4.3</li> <li>(c) Average gas amounts to be transported have been mentioned in section A.4.3 and detailed in Annex 3 of the PDD.</li> </ul> <p>Response 2</p> <ul style="list-style-type: none"> <li>a) The maximum load factor is calculated using the highest expected operating hours which are at WL in 2012 and of 6351 per year in PDD Annex 3 Table 13 (renumbered Table 7), and divided by 8760, which is 72%</li> <li>b) complete pipeline specs have been added in section A.4.3</li> <li>c) further description of electric meters and recovered gas volumes monitoring has been added in section A.4.3.</li> </ul> <p>Response 3:</p> <ul style="list-style-type: none"> <li>c) gas amounts to be transported and delivered to national pipeline have been added to section A.4.3</li> </ul>	<p>Response (a) is not accepted as regards the load factor. The indicated maximum load factor of compressors 72% is not supported by the data in Annex 3 Table 13.</p> <hr/> <p>Response (b) is not accepted. Information only about two pipelines from SGP to National pipeline and from WL to FW is included in the revised PDD. Please provide in the PDD complete specification of project pipelines transporting APG from each of 5 sites to SGP.</p> <hr/> <p>Response (c) is not accepted. Please describe electric meters used for measuring the electricity consumption by compressors. Please specify the equipment for measuring the APG volume.</p> <hr/> <p>Conclusion on Response 2</p> <hr/> <ul style="list-style-type: none"> <li>a) Response is accepted.</li> <li>b) Response s accepted.</li> <li>c) No response. Please describe gas amounts to be transported.</li> <li>d) Response c) relates to request d) on monitoring equipment; it is accepted.</li> </ul> <hr/> <p>CAR is not closed.</p>
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		<p>Response 4:</p> <p>/1/ PDD section A,4,3 has been updated.</p> <p>/2/ PDD section A,4,3 has been updated.</p> <p>/3/ PDD section A.4.3 has been updated. For calculations please refer to IRR sheet, "PDD tables" tab, cell P59.</p>	<p><u>Conclusion on Response 3</u>  (c) Response is not accepted.  PDD reads in A.4.3 page 4:  <i>"Expected annual gross gas volumes to be recovered as part of the project activity are on average 35.11mmscfd over its lifetime. On average about 1.51mmscfd the recovered gas will be used annually in captive power plant on-site to provide electricity to the project activity. Expected annual net gas volumes to be transported and delivered to National pipeline is 31.62mmscfd. Detailed annual values per location from the start of crediting period are listed in Annex 3 Table 1"</i></p> <hr/> <p>/1/ PDD Annex 3 Table 1 predicts average gas gains 41.13 mmscfd for 10 years lifetime 2010-2019 rather than the value 35.11 mmscfd on page 4. Please correct.</p> <p>/2/ PDD Annex 3 Table 10 predicts average amount of gas consumed in power plants 1.80 mmscfd over lifetime and 1.63 mmscfd over the crediting period. These values do not comply with the value 1.51 mmscfd on page 4. Please correct.</p> <hr/> <p>/3/ PDD Annex 3 Table 12 predicts annual net gas volumes to be transported to national pipeline 34,43 mmscfd over lifetime and 33,19 mmscfd over the crediting period. These values do not comply with the value 31.62 mmscfd on page 4. Please correct.</p> <p>CAR is not closed.</p>
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## VALIDATION REPORT

			<p><u>Conclusion on Response 4</u></p> <p>/1/ Response is accepted. /2/ Response is accepted. /3/ Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CAR 07.</b> The description of the baseline does not describe GHG involved from gas flaring.	3.h.iv	<p>Response 1</p> <p>Project activities under this methodology reduce emissions by recovering associated gas and/or gas-lift gas and utilizing the recovered gas. The utilization of the recovered gas displaces the use of other fossil fuel sources. This methodology provides for a simplified and conservative calculation of emission reductions, assuming that the use of recovered gas displaces the use of methane – the fossil fuel with the lowest direct CO<sub>2</sub> emissions. Emissions from processing and transportation of fuels to end-users are neglected for both the project activity and the baseline scenario, as it is assumed that these emissions are similar in their magnitude and level out.</p> <p>The GHG emissions from flaring in the baseline and from use/combustion in the project scenario are excluded in accordance with the methodology.</p> <p>The description of GHG in the baseline and project scenario are added in the PDD.</p> <p>Response 2</p>	<p>Response is accepted.</p> <p>The PP closely follows the logic of AM0009 which does not treat specially the GHG emissions from flaring having in mind that GHG will be anyway formed at end user from combustion of fossil fuel which will be replaced by the project gas.</p> <p>CAR will be closed when it is stated in the PDD Section A.4.3 that the baseline scenario is the same as the scenario existing prior to the start of implementation of the project activity. Please refer to Guidelines for completing the project design document (CDM-PDD) para A.4.3.</p> <p><u>Conclusion on Response 2</u></p> <p>Response is accepted. CAR is closed based on due amendment made to the PDD.</p>

## VALIDATION REPORT



		The sentence has been added in A.4.3	
<b>CAR 08.</b> The methodologies which the approved methodology draws upon are not indicated. Version numbers of the tools are not indicated	3.k.ii	<p>Response 1</p> <p>In accordance with BV TR decision on Madinah project, the methodologies which the approved methodology draws upon will not be listed in the PDD.</p> <p>All tools which the approved methodology draws upon are listed. Version numbers of the tools have been added.</p>	<p>Response is accepted.</p> <p>The CAR is withdrawn.</p>
<b>CAR 09.</b> It is not shown that the project activity meets the applicability conditions included in the tools referred to in the methodology.	3.l.i	<p>Response 1</p> <p>Information on how the project activity meets the Tools applicability conditions has been added in PDD B.2.</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CAR 10.</b> Please explain and refer to documentation that has been used for justification of the AM0009 applicability conditions (for instance the working design documentation).	3.l.ii	<p>Response 1</p> <p>Documentation used has been added in section B.2</p>	<p>Response is accepted.</p> <p>Referred documentation that has been added to Section B.2 is limited to the footnote 1 "Note that the documentation that has been used for justification of the applicability conditions consists of the description of the project activity in internal "project authorization request" provided by the entity operating Block 9". This comprehensive document was made available to the DOE.</p> <p>CAR is closed based on appropriate amendment made to the PDD and the evidence provided to the DOE.</p>

