PoA Title	**Petrotrin Oil Fields Associated Gas Recovery and Utilization PoA**
Real Case CPA Title	Petrotrin Oilfield Associated Gas Recovery and Utilization Project – CPA1
ERM CVS Project Reference	2393.v1
Client Name	TOSL Engineering Limited
Client Address	8-10 Maharaj Avenue Marabella, San Fernando, Trinidad

CDM Validation Report

ERM Certification and Verification Services
2nd Floor, Exchequer Court
33 St Mary Axe
London EC3A 8AA

Version Control	**Date**
Version 1.0	18 September 2012 (draft report)
Version 2.0	31 December 2012 (final report)

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Abbreviations

AG	Associated Gas
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH_4	Methane
CL	Clarification request
CME	Coordinating/Managing Entity
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COP	Conference of the Parties
CPA	CDM Project Activity
CPA-DD	CPA Design Document
DNA	Designated National Authority
FAR	Forward Action Request
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GSP	Global Stakeholder Process
GWP	Global Warming Potential
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LoA	Letter of approval
LPC	Low Pressure Compressor
LPG	Liquefied Petroleum Gas
MOP	Meeting of the Parties
MP	Monitoring Plan
MW/MWh	Mega Watt/Mega Watt hour
NCV	Net Calorific Value
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
OM	Operating Margin
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
PPA	Power Purchase Agreement
SCE	Standard coal equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added tax
VVM	CDM Validation and Verification Manual

1 PoA Information

1.1 Key information

PoA Title	Petrotrin Oil Fields Associated Gas Recovery and Utilization PoA
PoA Location(s)	The Republic of Trinidad and Tobago
Host Party(ies)	The Republic of Trinidad and Tobago
Other Party(ies)	Not applicable
Coordinating/Managing Entity	TOSL Engineering Limited
Project participants	Petroleum Company of Trinidad and Tobago Limited (PETROTRIN) TOSL Engineering Limited

Methodology(ies) used	AM0009_version 6.0.0 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented"
Methodological tool(s) used	"Tool to calculate project or leakage CO2 emissions from fossil fuel combustion_ver2" "Tool to calculate baseline, project and/or leakage emissions from electricity consumption_ver1" "Tool for the demonstration and assessment of additionality_ver6.0.0" "Assessment of the validity of the original/current bseline and to update of the baseline at the renewal of the crediting period_ver3.0.1" Tool to calculate the emission factor for an electricity system, Version 02.2.1
Sectoral Scope(s) (as per http://cdm.unfccc.int/DOE/scopes.html)	10

PoA Design Document GSP Version	Date: 01/08/2012	**PoA Design Document Final Version**	Date: 26 December 2012
	Version Number: 1.1		Version Number: 7

Starting date of the PoA	03 August 2012 (the start of the Global Stakeholder Consultation Period)
Duration of the PoA	28 years from the start date

Date(s) of validation site visit	13/08/2012 – 17/08/2012

2 Summary and Validation Opinion

PoA Title	Petrotrin Oil Fields Associated Gas Recovery and Utilization PoA
Name of Client	TOSL Engineering Limited