## VALIDATION REPORT



<p><b>CAR 11.</b> Section B.4 does not provide transparent illustration of all data used to determine the baseline scenario, such as the recovered gas volume and NCV (refer to Formula (1)).</p>	<p>3.n.iii</p>	<p>Response 1</p> <p>Section B.4 has been further updated. Step 3 and Step 4 of the “identification of the baseline scenario and demonstration of additionality” have been performed in Section B.5 of the PDD and related data such as the recovered gas volume and NCV have been detailed in section B.5</p> <p>Response 2</p> <p>Recovered gas volumes and NCV have been added in section B.4. Further justification has been added regarding all data used to determine the baseline.</p> <p>Values for Net Calorific Values have been revised in PDD and ER sheet. Evidence is provided to DOE. Please see Liquids Model Report.pdf in liquids gains justification evidence folder.</p>	<p>Response 1 is not accepted. Section B.4 shall provide transparent illustration of all data used to determine the baseline scenario. Please refer to Guidelines for completing the project design document (CDM-PDD) para B.4.</p> <hr/> <p>CAR is not closed.</p> <hr/> <p>Conclusion on Response 2</p> <hr/> <p>Response is accepted as to Recovered Gas Volumes: they are referred to Annex 3 in Section B.4. However ,the use of 350 days per year (a kind of gas system load factor) is not explained nor the conservativeness of this value is justified.</p> <hr/> <p>/a/ Response is not accepted as to Net Calorific Value. Neither Section B.4 nor Section B.5 provides data on NCV.</p> <hr/> <p>/b1/ Please provide information about the date to which measured gas compositions and calculated NCV relate to. /b2/ Please take into account that composition measurements are taken monthly (PDD Section D.7.2).</p>
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		<p>Response 3:</p> <p>The use of 350 operating days annually is the operator's common practice. Reliability of this value is evidenced through the provision of the operator's actual loss review for 3 consecutive months. The document indicates on average 5% downtime, which corresponds to 18 days production, Therefore it is realistic to use projections on a 350 days basis. See operator's email evidence named "350days evidence" (zip file). Clarification has been added in PDD annex 3, Table 2.</p> <p>/a/ Data on recovered gas volumes and NCV were used in section B.4 and B.5 for the purpose of identifying, assessing the plausibility of, and evaluating the economic attractiveness of scenarios G6 and P3, i.e. the implementation of the proposed project without being registered as CDM project activity. The assessment process in section B.4 and B.5 did not use specific NCV of recovered at each location but the maximum value acceptable at gas selling point as per gas purchase agreement (or 1154 BTU per SCF).</p> <p>NCV value used to estimate financial projections, especially revenues generated by the proposed project activity differs from the NCV value used to estimate emission reductions because the locations of the measurements are different. Applying the same NCV value in both calculations would result in</p>	<p>Therefore it should be justified what NCV is taken for estimation of baseline emissions.</p> <p>/b3/ Please explain why constant NCV through years is taken in excel calculations.</p> <p>/c/ Please ensure 100% (not 100,1%) balance of recovered gas components in PDD and on excel sheet. CAR is not closed.</p> <hr/> <p><u>Conclusion on Response 3</u></p> <hr/> <p>Response as to "the use of 350 operating days annually as the operator's common practice" is not accepted. The response is based on limited data for Jan-March 2012; the oil field location is not specified. According to DOE calculations, emission reduction is very sensitive to the operational days. For instance, at 348 hours the ER is 1% less than at 350 hours. PP should more carefully elaborate on this issue from the standpoint of providing conservativeness of the predicted ER (this was requested in the above Conclusion on Response 2).</p> <p>/a/ IRR calculation indeed uses the maximum value of NCV = 1154 BTU per SCF or 43 MJ/m<sup>3</sup> what is conservative at the fixed gas price 0.85 USD/MMBTU. However, both PDD and the PP response leave without due consideration the fact that the measured NCV of gas at FW, JAL and especially CPF (60.3 MJ/m<sup>3</sup>) exceeds the maximum value 43 MJ/m<sup>3</sup> permitted in the Gas Sales and Purchase Agreement. Will such gas be purchased? PP is requested to elaborate on this issue and provide the DOE the full text of Agreement with all Annexes. Are there requirements on the stability of the gas composition and</p>
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		<p>either (1) overestimation of revenues generated by the project because gas specifications not meeting the requirements (including in terms of NCV) of the National pipeline would not qualify and would not lead to revenues generation (as per gas purchase agreement provided to DOE), or (2) underestimate of Emissions Reductions as methodology AM0009 version 4 requires the measurement of NCV at point F in methodology AM0009 Version 06.0.0 Figure 2, i.e. after pre-treatment (phase separation and compression) at each location.</p> <p>PPD's approach is (1) more realistic from an economic attractiveness assessment point of view compared to using specific NCVs at each location as the maximum acceptable NCV at selling point is used. (2) more accurate than using specific NCVs at each location as it represents the actual NCV that will serve as a basis for revenues generation for this project, as gas volumes not meeting such NCV requirement are not accepted by the national gas pipeline.</p> <p>The maximum NCV value is indicated in sections B.4 and B.5 of the PDD.</p> <p>/b1/ NCV value used to identify and select the baseline scenario is taken from the gas sales and purchase agreement which was signed between operator and the government of the sultanate of Oman on 29<sup>th</sup> April 2003. The value is valid as it was known prior to investment decision. Evidence was provided to DOE, Please refer to CAR16 response 1.</p>	<p>NCV? Also please specify "requirements of the National pipeline".</p> <p>/b1/ The response is not to the request. However, the provided pdf file named "liquid model report rev.1" indicates that the measurements in question were made in 2007. The request is closed.</p> <p>/b2-1/ Please provide the evidence that the model HYSYS was created before the time of investment decision.</p> <p>/b2-2/ The status of the provided report "Liquid Gain From Flare Reduction" is unclear. It is not dated and signed. Table of content does not include Appendix A.</p> <p>/b2-3/ Composition of gas at WL does not correspond to data in PDD and ER excel file.</p> <p>/b3/ Response is accepted</p> <p>/c/ Response is accepted.</p>
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		<p>/b2/ The NCV values used to calculate expected emissions reductions are the latest available gas compositions at each location at the time of investment decision. See evidence pdf file named "liquid model report rev.1" which include dated gas protocols at each location in Appendix. Clarification has been added in section B.7.1. Values will be adjusted monthly during monitoring.</p> <p>/b3/ The monthly measurement frequency requirement refers to the monitoring methodology for the calculations of <i>ex-post</i> actual baseline emissions. As no specific guidance exists for <i>ex-ante</i> estimate of the value of NCV, project participant used the latest values available at the time of investment decision, as a constant value during the crediting period. Please find attached evidence of the measurement dates in the revised version of the "liquids model report" provided to DOE. Pdf file "liquid model report rev1".</p> <p>/c/ the mole fractions have been updated including increased accuracy in revised version of "liquids model report". PDD including ER calculations, ER sheet have been revised accordingly. see Pdf file "liquid model report rev1"</p> <p>Response 4</p> <p>350 days onsite operations: We hereby provide a confidential internal document prepared by the operator that aggregates production loss data at the</p>	
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		<p>operator facilities for 2010 and 2011. It shows that average annual production loss in 2011 was 5.07% and 5.96% in 2010 (see last page in the evidence named "Oman North losses").</p> <p>Assuming gas gains projections on 350 days a year basis is equivalent to assuming 4.1% loss compared to maximum gas recovery (350 / 365). Consequently, it can be concluded that the value used in PDD is conservative from an additionality assessment perspective compared to latest information available for actual loss, as applying actual loss would result in lower revenues.</p> <p>From an ex-ante ER calculation point of view, assuming 350 days instead of 365 will result in a more conservative ER estimate. Finally, assuming gas recovery on 365 day basis would be the same as assuming 0% annual operational downtime which is not considered plausible in the investment analysis.</p> <p>/a/ The recovered gas from all locations is processed at the gas plant for the purpose of meeting specific quality measures, so that the national pipeline can operate properly. As per Gas agreement Article 8, page 16, paragraph 8.1 the quantity delivered must meet strict specifications.</p> <p>In the unlikely scenario where some of the gas fails to meet the specifications of the gas pipeline, according to gas agreement Article 8 page 16, paragraph 8.2, the seller must notify the buyer immediately of the failure giving reasonable details of</p>	<p><u>Conclusion on Response 4</u> Justification of 350 days onsite operation is accepted.</p> <p>/a/ Response is accepted.</p> <p>/b2-1/ Response is accepted</p> <p>/b2-2/ Response is accepted.</p> <p>/b2-3/ Response is accepted.</p> <p>CAR is closed based on amendment made to the PDD and the justification provided in the response.</p>
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	<p>the cause, including estimated variations of the quality specifications. Then, the gas agreement paragraph 8.4 grants the buyer the option to reject or accept off-specifications gas.</p> <p>This means that the seller can reasonably not consider any revenue from off-specifications gas in investment analysis and for decision-making. In any case, the agreement further clarifies that the applicable gas price for off-specs gas will be the “gas price” i.e. per price per MMBTU considering that the maximum BTU acceptable as per gas agreement Appendix C is 1154BTU/scf. Full text of gas agreement including all annexes is provided to DOE, see evidence package. Therefore, the assumption that all gas is sold is conservative for the purpose of the additionality assessment.</p> <p>/b2-1/ The Hysys models were created only for the purpose of addressing DOE’s request on justification of gas gains. Liquids gains were not considered by the project participants at the time of investment decision. This is confirmed in the dated revised version of the liquid model report provided to DOE attached to response 4.</p> <p>Nevertheless, and strict accordance with methodology requirements, liquids gains and revenues have been added to the investment analysis in the PDD, and to reflect the investment decision period, the input values that have been used in Hysys models are the latest available gas compositions available at the time of investment</p>	
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## VALIDATION REPORT



		<p>decision, With addition of revenues from sales of liquids in investment analysis, the IRR remains below the hurdle rate.</p> <p>/b2-2/ Please find attached revised report signed and dated, and the inclusion of "appendix A" in table of content. See evidence "liquid model report rev2".</p> <p>/b2-3/ composition at WL has been updated in ER sheet, and subsequent sections of IRR sheet and PDD.</p>	
<b>CAR 12.</b> A transparent and detailed description of the identified baseline scenario including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity is not provided.	3.n.iv	<p>Response 1</p> <p>Related description has also been added in PDD at the end of Section B.4.</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CAR 13.</b> It is not explicitly indicted in the PDD that Option 1, i.e. the business as usual is	3.o.i	<p>Response 1</p> <p>Where not already included a clear indication of each</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>