Basis of validation	ERM CVS based its validation work on: • CDM approved monitoring methodology(ies) - AM0009_version 6.0.0 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented" • CDM Validation and Verification Standard (version 02.0) • ERM CVS's internal CDM validation methodologies and protocols • CDM decisions and guidance issued by the CDM Executive Board including EB 65 Annex 3 • UNFCCC criteria for the Clean Development Mechanism • Host Country criteria for the Clean Development Mechanism
Responsibilities of ERM CVS	ERM CVS is responsible to provide a thorough independent third party assessment of the proposed CDM programme of activities (PoA) to ensure that the proposed CDM PoA meets all the identified and applicable criteria for registration of PoA under the CDM.
Responsibilities of Project participants	The CME is responsible for preparing the PoA-DD, generic CPA-DD, real case CPA-DD, supporting documentation and providing all necessary evidences to support the information included in the PoA-DD, generic CPA-DD and real case CPA-DD.
Activities performed	ERM CVS conducted its activities in accordance with the CDM Validation and Verification Standard. The validation consisted of a review of project documentation, site visits, interviews with relevant personnel, cross checking information through other reliable sources and reporting. Validation work was based on a validation report template that sets out relevant CDM requirements. Where necessary, Clarification Requests and Corrective Action Requests were raised and closed out with the CME. The validation work was subject to detailed Technical Review and assessment prior to submission. No component of the PoA was excluded from the validation.
ERM CVS Conclusion	ERM Certification and Verification Services (ERM CVS) has performed the validation of the PoA against the criteria for the Clean Development Mechanism as set out by the Conference of the Parties and the UNFCCC CDM Executive Board, and host country criteria. The validation employed standard auditing techniques, and addressed the requirements of the CDM Validation and Verification Standard. The Party involved in the project fulfils the criteria for participation in the CDM, and has issued a letter of approval (LoA) for the project and authorised the Project participants. The LoA of the host Party confirms the contribution of the PoA towards sustainable development. The validation has provided sufficient evidence to demonstrate that the PoA is not the baseline scenario, and that emission reductions would be additional to what would have taken place in the absence of the CDM project activity. Eligibility criteria are included that comply with the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' and ensure that CPAs can be appropriately included in the PoA. The PoA (and its typical CPA) meets the applicability criteria and correctly applies methodology AM0009_version 6.0.0 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented", and is therefore expected to result in real, measurable and long term reductions in greenhouse gas emissions. The monitoring plan provides for the collection and archiving of data sufficient to ensure that emission reductions can be verified at CPA level. In summary, it is the opinion of ERM CVS that the PoA as described in the PoA-DD Version 7 of 26

	December 2012, meets all stated criteria of the CDM, correctly applies the methodology, and is expected to result in real, measurable and long term emission reductions. ERM CVS therefore requests the CDM Executive Board approves registration of the PoA.
Signed on behalf of ERM CVS	
Name:	Melanie Eddis
Date:	31 December 2012

3 Introduction

3.1 Validation Objectives

The purpose of validation is to ensure a thorough, independent assessment of activities submitted for registration as a proposed CDM Programme of Activities (PoA) against the applicable CDM requirements.

The DOE is responsible for reporting the results of its assessment in a validation report and submitting this validation report, along with the supporting documents to the CDM Executive Board as part of the request for registration of a proposed CDM PoA. The DOE also presents its opinion on the compliance of the proposed CDM PoA complies with the applicable CDM requirements, and only requests registration if this is a positive opinion.

In the course of validation, ERM CVS assesses additionality of the PoA; eligibility criteria for inclusion of a proposed CPA in the registered PoA; operational and management arrangements established by the coordinating/managing entity (CME) for the implementation of the PoA; applicability of an approved CDM methodology; monitoring plan (MP); Compliance with the relevant host country criteria; and Consistency between CDM-POA-DD and the PoA generic CDM-CPA-DD to be used for inclusion of a CPA in the registered PoA.

3.1.1 Validation Criteria

ERM CVS applies the following principles in performing its validation:

- Consistency
- Transparency
- Impartiality, independence and safeguarding against conflicts of interest
- Confidentiality

In all aspects of its work, ERM CVS ensures that the information and data reported are accurate, conservative, relevant, credible, reliable and complete.

3.2 Scope

The validation scope addresses the Programme of Activities as described in the Programme of Activities design document (PoA-DD), generic CDM Project Activity design document (generic CPA-DD), real case CDM Project Actitvity design document (real case CPA-DD) and associated documentation. The PoA-DD, generic CPA-DD, real case CPA-DD and associated documentation are reviewed against the criteria and requirements stated in the CDM Validation and Verification Standard (VVS) and Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, as well as relevant decisions made by the CDM Executive Board.

The validation scope also included an assessment of completeness and accuracy of documentation, evaluation of evidences, information and assumptions made in the PoA-DD, generic CPA-DD, real case CPA-DD and supporting documentation. Findings of the validation of the real-case CPA are described in a separate CPA validation report.

3.3 Contract Review

Prior to contracting with the client, a full review of the project and the validation requirements was made. This addressed both commercial risk and project risks associated with conducting the validation activities and confirmed the availability of an appropriately qualified team to conduct the validation.

3.4 Validation Personnel

Based on ERM CVS's review of the PoA, a validation team was established that takes into account the coverage of the technical area(s), sectoral scope(s) and relevant host country experience.

Personnel who were involved in the validation of this PoA were:

Validation Team

Name	Role	CDM Requirements	Technical area	Financial Expertise	Participated in site visit?
Jonathan Avis	Team Leader	Yes	No	No	Yes
Lisa Campbell	Technical Expert	Yes	Yes	No	Yes
Ignacio Barutta	Support Validator	Yes	No	No	Yes
Simon Cochrane	Financial Expert	Yes	No	Yes	No

DOE Head Office

Name	Role	CDM Requirements	Knowledge relevant to the technical area
Ying Li	Technical Reviewer	Yes	Yes

3.5 Summary of CVs of the validation personnel

Jonathan Avis is CDM Business Manager for ERM CVS, and a GHG Assessor and Technical Reviewer with over 6 years experience in the CDM. Since joining ERM CVS Jonathan has worked as a Technical Reviewer or GHG Assessor on more than 30 CDM validations in Renewable Energy (scope 1), more than 10 CDM validations in Manufacturing Industries (scope 04), 6 CDM validations in Mining (scope 8), and 5 CDM validations in Waste Handling and Disposal (scope 13). Jonathan's previous work experience involved screening and due diligence of carbon projects, Project Design Document (PDD) development, quality assurance and technical review of CDM project documentation, the development of carbon monitoring plans, and management of carbon projects through the validation, registration and verification stages. Jonathan has completed the ERM CVS CDM training as well as the GHGMI Renewable Energy training and Gold Standard training. Jonathan holds a BA in Geography and an MSc in Environmental Change and Management from the University of Oxford.

Lisa Campbell is the Director of Climate Change Services for the Oil and Gas Sector globally for ERM and is a Chemical Engineer with over 25 years of experience as a recognized leader in climate change services. She has executed a diverse portfolio of greenhouse gas (GHG) projects across oil and gas, power, renewable energy, and chemical industries, with many of the major oil and gas industry firms as key clients. She has been involved in development of the IPIECA guidelines for GHG project accounting, GGFR flare reduction standard, and numerous Clean Development Mechanism and voluntary reduction projects for the Oil and Gas industry. In the carbon market, she has been responsible for evaluation and transaction support around carbon capture and geologic sequestration (CCS) projects, gas flare reduction, and renewable energy projects. Lisa is Technical Reviewer for ERM CVS verification

Ignacio Barutta has over 9 years of experience in the Environmental Engineering field and more than 7 years in the CDM and GHG emissions management arena. Ignacio is the author and developer of AM0063 and has participated in the development of many other UNFCCC approved methodologies. In addition to his work in CDM, Ignacio has worked on GHG emissions inventories, carbon footprint/carbon management, Life Cycle assessment (LCA), SH&E permitting and compliance, environmental due diligence, risk assessment, waste management, air emissions inventories/air quality control projects and site investigation/remediation (soil and groundwater).

Simon Cochrane has 1 year of CDM experience as a Financial Expert. He has worked as FE on 40 validations, including Wind, Hydro, Waste Water and LFG projects. Simon has 11 years' experience working as a financial advisor in environmental consulting. Simon is AAT qualified, and part qualified in CIMA (relevant units include Investment Appraisal).

Ying Li has been working in CDM for the past 5 years, originally as a project developer and consultant and since 2010, as a Technical Reviewer for ERM CVS. So far Ying has worked on 5 validations and 30 verifications in the sectors of LFG, Wind, Hydro, Natural Gas Generation, WHR - Steel, WHR - Cement and CMM. Before working for ERM CVS, Ying worked as a CDM project developer completing 11 registrations and more that 20 verifications. Yang has completed the ERM CVS CDM training and GHGMI Renewable Energy and Landfill Training. Ying also has BEng in Environmental Engineering and a MEng in Biochemical Engineering.