## VALIDATION REPORT



considered as the baseline scenario and that Option 2 i.e. the project activity is additional.		choice has been added to the PDD			
<b>CAR 14.</b> The common practice analysis is not in compliance with the Tool for the demonstration and assessment of additionality. Please analyze other activities similar to the proposed project activity (they are reported in Internet) and discuss any similar options that are occurring. Please link this analysis with clarification if there exist plants in Oman which process the associated petroleum gas.	3.o.i	<p>Response 1</p> <p>The common practice section in the PDD has been revised with a comprehensive analysis of other similar activities that are occurring.</p> <p>Response 2</p> <p>A table has been added in sub-step 4b as overview of essential distinctions of the considered practices from the proposed project.</p> <p>It has been made clear in sub-step 4b whether similar activities are widely observed and commonly carried out.</p> <p>All sources in the attached document have been reviewed and the table below confirms that all sources are mentioned in the PDD.</p> <table><tr><td>document name</td><td>Comment</td></tr></table>	document name	Comment	<p>Response is not accepted.</p> <hr/> <p>To make the analysis unambiguous please include in the PDD a table specifying distinctions of the considered practices from the project activity.</p> <hr/> <p>Also please make it clear if similar activities are widely observed and commonly carried out (refer to CDM Additionality Tool Sub-step 4b).</p> <hr/> <p>Also please check if all sources in the attached document are considered in the analysis.</p> <p>CAR is not closed.</p> <hr/> <p>Conclusion on Response 2</p> <hr/> <p>Additional structured information supporting the common practice analysis is added.</p> <hr/> <p>However, sub-steps 4a and 4b lack consistency as</p>
document name	Comment				



		cdm refer to mog law 2010 cdm project	this refers to the proposed project (Safah field)	commented in /a/-/c/ below:
		forum 2010 debates ways to reduce flaring	importance of gas flaring in Oman is mentioned in PDD common practice substep 4a; wider reference to gulf region has been added	/a/ Sub-step 4a leads to the conclusion that only two operational and similar activities are observed. Therefore, similar activities are not widely observed and commonly carried out.
		general apg utilisation	reference to Omani Law as far as Natural Gas utilization is available in PDD section B.4, step 2, legal aspects	/b/ This confirms that similar activities are observed and carried out, with each instance discussed in detail in substep 4b.
		mazon petro gas saoc summary of project information	reference available in PDD section B.5, common practice sub step 4a and 4b	/c/ There is no evidence that approximately 10% associated gas remains flared within Block 6 according to PDO's website. Even if so this would not abolish the similarity. However, sub-step 4b) finds here the distinction though at sub-step 4a) the similarity was established.
		oman apg flaring legislation	reference to Omani Law as far as Natural Gas utilization is available in PDD section B.4, step 2, legal aspects	
		oman law	reference to Omani Law as far as Natural Gas utilization is available in PDD section B.4, step 2, legal aspects	/d/ Please clarify the status of PBO. If PDO's shareholders are not state owned companies, please clarify under which conditions <i>they cover all budgeted operating and capital expenditures</i> . Were PBO activities financed from the Oman budget? If yes, this is a principal distinction from the proposed project activity.
		refer to cnpc gas processing plan to avoid flaring 2009	reference to Block 5 available in PDD section B.5, common practice sub step 4a and 4b	
		refer to mpm 1970	reference to Block 6 available in PDD section B.5, common practice sub step 4a and 4b	/e/ Please check information in <a href="http://www.tbpetroleum.com.br/news/see/id">http://www.tbpetroleum.com.br/news/see/id</a>
		refer to pdo	reference to Block 6 available	that the Oman Ministry of Oil and Gas had enacted laws to cut flaring of associated gas where it is economically



		apg-oab130510me	in PDD section B.5, common practice sub step 4a and 4b	via	able, particularly within PDO's concession. Since the 1970's, PDO has invested an estimated US\$800 million in
		refer to pdo plans block 6	reference to Block 6 available in PDD section B.5, common practice sub step 4a and 4b		initiatives aimed at capturing gas for utilization in power stations in the interior, as well as a resource for power and water schemes.
		world bank ggfr partnership apg-2	reference to world bank GGFR is available in PDD in section b4, step 2, legal aspects		CAR is not closed.
		Response 3:			
		<u>Conclusion on Response 3</u>			
		/a1/ Additionality Tool prescribes for Sub-step 4a: "Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region". Sub-step 4a in the PDD leads to the conclusion that only two operational and similar activities are observed (Blocks 5 and 6). Their analysis was provided in Sub-step 4b though should be in Sub-step 4a. Based on the analysis of activities at Block 6 Sub-step 4b describes that the similar activities are carried out in the country. This conclusion should be the deliverable of Sub-step 4a.			
		/a2/ The statement in Sub-step 4a "Flaring associated gas is common practice throughout the country" is not confirmed by the information therein.			
		/b/ Response is accepted.			



		<p><i>operation with the Government of the Sultanate of Oman enables the Company to maximise its ability to contribute to the exploration for and development of the Sultanate's hydrocarbon resources and to pursue its objectives."</i></p> <p><a href="http://www.pdo.co.om/pdoweb/tabid/108/Default.aspx">http://www.pdo.co.om/pdoweb/tabid/108/Default.aspx</a>)</p> <p>Hence, State-owned PDO enjoys certain contractual advantage that renders such projects more economically attractive. PDD section on common practice has been updated accordingly.</p> <p>/e/ the link provided is not active anymore. In any case, the proposed CDM project demonstrates in section B.4 and B.5 that it is not economically attractive without CDM support.</p> <p>Response 4</p> <p>/a1/ The common practice sections 4a and 4b have been re-edited accordingly.</p> <p>/a2/ The statement has been revised</p>	<p>/c/ Response is accepted.</p> <p>/d/ Response is accepted. To confirm the special status of PBO please refer to the PBO Board Of Directors which provides objectives and guidelines to the Managing Director. The Board consists of twelve members; seven including the Chairman, who is the <a href="#">Minister</a> of Oil &amp; Gas, his Excellency Mohammed bin Hamad al Rumhy represent the <a href="#">Government of Oman</a>, and five represent PDO's private shareholders <a href="#">Royal Dutch Shell</a> (<a href="#">Netherlands</a> and <a href="#">UK</a>), <a href="#">Total</a> (<a href="#">France</a>), and <a href="#">Partex</a> (<a href="#">Portugal</a>).</p> <p><a href="http://en.wikipedia.org/wiki/Petroleum_Development_Oman">http://en.wikipedia.org/wiki/Petroleum_Development_Oman</a></p> <p>/e/ Request is withdrawn. Information can be found in <a href="http://www.tbpetroleum.com.br/news/see/id/17141/titulo/Petroleum+Devt+Oman+Plans+to+Halve+Flared+Gas+Volume+in+Block+Six">http://www.tbpetroleum.com.br/news/see/id/17141/titulo/Petroleum+Devt+Oman+Plans+to+Halve+Flared+Gas+Volume+in+Block+Six</a></p> <p>CAR is not closed.</p>
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			<p><u>Conclusion on Response 4</u> /a1/ Response is accepted. /a2/ Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CAR 15.</b> Please justify the appropriateness of using the 10% benchmark for the project activity. Please take note that AM0009 does not suggest to take this benchmark without justification.	3.o.ii	<p>Response 1</p> <p>The benchmark has been justified in accordance with the latest version of the Guidelines on the assessment of investment analysis. An explanation has been added in section B.5</p> <p>Response 2 PDD has been corrected</p> <p>Response 3: Version number has been updated</p>	<p>Response is accepted. The benchmark was changed to . CAR will be closed when the Guidance is corrected to Guidelines.</p> <p>Conclusion on Response 2</p> <p>Response is accepted. CAR is closed based on due amendment made to the PDD.</p> <p>Please indicate the correct Version of the Guidelines: Version 05 rather than 5. The request is closed.</p>
<b>CAR 16.</b> Justify and/or cite assumptions on input data for the investment analysis in a manner that can be validated by the DOE.	3.o.iii	<p>Response 1</p> <p>The source for all input values in IRR has been added in Table B.5. A section named 'Suitability of key input values' has been added in section B.5 of the PDD</p> <p><b>11. CAPEX and OPEX:</b> For CAPEX, "project authorization request" has been provided to DOE by email 29 June 2010. Comparison analysis with all other registered AM0009 projects is hereby provided to DOE. CAPEX breakdown has</p>	<p>Response 1 is not accepted.</p> <hr/> <p>1 = OK for CAPEX. 2. Please provide the DOE the investment decision with projected quantity of the gas recovered and sold. 3. Increase of gas price by 1,5% is imposed from year #5 only (refer to Table B.5). It is not taken into account in IRR calculations. 4. 0.00005279 TJ/m3 is incorrect value; should be 43 MJ/m3 (refer to Table B.5). 5. Please specify what liquid product will be</p>



	<p>been added in PDD section B.5</p> <p><b>12. Projected quantity of gas recovered and sold:</b> Values were provided by the reservoir management team and are detailed in Annex 3 “baseline information” the PDD, please refer to Table 1.2. and 1.3. Those are the values used in investment decision. Reference to Annex has been added in Section B.5 Table B.5. See also “GAS GAINS original source” pdf attached as evidence.</p> <p><b>13. agreed gas price:</b> copy of gas purchase agreement is hereby provide to DOE. Gas price is highlighted on the contract.</p> <p><b>14. Net calorific value of recovered gas:</b> copy of gas purchase agreement is hereby provide to DOE showing the Maximum value acceptable at gas selling point as per gas purchase agreement (or 1154 BTU per SCF). Evidence provided to DOE. Note that here the Gross Heating Value is used for conservativeness.</p> <p><b>15. Projected Oil Price:</b> in line with Omani Government 2008 budget assumptions. Evidence is hereby provided to DOE</p> <p><b>16. Production sharing agreement and cost recovery:</b> The production sharing agreement and cost recovery signed between the original operator back in the 1970's (a company called Quintana) still prevails, a copy of the “amendment to the (suneirah block) petroleum agreement” which shows how operating responsibilities were transferred from original operator Quintana to Occidental of Oman is hereby provided to DOE.</p> <p><b>17.</b> In addition, the production sharing and cost</p>	<p>produced, justify its volumes used in IRR calculation, and explain why the liquid product is sold at the crude oil price.</p> <p>6. Please provide the evidence that the PSA with Quintana is applicable to Occidental of Oman.</p> <p>7. The above comment on issue 6 pertains.</p> <p>8 = OK.</p> <hr/> <p>Other DOE concerns:</p> <ul style="list-style-type: none"> <li>a) Annex 3 does not contain Tables 1.2 and 1.3. Refer to table B.5.</li> <li>b) Please refer to the official source of information about the oil price budgeted in Oman for 2009.</li> <li>c) Please provide the validated evidence GAS GAINS original source.pdf. Please explain the meaning of “existing compression” and “added compression”. Please provide validated data for SGP.</li> <li>d) Please indicate the source of data on “Projected quantity of gas recovered over the project life”. Refer to Table B.5.</li> <li>e) Official oil price for budget purposed at investment decision 55 USD/barrel (for 2008). Official information was not provided to the DOE. Incorrect value is used on excel sheet.</li> <li>f) Expected gross annual average revenues for the Operator as per cost recovery and production sharing agreements: the PSA provided to the DOE does not contain the value 4,048,963 USD.</li> <li>g) Please provide calculation of Operational expenses made by the on-site operator (correspond to around 1.2% of CAPEX)</li> <li>h) Please provide official confirmation of the volumes calculated by the reservoir management team.</li> </ul>
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		<p>recovery agreement signed between Quintana and Government hereby provided to DOE shows that the share of annual production that can be used by operator to recover its costs, then from the remaining, the share that can be retained by Operator. For confidential reasons the sharing structure is not detailed in publicly available documentation but has been validated by DOE. The IRR calculations reflect such structure. For confidential reasons only the total revenues for the Operator are mentioned in PDD.</p> <p><b>18. Income tax for the operator:</b> In accordance with Omani Law, Petroleum Companies are taxed at 55%. Two pieces of evidence are hereby provided to DOE, Oman Tax Law showing the 55% tax rate applicable to such companies and Tax receipts showing that the Operator actually paid taxes.</p> <p>Response 2</p> <p>1. ok 2. The investment decision already provided to DOE on 1<sup>st</sup> Nov. 2011 does not include any specific reference to projected quantities of gas recovered and sold. We hereby provide official letter from the operator on-site mentioning the projected quantities of the gas recovered and sold that were the basis of the investment decision. Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter". A plausibility check can be performed using the projected total gains mentioned at each location in Project Authorisation Requests</p>	<p>i) Depreciation is not included in IRR calculation. It shall be done. j) Amount of gas and oil sold should be not higher than the amount of the recovered APG. Please demonstrate this by the data on excel sheet with IRR calculation. k) Please provide data on a mass balance including (i) recovered and measured APG, (ii) APG at the entrance of GPP, (iii) APG sold, (vi) oil sold. l) Please justify that all input values used in the IRR calculations have been valid and applicable at the time of the investment decision taken by the project participant – 01 April 2008.</p> <p>Conclusion on Response 2</p> <p>1. Please provide validated evidence of OPEX in Table B.8. 2. "2008 gains formal confirmation letter" is accepted. It is unclear how a plausibility check can be performed using the projected total gains mentioned</p>
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		<p>dated at investment decision and provided to DOE on June 30<sup>th</sup> 2011.</p> <p>3. The IRR calculations have been revised. PDD has been clarified in Table B.5</p> <p>4. Value in Table B.5 has been revised accordingly</p> <p>5. Liquid type produced at gas plant has been specified in section B.5 and it's been explained why liquids are sold at oil prices. Justification of the liquid volumes has been added in PDD section B.5 and hereby is provided as evidence a separate report prepared by operator detailing the steps of computer modelling estimation for liquid gains. Besides, original "Hysys" software files for each location are hereby provided to DOE. See "liquid gains justification" evidence folder. Liquid volumes in IRR sheet have been revised. Shrinkage factors at each location due to gas processing have been justified in PDD and revised in IRR sheet.</p> <p>6. We hereby provide an official letter from The Ministry of Oil &amp; Gas confirming that the PSA with Quintana is applicable to Occidental of Oman. See evidence named "statement B9 EPSA terms".</p> <p>7. Please refer to point 6</p> <p>RESPONSE TO OTHER DOE COMMENTS:</p> <p>a) Table B.5 has been revised with correct Table numbers in Annex 3</p> <p>b) State General Budget for 2008 is hereby provided as evidence. The budget price for oil is 45\$. PDD and IRR have been revised accordingly. Note that the value is applicable as the budget was published on 1<sup>st</sup> January 2008. See notes in pdf general budget document attached page 38 (pdf page 47). Oil price</p>	<p>at each location in Project Authorization Requests.</p> <p>3. Accepted</p> <p>4. Accepted. Maximum NCV results in maximum gas price what is conservative in IRR calculation.</p> <p>5. Pending is the request to explain why is the liquid product sold at the crude oil price. Sensitivity of this assumption could be readily analyzed. PP may wish to analyze IRR for 100% gas amount and zero liquid amount.</p> <p>6. Accepted.</p> <p>7. Accepted.</p> <p>8. Accepted.</p> <hr/> <p>a) Accepted.</p> <p>b) Accepted.</p> <p>c) Accepted.</p> <p>d) Accepted.</p> <p>e) Accepted.</p> <p>f) Accepted.</p> <p>g) Pending response on request 1.</p> <p>h) Accepted. DOE cannot check geological-type data received by reservoir management team.</p> <p>i) Accepted.</p> <p>j) Accepted under assumption that physical leaks of gas are negligible. If not, amounts of gas and fluid are over estimated what is conservative in IRR calculations.</p> <p>k) Accepted. See j).</p> <p>l) /a/ OPEX: pending response to issue 1. /b/ Projected liquid volumes: please provide evidence that calculations of liquid volumes and measurements of gas compositions (refer to '2008 gains formal confirmation letter') were made at the time of investment decision. Please provide gas</p>
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		<p>in 2009 Budget was unknown at the time of investment decision.</p> <p>c) Validated evidence gas gains original source.pdf is hereby provided to DOE. Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter" (annex 1).</p> <p>Meaning of existing compression and added compression: Existing compression capacity refers to compression capacity installed at each location prior to implementation of the project activity and as observed during validation site visit at WL location. Added compression capacity refers to newly added compression capacity as part of the proposed project activity as per equipment specifications in section A.4.3 of the PDD.</p> <p>Validated data for SGP: Expected gas gains at SGP (CPF) were determined based on volumes of gas being destroyed at the sonic flare located at Central Production Facility prior to the implementation of the proposed project. Daily Flared volumes data from 01 Jan. 2008 to 31 Dec. 2009 are hereby provided to DOE, Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter" (annex 2). Note that the date of commissioning of the compressors can be identified as 8 Dec. 2009 as the volumes of flared gas go down to almost zero.</p> <p>d) A reference for source of data has been indicated in section B.5 Table B.5. Detailed values are provided in Annex 3, Table 2.</p> <p>e) State General Budget for 2008 is hereby provided as evidence. The budget price for oil is 45\$. PDD</p>	<p>protocols for each site dated 2008.</p>
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		<p>and IRR have been revised accordingly. Note that the value is applicable as the budget was published on 1<sup>st</sup> January Please also refer to point b) above which contains reference to supporting evidence provided.</p> <p>f) Source of data in Table B.5 has been revised. Data source is in IRR excel sheet, "IRR tab" cell P16". Please also refer to point 6 and 7 above for sharing agreement terms between operator and Government.</p> <p>g) Calculations of operational expenses made by the on-site operator have been added to section B.5 table B.8. IRR has been updated accordingly.</p> <p>h) we hereby provide official confirmation letter from the operator on-site. Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter". The letter clearly mentions that gains projections are based on data from reservoir management team.</p> <p>i) Depreciation has not been included in IRR calculations because the operator is allowed to recover all costs including equipment costs as per EPSA agreement with Government. Please refer to attached pdf named "no depreciation evidence - recoverable equipment costs" which is an extract of EPSA between contractor and government confirming that equipment costs can be recovered. Therefore taking depreciation into account in the calculations of taxable income would be double-counting. A clarification has been added in PDD IRR calculations in section B.5, table B.5.</p>	
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	<p>j) The amount of liquids recovered and sold has been revised in IRR and PDD (see also point 5 above). A projection on a mass basis has been added in IRR file ("gains" tab, from cell T1 to T53), based on conversion factors provided by operator. See "liquid gains justification" evidence folder, "liquids model report" for all conversion factors per location. The mass balance confirms that the gross amount of gas recovered minus the amount of net gas sold + the amount liquids sold is equal to internal fuel consumption.</p> <p>k) The amount of liquids recovered and sold has been revised in IRR and PDD (see also point 5 above). Data on mass balance including (i) recovered and measured APG, (ii) APG at the entrance of GPP, (iii) APG sold, (vi) oil sold (in lb/hr) has been added to IRR file ("gains" tab, from cell T1 to T53). See also point j) above for source of data especially conversion factors.</p> <p>l)</p> <table><tr><td>Input Value in IRR</td><td>Valid at inv. decision</td><td>Applicable at inv. decision</td></tr><tr><td>Capex</td><td>Yes, the figure was known prior to the start of the project activity as evidenced</td><td>Yes, the capital expenditures were calculated by process engineer in charge of the project and the</td></tr></table>	Input Value in IRR	Valid at inv. decision	Applicable at inv. decision	Capex	Yes, the figure was known prior to the start of the project activity as evidenced	Yes, the capital expenditures were calculated by process engineer in charge of the project and the	
Input Value in IRR	Valid at inv. decision	Applicable at inv. decision						
Capex	Yes, the figure was known prior to the start of the project activity as evidenced	Yes, the capital expenditures were calculated by process engineer in charge of the project and the						