4 Validation Approach

In carrying out its validation work, ERM CVS has:

(a) Determined whether the proposed PoA complies with the requirements of paragraph 37 of the CDM Modalities and Procedures (M&Ps), the applicability conditions of the selected methodology and guidance issued by the Board;

(b) Assessed the claims and assumptions made in the PoA Design Document (PoA-DD). The evidence used in this assessment has not been limited to that provided by the project participants.

The validation was carried out in accordance with the most recent version of the VVS and relevant EB standards and guidance for PoAs. The validation process employed standard auditing techniques and undertook necessary cross-checks and follow-up actions to ascertain the correctness of the information. The validation team included staff with experience in the relevant technical areas within the sectoral scope, and included local host country expertise, sectoral knowledge, and financial expertise. The validation report and associated documents have undergone a thorough technical review by ERM CVS before being submitted to the CDM Executive Board for registration. The validation consisted of the following key stages:

- Upload of the PoA-DD, generic CPA-DD and real case CPA-DD for Global Stakeholder Process (GSP), receipt of any comments from stakeholders
- Review of documentation including PoA-DD, generic CPA-DD, real case CPA-DD, methodology and key supporting documents and references
- A visit to the site of the first real case CPA, including interviews with personnel responsible for developing the project
- Development of a draft validation report, identifying non-compliances including Corrective Action Requests (CARs) and Clarification Requests (CLs), taking into account findings of the GSP, desk review and site visit / interviews
- Resolution of outstanding issues (CARs and CLs) and development of a final validation report and validation opinion
- Independent technical review and report approval

4.1 Global Stakeholder Process

At the start of the validation, in accordance with the latest version of the “Procedures for processing and reporting on validation CDM project activities”, the unvalidated PoA-DD and real case CPA-DD supplied by the client were uploaded on the UNFCCC website to be available for global stakeholder review. The GSP period was from 03/08/2012 - 01/09/2012

No comments were received.

4.2 Document Review

A detailed document review of the PoA-DD, real case CPA-DD, methodology and all other associated documentation and references took place in advance of the site visit, and additional documents that were not available for the desk review were requested for review during the site visit. The document review includes:

- A review of data and information to verify the correctness, credibility and interpretation of presented information;
- Cross checks between information provided in the PoA-DD and real case CPA-DD and information from other sources, not limited to those provided by the PPs

Where the review of the PoA-DD or real case CPA-DD at the document review stage raised issues, these were further reviewed and validated through supporting documentation and cross-checking from other sources and interviewing relevant personnel involved in the PoA and real case CPA during the site visit. During the document review the project team also compared the proposed PoA with available information relating to projects or technologies similar to the proposed CDM PoA under validation. Where appropriate, the validation team assessed the appropriateness of formulae and the correctness of calculations presented by the CME. A list of all documents reviewed or referred to in the course of this validation is included in Appendix A.

4.3 Site visit and Interviews

The site visit included a tour of the real case CPA1 project site, which is described in a separate CPA validation report, and interviews with the CME.

Site visits and interviews provide additional and background to the PoA as well as cross checks with other documentation. Interviews were undertaken with relevant stakeholders in the host country, as well as personnel with knowledge of the PoA design and implementation. A list of interviewees, and the main topics discussed with each person can be found in appendix A.

The site visit was designed to enable the validation team to

- undertake a detailed review of additional documentation and verify the supporting documentation;
- assess the validity of the boundary, both of the PoA and CPAs;
- cross-check the validity of the information contained in the POA-DD and real case CPA-DD with other sources of information; and
- interview relevant stakeholders involved in the PoA and real case CPA as required.

4.4 Preparation of Draft Validation Report

Based on the findings of the desk review and site visit, ERM CVS prepared a draft validation report including a list of CARs and CLs, and provided this to the PPs. Where issues are identified that need to be further elaborated, researched or added to in order to confirm that the PoA meets the CDM requirements and can achieve credible emission reductions, ERM CVS identified these issues in the DVR so that they could be discussed with the PPs and concluded upon in the final validation report (FVR).