			by the "Project Authorization Request" provided to DOE.	amount was approved internally at 3 subsequent levels, plus a reviewer. Final approval was granted by the operator's financial controller.	
		Opex	Yes the opex was calculated by process engineer in charge of the project as a percentage of the capex, which was known prior to the start date of the project activity.	Yes, the opex were calculated by process engineer in charge of the project. It amounts to only 1.2% of capex. Opex Breakdown was provided to DOE. A plausibility check was performed in PDD through comparing total operating costs of all other gas recovery and utilization CDM project activities registered with UNFCCC. It shows that the	



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				operating costs as a percentage of CAPEX for the proposed project are clearly on the low side and significantly below the average of comparable projects.	
		Projected gas volumes	Yes, a letter signed by operator on-site confirms that the projected volumes in PDD were used as the basis for investment decision in 2008. Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter"	Yes, the volumes in PDD were calculated by reservoir management team for FW, WL, SAT and JAL locations, as confirmed in the letter signed by operator and provided to DOE. Projected gas gains at SGP (CPF) were determined based on volumes of gas being destroyed at the sonic flare located at Central Production Facility prior to the implementation of	



				the proposed project. Daily Flared volumes data from 01 Jan. 2008 to 31 Dec. 2009 are hereby provided to DOE. Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter"	
		Cost recovery and profit sharing terms	Yes. The production sharing agreement and cost recovery signed between the original operator back in the 1970's (a company called Quintana), which is prior to the start date of project activity	Yes, an official letter from The Ministry of Oil & Gas confirming that the PSA with Quintana is applicable to Occidental of Oman is provided to DOE. See evidence named "statement B9 EPSA terms".	
		Gas price	Yes, the gas price is	Yes, the gas price of US\$ 0.85 per	



			establishment in the gas sales and purchase agreement which was signed between operator and the government of the sultanate of Oman on 29 <sup>th</sup> April 2003. Evidence was provided to DOE on Nov. 1 <sup>st</sup> 2011.	MMBTU increased by 1.5% from year #5 stipulated in gas agreement is correctly applied in IRR calculations.	
		Projected liquids volumes	Yes, liquids volumes are derived from gas volumes, which were the projected volumes used as the basis for investment decision in 2008, as confirmed by operator (see projected gas volumes above).	Yes, liquid volumes derived from gas volumes and calculated by operator on-site, for which a justification is provided to DOE. See "liquid gains justification" evidence folder. Liquid volumes in IRR sheet have been revised, and the justified liquid gains are applied.	

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		liquids price	Yes, liquids are sold at oil price as explained in PDD section B.5. State General Budget for 2008 is hereby provided as evidence. The budget price for oil is 45\$. PDD and IRR have been revised accordingly. Note that the value is applicable as the budget was published on 1 <sup>st</sup> January 2008. See notes in pdf general budget document attached page 38 (pdf page 47). Oil price in 2009 Budget was unknown at the time of investment	Yes, the budget price for oil of 45\$/bbl in State General Budget for 2008 is correctly applied in PDD. Liquids recovered are 'Natural Gas Liquids' or 'condensate' that is swollen into the crude oil for sales therefore revenues from condensate are estimated at crude oil price. There is no LNG production.	
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			decision.		
		Income tax rate	Yes, tax rate is valid at investment decision as it is the standard tax rate In accordance with Omani Law. Oman Tax guide 2009 was provided to DOE. It states that 55% rate has been applied to petroleum companies since 1970's.	Yes the rate is applicable as the operator is a petroleum company while the proposed project is part of Block 9 operations which fall under Block 9 Petroleum Agreement, as confirmed in the official letter from The Ministry of Oil & Gas confirming that the PSA is applicable to Occidental of Oman. See evidence named "statement B9 EPSA terms".	
		<p><u>Response 3:</u></p> <p>1. Validated OPEX: We hereby provide a letter signed by on-site operator stating that (1) OPEX value used in PDD was the basis of investment decision, hence confirming the validity of the value, and (2) OPEX value used in PDD is applicable as actual OPEX value amount to 1,155,674 USD which is slightly higher than value used in PDD. The</p>			
		<p><u>Conclusion on Response 3</u></p> <p>/1-1/ In Response 2, PP reported that "the OPEX was calculated by process engineer in charge of the project</p>			



		<p>operator's statement also details the actual OM costs. Please see attached evidence named "oxy statement OM, implementation, financing". PDD section B.5 has been updated. Note that the operator's statement also confirms that the project was 100% financed by equity.</p> <p>2. Plausibility check can be performed through comparing total net gas gains at each location over the lifetime (in bcf) with estimated gains listed in each Project Authorization Request: (SAT: 4.97/5.35; JL:9.1/9.56; WL:52.27/50.6; FW: 20.297/21.83; CPF 5/10). Value at CPF is lower in PAR compared to value in PDD, which is conservative from an additionality assessment point of view.</p> <p>5. Liquids (NGLs) value is estimated at crude oil price because NGLs are swollen into crude barrels after recovery. Therefore recovered liquids volumes are counted in 'barrel/day' units, valued at crude price and sold as crude. The suggested assumption of 100% gas amount and zero liquid amounts is not realistic as NGL is a by-product of gas refining. Please refer to Figure page 3 of the "liquid model report.rev1" provided to DOE. Besides, general gas processing schematic prepared by US-Energy Information Administration confirms that liquids are a by-product of the process. Please see figure 1 in document downloadable at the link below:  <a href="http://www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2006/ngprocess/ngprocess.pdf">http://www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2006/ngprocess/ngprocess.pdf</a></p> <p>l) /a/: see point 1 above</p>	<p>as a percentage of the CAPEX, which was known prior to the start date of the project activity". "It amounts to only 1.2% of CAPEX". This value appears to be slightly lower (by 14%) than the actual OPEX (evidence "oxy statement OM, implementation, financing"). Please provide documented evidence that the number and type of compressors (define the amount of lube oil) was known to the engineer at the time of investment decision. .</p> <p>/1-2/ IRR calculation uses the constant value of OPEX up to 2019 though at some locations production ceases earlier (SAT in 2014, JAL in 2017, FW in 2018) and OPEX will be lower.</p> <p>/1-3/ With regard to the PP's statement that the project was 100% financed from equity please provide an extract from the company balance sheet showing that the equity was available in between mid-2008 and end-2009.</p> <p>/2/ Response is accepted.</p> <p>However, the overstated gas amounts (see the table) will result in overestimation of ER. Please address this issue in the PDD and assess the implications. Also please provide the spreadsheets with production profiles for each location which are referred to in PAR as attached documents.</p>
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		<p>/b/: Liquids gains were not taken into account in the investment decision to proceed with the proposed project. Liquids gains have been added in the PDD's investment analysis as per requirements of the methodology. Liquid gains calculations used in PDD are based on gas composition models created in 2007, i.e. prior to investment decision. PDD, IRR and ER sheets have been revised. Please find attached revised liquid model report, including dated latest lab composition analyses available at the time of investment decision in Appendix of the report from page 10. See pdf file "liquid model report rev1".</p> <p>Response 4: /1.1/ The lubrication costs indicated in the evidence named "oxy statement OM, implementation, financing.pdf" provided to DOE refer to actual costs only, and were prepared in order to cross check original OM value estimated at the time of investment decision and used in PDD. Thus, the number of compressors was known at the time of calculations of actual costs, which enabled the estimation of lube oil consumption. The original OM value was estimated considering 4 items as stated in PDD table B.8, i.e. labour, maintenance, materials, support &amp; others. Although no further breakdown is available, comparing original OM value to actual values demonstrates the applicability of the original value, i.e. the chosen value in PDD realistically and conservatively reflects the actual costs. Moreover, note that the value does not consider any expenditure related to gas processing at gas plant, even though the additional gains from the proposed project leads for the</p>	<table border="1"> <thead> <tr> <th>Location</th><th>PAR bcs</th><th>Table 1 Annex 3 350 days</th><th>PDD/PAR</th></tr> </thead> <tbody> <tr> <td>SAT</td><td>4,97</td><td>5,35</td><td>1,08</td></tr> <tr> <td>JAL</td><td>9,1</td><td>9,56</td><td>1,05</td></tr> <tr> <td>WL</td><td>50,6</td><td>52,8</td><td>1,04</td></tr> <tr> <td>FW</td><td>20,3</td><td>22,06</td><td>1,09</td></tr> <tr> <td>CPF</td><td>5 mmscfd</td><td>10 mmscfd</td><td>2,0</td></tr> </tbody> </table> <p>/5/ Response is accepted. /I-a/ Closed. /I-b/ Request is superseded by CAR 11 b2-2 and b2-3.</p> <p>CAR is not closed.</p> <p><u>Conclusion on Response 4</u> /1.1/ Response is accepted. /1.2/ Response is accepted. /1.3/ Response is accepted. /2/ Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>	Location	PAR bcs	Table 1 Annex 3 350 days	PDD/PAR	SAT	4,97	5,35	1,08	JAL	9,1	9,56	1,05	WL	50,6	52,8	1,04	FW	20,3	22,06	1,09	CPF	5 mmscfd	10 mmscfd	2,0
Location	PAR bcs	Table 1 Annex 3 350 days	PDD/PAR																								
SAT	4,97	5,35	1,08																								
JAL	9,1	9,56	1,05																								
WL	50,6	52,8	1,04																								
FW	20,3	22,06	1,09																								
CPF	5 mmscfd	10 mmscfd	2,0																								



		<p>operator to additional processing at gas plant. This is conservative for the assessment of additionality.</p> <p>/1.2/ O&amp;M costs in PDD's investment analysis have been revised following to DOE's comment, and according to the below conservative approach compared to PP's original investment decision: The OM value given by operator, basis of investment decision (1,017,105 USD/a), has been applied in the IRR calculation spreadsheet on the basis of the actual wells operating (and the number of operating days in their start-up year) until the point in time where gas gains are expected to be zero at a location, i.e. 2013 for SAT, 2017 for JAL and 2018 for FW. A new O&amp;M tab has been added for further clarification. The PDD has been revised accordingly in section B.5.</p> <p>/1.3/ We hereby provide Oxy's 2008 Annual Report. Page 3 describes Results of Operations and financial position of the company. It can be noticed under "Cash flow" that the cash provided by operating activities amounts in 2008 to 10,652 Millions USD, which demonstrates cash availability to invest in the project without external loan. Please find attached evidence "oxy annual report 2008".</p> <p>/2/ The gas amounts in the PAR are based on the same profiles as in PDD: At SAT, JAL, WL, and FW the projected gas</p>	
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		<p>amounts available for sales over the lifetime calculated in PDD version 19jun2012 differ from the values in PAR because different assumptions were used by project operator to estimate gas gains available for sales during the design of the proposed project (values in the PARs), The main differences are 1) the fuel gas consumption and 2) the shrinkage factor at gas plant. It was assumed by operator 0.25 mmscf/d fuel gas consumption at all locations whereas the fuel gas consumption in 19june PDD was adjusted following DOE's CAR17. Besides, it was assumed 10% shrinkage at all these locations by operator, while shrinkage factors in 19june PDD were adjusted following DOE's CAR16 point 5. This could be evidenced through recalculating total gains over the lifetime using the IRR sheet provided originally for GSP which result in exact same values as in PARs, and it's also confirmed in the evidence named "2008 gains formal confirmation letter" provided to DOE as part of PP response 2.</p> <p>At CPF, the value mentioned in PAR appears to have been chosen conservatively compared to the value used investment decision and PDD. However, the value used in PDD is valid, applicable as well as conservative from an additionality assessment perspective:</p> <p>Valid &amp; applicable: The validity of the value was confirmed by onsite operator in the letter from the onsite operator addressed to DOE named "2008 gains formal confirmation letter". This letter also confirms the applicability of the value through explaining that the value was determined based on flared volumes prior to the implementation of the project. On the other hand, the CPF PAR is dated</p>	
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		<p>after the investment decision and is not applicable to investment analysis, Considering the “considerable degree of uncertainty” (quotation from the monitoring methodology) of gas projections and the prime compression capacity installed at CPF (2*5 mmscfd, see page 5), the projections used in PDD are deemed by the operator to reflect more accurately actual gains and subsequently actual ER, and they are also valid at investment decision.</p> <p>Conservative from an additionality assessment perspective: Applying the value from the PAR (lower gains) would result in lower revenues from the sales of gas and subsequently a lower IRR value. In the unlikely scenario where the actual gains would be closer to value in PAR, then the project’s additionality would only be strengthened.</p>	
<p><b>CAR 17.</b> No explanation is provided in Section B.6.1 as to how the procedures in the approved methodology AM0009 Version 06.0.0 to calculate project emissions are applied to the proposed project activity. In emission reduction calculations, the project emissions are calculated as the product of the fixed value of gas volume, gas NCV and CO2 emission factor for</p>	3.p.i	<p>Response 1</p> <p>As confirmed during onsite visit, The equipment used as part of the project activity is electricity-driven. Project emissions calculations in PDD section B.6.1, B.6.3 and subsequent monitoring sections have been revised in accordance with AM0009 methodology requirements, as well as emissions reductions calculations. Detailed calculations have been added in Annex 3.</p> <p>The approach for gas consumption has been revised and clarified and adjusted to reflect decreasing gas</p>	<p>Response 1 is not accepted.</p> <p>/a/ Please describe how the quantity of electricity consumed by the project electricity consumption source j in year y (MWh/yr) is defined.</p> <p>/b/ Also please clarify what electricity consumption sources, except compressors, are taken into account in the PDD.</p> <p>/c/ Also please confirm that the existing gas turbine power plants have efficiency 42% at the average ambient temperature (this value is used in calculations of ER). Please provide the manufacturer specification of the gas turbine used.</p>