4.4.1 Remediation requests

Where issues were identified, ERM CVS raised one of the following remediation requests:

Clarification Request (CL): where information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Corrective Action Request (CAR): where:

- Mistakes have been made that will influence the ability of the PoA to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met; or
- There is a risk that emission reductions cannot be monitored or calculated.

Forward Action Requests (FAR): where it was necessary to highlight issues related to project implementation that require review during the first verification of the PoA. FARs shall not relate to the CDM requirements for registration.

CARs and CLs must be ‘closed out’ before the validation can be concluded. Close out is only possible where the PPs modify the project design, rectify the PoA-DD or provide adequate additional explanation or evidence that satisfies ERM CVS’s concerns. The validation process may be halted until the CARs and CLs are addressed to the validation team’s satisfaction.

4.5 Final Validation Report and Validation Opinion

The final validation report (FVR) is completed when the CARs and CLs have been closed out to the satisfaction of ERM CVS. The FVR includes the validation opinion that sets out the validation conclusion regarding the compliance of the POA with CDM requirements. Validation of the real-case CPA is reported in a separate CPA validation report.

4.6 Internal Quality Control

The process of validation and decision of the validation team has been subject to an independent Technical Review. The scope of the Technical Review process is to independently assess that all procedures have been followed, necessary requirements have been met, and all conclusions are justified. The final validation decision is based on the findings and conclusions of the

validation team, assessing the compliance of the PoA with the CDM requirements, and the technical evaluation of the independent technical reviewer. The final report is then reviewed and approved by the qualified signatory / final decision maker within ERM CVS.

5 Validation findings – Approval & Participation, Authorisation, Contribution to Sustainable Development, and Modalities of Communication

5.1 Approval & Participation

As per VVS section VII.F, ERM CVS assessed whether the DNA of each Party indicated as being involved in the PoA has provided an appropriate letter of approval (LoA).

	ERM CVS has confirmed that the LoA has been issued and provides confirmation of:			
Party	**Ratified Kyoto Protocol?**	**Voluntary Participation**	**Contribution to Sustainable Development**	**Exact project title**
Republic of Trinidad and Tobago (Host Party)	Yes	Yes	Yes	Yes
Not Applicable (Annex 1 Party)	n/a	n/a	n/a	n/a

ERM CVS received the LoA from the PP and authenticity was checked by receiving a confirmation e-mail from the Trinidad and Tobago DNA, who also submitted hard copies of the issued LoA to ERM CVS. There is no Annex I party involved.

	Question	**Validation findings (including justification and substantiation of information, data and evidence)**	**Draft OK/CAR/ CL**	**Final OK/ NOT OK**
5.1.1	Are LoAs in place for every host country, covering all PPs, that confirm ▪ Ratification of the Kyoto Protocol ▪ Voluntary Participation ▪ Reference to the precise title in the PoA-DD ▪ Contribution to sustainable development (host party only)	The LoA issued by the local DNA "Ministry of Planning, Housing and the Environment" of the Republic of Trinidad and Tobago had not yet been issued at the time of site visit. CAR 01 was raised. **CAR01 is closed**: During the validation process, the CME submitted an electronic copy of the LoA issued by the "Ministry of Environment and Water Resources" /20/ to the DOE. This is not consistent with the UNFCCC website, where the Ministry of Planning, Housing and Envirnoment is referred to be the local DNA. Therefore ERM CVS requested and obtained confirmation of the submitted LoA from the UNFCCC contact person. In addition, an official hard copy of the LoA was submitted to ERM CVS headquarters in London. ERM CVS confirms that the host country ratified the Kyoto Protocol, the LoA referenced the precise title of the PoA and confirmed that the PoA was voluntary and would contribute to the Sustainable Development of Trinidad and Tobago.	~~CAR01~~	OK
5.1.2	Is the information in the LoAs consistent with the other project documentation, including PP names, etc	See above comment on CAR 1. **CAR01 is closed**: ERM CVS confirmed the consistency between the information contained in the LoA /20/ and the revised version of the PoA-DD.	~~CAR01~~	OK

ERM CVS also reviewed whether the LoAs contain any additional specifications:

	Question	**Validation findings (including justification and substantiation of information, data and evidence)**	**Draft OK/CAR/ CL**	**Final OK/ NOT OK**
5.1.3	Does any LoA contain additional specification or conditions of the PoA? If so,	See above comment on CAR 1.	~~CAR01~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
	are these conditions fully complied with?	**CAR01 is closed**: The reviewed LoA /20/ issued by the local DNA does not contain any additional specifications or conditions of the PoA.		
5.1.4	If any LoA references a specific version of the Validation Report and this version cannot be submitted, then has either of the following been submitted? ▪ a statement indicating final LoA has not been received or ▪ an updated Validation Report	See above comment on CAR 1. **CAR01 is closed**: The reviewed LoA /20/ issued by the local DNA makes no reference to the validation report.	~~CAR01~~	OK

Conclusion

ERM CVS confirmed that the LoA has been received from the party involved in the project (Republic of Trinidad and Tobago). ERM CVS's validation of the approval status of the PoA confirmed that:

a) The Party is a Party to the Kyoto Protocol

b) Participation is voluntary

c) The PoA contributes to the sustainable development of the Host Party

d) The title of the PoA is identical in the LoA and the PoA-DD.

ERM CVS therefore confirms that the LoA is in accordance with the requirements of the VVS section VII.F.

5.2 Authorisation

As per VVS section G, ERM CVS evaluated whether all PPs are listed in a consistent manner in section A.3 of the PoA-DD and have been appropriately authorised by a Party to the Kyoto Protocol. ERM CVS also checked the consistency of information between the PoA-DD, Letters of Approval (LoAs) and the Modalities of Communication (MoC).

PPs (list all)	Is the PP listed in Section A.3 of PoA-DD?	Are contact details given in Annex 1 of PoA-DD?	Does the LoA name the authorised PP?	Is information in the MoC consistent with PoA-DD and LoA?
Petroleum Company of Trinidad and Tobago Limited (PETROTRIN)	Yes	Yes	Yes	Yes
TOSL Engineering Limited	Yes	Yes	Yes	Yes

.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.2.1	Is the correct information provided on PPs, and consistently applied in section A and Appendix 1 of the PoA-DD and other project documentation (Letters of Approval and Modalities of Communication)?	No contact details for TOSL Engineering Limited had been provided in Appendix 1 of the PoA-DD. Neither LoA nor MoC had been issued during DVR stage. **CAR02 is closed**: ERM CVS confirms that the latest version of the PoA-DD included the contact details of a TOSL and Petrotrin representatives, in line with the MoC /22/ signatories for each party involved.	~~CAR 02~~	OK
	Can it be confirmed that there are no entities other than those approved as PPs included in section A or Annex 1 of the PoA-DD.	Based on the revision of the PoA DD and interviews with PPs representatives during the site visit, no other entities will be included as project participants at the PoA level.	OK	OK
	Does the host party wish to be considered a Project Participant? If so, is this correctly presented in the PDD?	The PoA-DD correctly states in section A.4 that the host party does not wishes to be considered a project participant.	OK	OK

Conclusion

All PPs (CME and CPA1 operator) to the project activity have been authorised by a party to the Kyoto Protocol, and ERM CVS has reviewed the letters of approval to confirm this. The PPs are listed in a consistent manner in the PoA-DD and all related project documentation, including the LoAs and Modalities of Communication. No entities other than those approved as PPs are included in section A.3 or Annex 1 of the PoA-DD.

5.3 Contribution to Sustainable Development

As per VVS section H, ERM CVS evaluated whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM project activity to the sustainable development of the host Party.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
5.3.1	Does the LOA from the Host Party confirm that the project activity contributes to the sustainable development of that country?	LoA had not been issued during DVR stage. Refer to above CAR1. **CAR01 is closed**: The CME submitted ERM CVS the LoA /20/ issued by the local DNA of Trinidad and Tobago in line with the PoA-DD provisions, confirming that the proposed PoA contributes to the Sustainable Development of the host country.	~~CAR01~~	OK

5.4 Modalities of Communication

As per VVS section I, ERM CVS validated that the MoC statement has been correctly completed and duly authorised. ERM CVS also validated the corporate identity of all project participants and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories (VVS para 53).