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<p>methane. The approach to definition of gas consumption is not provided nor is explained why the gas consumption does not decrease with the yearly decrease of gas recovery. The use of CO2 emission factor for methane is not conservative; the emission factor of the recovered associated gas shall be used.</p>		<p>gains over the lifetime of the project activity.</p> <p>In project emissions calculations the CO2 emission factor has been revised in line with the Tool to "Tool to calculate baseline, project and/or leakage emissions from electricity consumption".</p> <p>All subsequent sections in PDD have been revised accordingly, including IRR and ER calculations.</p> <p>Response 2</p> <p>Description of how the quantity of electricity consumed by the project electricity consumption source j in year y (MWh/yr) is defined has been added in section B.6.1 under 'project emissions from electricity consumption'. Electricity consumption sources have been added in section B.6.1. Detailed calculations of fuel gas needed for power generation and provide electricity consumption to the project activity have been added in Annex 3. A reference has been added in IRR parameter Table B.5 in section B.5.</p> <p>Turbine efficiency: We hereby provide the specifications of the Siemens SGT-100 (Tempest) gas turbine installed at on-site power plant (see attached specs page 4 in evidence folder). The installed capacity onsite includes 2*5.4MW. The specifications indicate an electrical efficiency of 31%. Note that no project specific</p>	<p>CAR is not closed.</p> <p><u>Conclusion on Response 2</u></p> <p>/a/ Response is accepted.</p> <p>/b/ Request is closed based on information in Section A.4.3: Project electricity consumption will be measured through standard electricity meters located on power line providing electricity to compressor packages.</p> <p>/c/ Justification of electrical efficiency 28,8% is accepted with reference to the sources as follows below.  <a href="http://www.scribd.com/doc/62883266/Temperature-Variation">http://www.scribd.com/doc/62883266/Temperature-Variation</a>  <a href="http://143.107.98.150/Silvio/PME2517/GEgasTurbine.pdf">http://143.107.98.150/Silvio/PME2517/GEgasTurbine.pdf</a>  <a href="http://academicjournals.org/ijps/PDF/pdf2011/18Jul/Rahman%20et%20al.pdf">http://academicjournals.org/ijps/PDF/pdf2011/18Jul/Rahman%20et%20al.pdf</a>  <a href="http://www.energymanagertraining.com/announcements/isue25/winners_papers_Issue25/05_PankajKPatel.pdf">http://www.energymanagertraining.com/announcements/isue25/winners_papers_Issue25/05_PankajKPatel.pdf</a></p> <p>Calculation of gas consumption by gas turbines for project own needs is accepted.</p> <p>CAR will be closed when:</p> <p>/a/ dimension kWh of (energy needed = rated power kW per compressor /28,8%) is corrected to kW in PDD and on IRR and ER excel sheets.</p> <p>/b/ equality of NCV used on IRR and ER excel sheets is provided.</p> <p><u>Conclusion on Response 3</u></p> <p>/a/ - closed</p> <p>/b/ Request is superseded by CAR 11 a.</p>
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		<p>efficiency is available as the power plant does not monitor natural gas consumption. However we refer to gas turbine technology overview prepared by U.S Environmental Protection Agency (document hereby provided to DOE, see 'EPA influence of ambient temp on gas turbines in evidence folder) to apply a correction factor to reflect high ambient temperature at the project site. The EPA document states that: "At elevated inlet air temperatures, both the power and efficiency decrease. The power decreases due to the decreased air flow mass rate (the density of air declines as temperature increases) and the efficiency decreases because the compressor requires more power to compress air of higher temperature" (refer to pages 8 and 9). EPA provides percentages variations compared to ISO rated output in figure 3 page 9 "ambient temperature effect on performance". It can be noted from the figure that the performance is about 93% of ISO at 32 degrees C, which corresponds to average temperatures in Oman. Therefore we apply an efficiency of 28.8% (<math>=31 \times 0.93</math>).</p> <p>PDD has been updated accordingly including Annex 3 Table 9, as well as ER and IRR sheets.</p> <p><u>Response 3:</u>  /a/ dimension has been corrected in PDD annex 3, ER sheet.  /b/ NCV value used to estimate financial projections, especially revenues generated by the proposed project activity differs from the NCV value used to estimate emission reductions because the locations of the measurements are different. Applying the same NCV value in both calculations would result in either (1) overestimation of revenues generated by</p>	CAR is closed.
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		the project because gas specifications not meeting the requirements (including in terms of NCV) of the National pipeline would not qualify and would not lead to revenues generation (as per gas purchase agreement provided to DOE), or (2) underestimate of Emissions Reductions as methodology AM0009 version 4 requires the measurement of NCV at point F in methodology AM0009 Version 06.0.0 Figure 2, i.e. after pre-treatment (phase separation and compression) at each location.	
<b>CAR 18.</b> CO2 emission factor of the recovered gas shall be measured to calculate project emissions and included in Section 7.1.	3.t.i	<p>Response 1</p> <p>Please refer to response to CAR 17, since the approach to calculate project emissions has been revised, and conservative default value has been applied in CO2 emission factor calculation as per guidance from the <i>"Tool to calculate baseline, project and/or leakage emissions from electricity consumption (Version 1)"</i>.</p>	<p>Response is accepted.</p> <p>With the response to CAR 17, CAR 18 becomes irrelevant.</p> <p>CAR is withdrawn.</p>
<b>CAR 19.</b> No specific information is provided in Section B.7.1 for measured gas volume and NCV as on the measurement methods and procedures, including a specification of standards and calibration procedures to be applied, accuracy of the measurement method,	3.t.ii.a	<p>Response 1</p> <p>Measurement method and procedures including calibration procedures, accuracy and responsibility of measurement has been added in section B.7.1 for gas volume and NCV.</p> <p>Incorrect reference in Annex 4 has been deleted.</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>

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and allocation of responsibility for measurements. Reference in Annex 4 to recording of data on power delivered to the grid has no sense.			
<b>CAR 20.</b> A detailed description of the monitoring plan as to measurements of gas NCV is not provided.	3.u.i	<p>Response 1</p> <p>Description of the monitoring plan as to measurements of gas NCV has been added in Section B.7.2, as well as the monitoring of electricity consumption for project emission calculation.</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CAR 21.</b> Please provide transparency as to responsibility for monitoring at each of five project locations.	3.u.ii	<p>Response 1</p> <p>Responsibility for monitoring at each location has been described in PDD section B.7.2.</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CAR 22.</b> The responsibilities for and institutional arrangements for data collection and archiving are not indicated	3.u.iii	<p>Response 1</p> <p>Responsibilities and arrangements for data collection and archiving have also been added in section B.7.2</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CAR 23.</b> Table B.7 indicates 01/04/2008 as the start of the project activity. Please provide consistency.	3.w.i.	<p>Response 1</p> <p>The starting date of the project is 01/04/2008 and section C.1.1. has been revised. This date marks financial controller approval (final internal approval) of earliest significant capital expenditures in relation</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>

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		to the proposed project activity, i.e. the purchase of new pipelines and re-routes at Far West location, as per internal project authorization request	
<b>CAR 24.</b> In fact the length of the fixed crediting period is 8 years since according to Table B.10 no emission reduction is generated in 2020 and 2021.	3.z.cc	<p>Response 1</p> <p>The length of the fixed crediting period has been revised in PDD.</p>	<p>Response is accepted.</p> <p>CAR is closed based on due amendment made to the PDD.</p>
<b>CL 01.</b> The project site consists of five locations and it is not clear which particular location is identified by the indicated coordinates. Please provide the DOE the source of data on geographical coordinates.	3.f.ii	<p>Response 1</p> <p>PDD has been updated including the 5 locations.</p> <p>Response 2</p> <p>we hereby provide official confirmation letter from the operator on-site. Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter". The letter clearly mentions the geographic coordinates of each station.</p>	<p>Response is accepted.</p> <p>However, CL 01 is complemented by additional request: Please provide the DOE the source of data on geographical coordinates.</p> <p>CL is not closed</p> <p>Conclusion on Response 2</p> <p>Response is accepted.</p> <p>CL is closed based on the evidence provided to the DOE.</p>
<b>CL 02.</b> Please clarify how the AM0009 applicability condition as regards the equality of reinjected gas amount in the project activity and the baseline is maintained.	3.l.ii	<p>Response 1</p> <p>In accordance with the methodology, the gas-lift gas under the baseline uses the same source as under the project activity and the same quantity as under the project activity (scenario O1).</p> <p>The amount of re-injected gas depends on the</p>	<p>Response 1 is not accepted.</p> <p>Please provide the validated pdf evidence. Logo of Occidental is not enough.</p> <p>CL is not closed.</p> <p>Conclusion on Response 2</p> <p>Response is accepted.</p>



		<p>production plan of the oil fields. The plan of oil production mainly depends on the well condition and reserve amount of oil. Future gas-lift quantities have been calculated by reservoir management team over the life time of the project. The proposed project will utilise associated gas in excess of volumes used in the gas-lift system. We hereby provide DOE with original gas gains source document which shows that the project activity only utilises the gas in excess of gas volumes used in gas-lift system. Please refer to pdf evidence named "GAS GAINS original source"</p> <p>PDD section B.2 has been clarified.</p> <p>Response 2</p> <p>we hereby provide official confirmation letter from the operator on-site. Please refer to evidence folder, pdf file named "2008 gains formal confirmation letter", Annex 1.</p>	CL is closed based on the evidence provided to the DOE.
<b>CL 03.</b> Please make it clear if the gas flaring at the block 9 does not violate the emission standards as prescribed by the Ministerial Decision 5/86 of May 17, 1986 (concerns smoke and sulphur).	3.n.i	<p>Response 1</p> <p>The PDD has been clarified section B.4 step 2. We hereby provide the renewed environmental permit issued by Omani Ministry of Environment affairs valid 06/05/2012.</p>	<p>Response is accepted.</p> <p>CL is closed based on the evidence provided to the DOE.</p>
<b>CL 04.</b> Please explain why the sum of molar fractions of hydrocarbons	3.r.i	Response 1	Response is accepted.





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in Table "Gross heating value measured by PO" 94% rather than 100%. Also please explain the meaning of gross value (net rather gross calorific value is used in AM0009 Version 06.0.0).		Data source for NCV has been revised and subsequent calculations in PDD have been updated. Justification has been provided in PDD.  Response 2: Mole percentages have been revised in PDD and excel sheet.	CL is closed based on the amendments made to the PDD.  Please refer to CAR 11 /c/: Please ensure 100% (not 100,1%) balance of recovered gas components in PDD and in excel sheet.
<b>CL 05.</b> Please provide the DOE a copy of the contract.	3.w.ii	Response 1  The project starting date is identified from <i>Project Authorization Request</i> (PAR) Num. 4A0087, which is for FW gas reduction. Full PAR was provided to DOE by email on 30 June 2011. An extract of the PAR highlighting the start date is hereby provided to DOE.	Response is accepted.  CL is closed based on the evidence provided to the DOE.
<b>CL 06.</b> Please clarify if there are Host Party requirements to undertake an environmental impact assessment for the projects like the present one.	3.z.ff	Response 1  The main regulation with regard to requirements to undertake an EIA is the ROYAL DECREE No. 114/2001 ISSUING THE LAW ON CONSERVATION OF THE ENVIRONMENT AND PREVENTION OF POLLUTION, The decree states that "The owner of any source or area of work which – according to the basis specified by the Ministry – may constitute an avoidable or curable risk to the environment, shall submit, prior to the application for the environmental permit, a detailed environmental impact assessment study confirming that the benefits of the source or area of work surpass the potential damage to the environment."	Response is accepted.  CL is closed based on the evidence provided to the DOE.



		<p>And also that “No permit shall be given to practice any activity, which may cause inevitable or incurable damage to the environment.”</p> <p>The environmental permit was renewed for the 7<sup>th</sup> time on 25/07/2010 by Ministry of Environment and Climate Affairs (MECA), which demonstrates that the project activity meets all requirements stipulated in the Law on Conservation of Environment and Prevention of Pollution. It was also confirmed during a meeting with MECA and DOE that no EIA was required for the associated gas recovery project. A copy of the valid permit is hereby provided as evidence.</p> <p>The PDD section D has been updated.</p>	
<p><b>CL 07.</b> Please provide DOE a sample invitation for comments by local stakeholders.</p>	3.z.gg.i	<p>Response 1</p> <p>As described in sections A.4 and D.1, the project is located in the middle of the Omani desert on an existing oil field, while the nearest town is about 50 km away. As confirmed by DOE during on-site visit, the project entity indicated that only one tribe leaves nearby. All men from the tribe are employed on project site at the block 9 oil field and the tribe mainly consists of members of the same family. Therefore no formal written invitation for comments was considered necessary nor practical or most efficient, so the members of the tribe were informed orally in an open and transparent manner by the Health and Safety Department of the Operator on-site. Questionnaires were distributed that contained a description of the project activity and reasonable time for comments was given. This has been confirmed by DOE during on-site visit.</p>	<p>Response is accepted.</p> <p>CL is closed based on the evidence provided to the DOE and the amendments made to the PDD.</p>

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		Section E.1 of the PDD has been further clarified.	
<b>CL 08.</b> Please provide the DOE filled in questionnaires.	3.z.gg.ii	Response 1 All filled in questionnaires have been provided to DOE, please refer to our emails dated 29 June 2011.	Response is accepted. CL is closed based on the evidence provided to the DOE.
<b>CL 09.</b> Please describe on the excel spreadsheet the method of calculating cost recovery (gas/fuel parts) and gas/fuel revenues.	a.h.j	Response 1  4 Comments have added on the IRR excel sheet to clarify the method of calculating cost recovery and gas/fuel revenues.  See IRR Tab, column B, cell 8,9,13,14	Response is accepted.  CL is closed based on the comments added to the excel sheet.
<b>CL 10.</b> Please provide DOE for review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants.	c.tt	Response 1  The main technical and financial information is from the Project Authorisation Request (PAR) where costs and equipments are described. The PAR is provided to DOE by email on 30 June 2010.  We hereby provide the press release as public announcement (see attached evidence named "public announcement".) in Nationwide Newspaper after signature of ERPA.  There is no financial report available yet as the project has only recently started operation.	Response is accepted.  CL is closed based on the information provided to the DOE.
<b>CL 11.</b> Please provide for DOE assessment previous decisions by the project participants involved.	c.yy.i	Response 1  We hereby provide the letter where the project participant informs the on-site operator of its decision to develop the proposed project activity under the	Response is accepted.  CL is closed based on the evidence provided to the DOE.



		Clean Development Mechanism. The letter is dated 12 <sup>th</sup> Feb. 2008, prior to the decision to proceed with the equipment purchase.	
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## APPENDIX B

### COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, the DOE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. BUREAU VERITAS CERTIFICATION published the project document on the UNFCCC CDM website (<http://cdm.unfccc.int>) on 23/06/2011 and invited comments within 22/07/2011 by Parties, stakeholders and non-governmental organizations. Comments were received for the CDM project “Associated Gas Recovery and Utilization at Block 9”. The details of the comments received, responses by the project participants and the explanation of how due account of these is taken by the validation team are given below.

There were a total of 26 comments posted through UNFCCC interface during the Global Stakeholder Consultation process, though Comments #13 to #26 are the same as Comments #1 to #12.

Sl. No.	Details of the commenter	Date of the comment	Comment received [unedited]	PP's response	Explanation of how due account of the comment is taken by the validation team
1	sud	Not dated	&#61558; DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant.	The project was 100% financed by equity. The applicability and validity of all input values in PDD was validated by DOE. Justification is provided in validation report.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.
2	sud	Not dated	&#61558; DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP can not give different DPR's and FR's. They must submit	The project was 100% financed by equity. The applicability and validity of all input values in	Comment is fully addressed in PDD and validation report. No further



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			only the one given to Banks and other agencies while obtaining loans and decision making time.	PDD was validated by DOE. Justification is provided in validation report.	action deemed necessary.
3	sud	Not dated	&#61558; DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project	The applicability and validity of all input values in PDD was validated by DOE. Justification is provided in validation report.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.
4	sud	Not dated	&#61558; DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also.	The project was 100% financed by equity. The applicability and validity of all input values in PDD was validated by DOE. Justification is provided in validation report.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.
5	sud	Not dated	&#61558; Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical.	The project was 100% financed by equity. The applicability and validity of all input values in PDD was validated by DOE. Justification is provided in validation report.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.
6	sud	Not dated	&#61558; Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of	The project was 100% financed by equity. The applicability and validity	Comment is fully addressed in PDD and validation



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			letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE.	of all input values in PDD was validated by DOE. Justification is provided in validation report.	report. No further action deemed necessary.
7	sud	Not dated	&#61558; DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts.	The project was 100% financed by equity. The applicability and validity of all input values in PDD was validated by DOE. Justification is provided in validation report.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.
8	sud	Not dated	&#61558; Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues	Prior consideration of the CDM is described in section B.5 of the PDD. The project was 100% financed by equity.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.



			<p>while agreeing to give loan to this projects? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the evidence document from bank? Is this document printed now a days or earlier. DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine and not forged and date changed by putting back dated. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts since these can be cooked up easily. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation.</p>		
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9			<p>How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. UNFCCC CDM process cannot be degraded by fabricating and misinterpreting the project base line and additionality.</p>	<p>The baseline determination process has been described in PDD and all information used has been validated by DOE. Please refer to PDD section B.4 and validation report.</p>	<p>Comment is fully addressed in PDD and validation report. No further action deemed necessary.</p>
10			<p>From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was co-ordinating at PP or CER buyer? The same person who has done the</p>	<p>Please refer to validation report for the CV details of auditors involved. Marketing was done through different office</p>	<p>Comment is fully addressed in PDD and validation report. No further action deemed</p>

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			marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please.	and country than the auditing staff.	necessary.
11	sud		&#61558; If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-additional and getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an affidavit from the PP's that any misrepresentation or false statement with respect	Not applicable. The project is the first CDM project in this sectoral scope in the Host Country.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.

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			this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.		
12	sud		<p>&amp;#61558; DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. It may so happen that the values, party names, dates are fabricated and misrepresented in this project. DOE should terminate their contract for this project immediately. This is the only way out to protect the value of CDM process. If the PP is purchasing second hand or second quality equipment and inflating the purchase order values and invoices,</p>	The project uses new equipment and the applicability and validity of all input values in PDD was validated by DOE. Justification is provided in validation report and in PDD.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.

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			this must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation.		
13	sud		<p>&amp;#61558; Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE since invoices will invariably be inflated and forged. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst.</p>	The project uses new equipment and the applicability and validity of all input values in PDD was validated by DOE. Justification is provided in validation report and in PDD.	Comment is fully addressed in PDD and validation report. No further action deemed necessary.
14	sud		1) DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project.	Same as comment #3 above	-
15	sud		2) DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also.	Same as comment #4 above	-

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16	sud		3) Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical.	Same as comment #5 above	-
17	sud		4) Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE.	Same as comment #6 above	-
18	sud		5) DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or	Same as comment #7 above	-

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			Consultant to cross check the facts.		
19	sud		6) DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant.	Same as comment #1 above	-
20	sud		7) DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP can not give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time.	Same as comment #2 above	-
21	sud		8) Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this projects? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the evidence document from bank? Is this document printed now a days or earlier. DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine and not forged and date changed	Same as comment #8 above	-

## VALIDATION REPORT



			by putting back dated. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts since these can be cooked up easily. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation.		
22	sud		9) Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE since invoices will invariably be inflated and forged. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and	Same as comment #13 above	-

## VALIDATION REPORT

			certified accounts by a legally acceptable financial analyst.		
23	sud		<p>10) From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was co-ordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please.</p>	Same as comment #10 above	-
24	sud		<p>11) If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-additional and</p>	Same as comment #11 above	-





			<p>getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an affidavit from the PP's that any misrepresentation or false statement with respect this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.</p>		
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## VALIDATION REPORT



25	sud		<p>12) DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. It may so happen that the values, party names, dates are fabricated and misrepresented in this project. DOE should terminate their contract for this project immediately. This is the only way out to protect the value of CDM process. If the PP is purchasing second hand or second quality equipment and inflating the purchase order values and invoices, this must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation.</p>	Same as comment #12 above	-
26	sud		<p>13) How is the base line defined in this</p>	Same as comment #9	-



			<p>project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. UNFCCC CDM process cannot be degraded by fabricating and misinterpreting the project base line and additionality.</p>	above	
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