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.4.1	Are all corporate and personal details in the MoC, including specimen signatures, correct?	The MoC was not available at the time of the validation site visit. Refer to above CAR02. **CAR02 is closed**: ERM CVS confirms that all personal details including specimen signatories are correctly addressed in the MoC. In addition, the CME submitted a notarized hard copy of the MoC, which was reviewed by ERM CVS to confirm all corporate and personal details in the MoC, including specimen signatures and employment status. Scans of the signatories have been attached to the MoC electronic copy /22/.	~~CAR02~~	OK
	Has the MoC statement been correctly completed, including: • Using the latest form? • All information, including annex 1, has been correctly provided? • Listing all PPs?	Refer to above CAR01. **CAR01 is closed**: The CME submitted a copy of the MoC which is found to be consistent with the applicable form and correctly provided all the required information, including the PPs in accordance with the revised version of the PoA-DD Annex 1.	~~CAR01~~	OK
	Has the MoC been signed by the authorised signatories of the PP? Are the signatories consistent with the names given in Annex 1 of the MoC?	Refer to above CAR01. **CAR01 is closed**: ERM CVS confirmed that the signatories are consistent with the names given in Annex 1 of the MoC /22/ as well as with Annex 1 of the revised version of the PoA-DD.	~~CAR01~~	OK

Conclusion

ERM CVS has performed due diligence on the MoC statement in accordance with the requirements established in the VVS. ERM CVS can confirm that the MoC statement complies with all relevant forms and requirements.

6 Validation findings – GSP, PoA-DD and Project Description

6.1 Main changes between the PoA-DD version published for GSP and the final version submitted for registration:

- CPA types further clarified. There are now 9 CPA types.
- Generic CPA-DDs included for each type of CPA
- Further guidance on the investment analysis included
- Diagrams were updated throughout the document to be more accurate for the CPA types included in the PoA
- CME changed from Petroleum Company of Trinidad and Tobago Limited (PETROTRIN) to TOSL Engineering Limited
- Editorial corrections made to the language and formatting
- Other changes related to the CARs and CLs, as identified in Appendix B

6.2 Global stakeholder consultation

As per VVS section VII.E, the GSP-DDs were made publicly available for a period of 30 days from 03 August 2012 to 01 September 2012 on the UNFCCC website for the Global stakeholder process.
http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/PI8K1FKKZH13FMHSHDP1RTGFA7FE6X/view.html

No comments were received.

6.3 Programme of Activities Design Document (PoA-DD)

As per VVS section J, ERM CVS reviewed the PoA-DD to determine whether it has been prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC website.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
6.3.1	Is the PoA-DD prepared in accordance with the latest forms and guidance by the CDM EB? http://cdm.unfccc.int/Reference/PDDs_Forms/PoA/index.html	ERM CVS can confirm that the PoA-DD has been checked against the Programme of Activities Design Document form (Version 02.0) and guidelines for completing the Programme of Activities Design Document form (Version 02.0) available on the CDM website at the time of submitting for validation, which is currently valid, arriving to the conclusion that the PoA-DD is in compliance with the template and guidelines.	OK	OK

Conclusion

ERM CVS has confirmed that the PoA-DD has been prepared in accordance with the latest form and with relevant guidance.

6.4 PoA Description

As per VVS section K, ERM CVS reviewed the description of the PoA in the PoA-DD in order to confirm the framework developed for the implementation of the PoA, and for defining a CPA under the PoA, and to evaluate whether it provides a clear and accurate description of the proposed CDM PoA and typical CPA. Validation of the PoA description was based on review of documentation, a physical inspection of the site of the first real case CPA, and interviews.

6.4.1 Description of the PoA

Policy/measure or stated goal of the PoA:

The goal of the PoA is to avoid greenhouse-gas emissions resulting from venting and flaring of associated gases from producing oil fields, specifically CH_4 emissions resulting from flaring, or flaring at casing gas vents and/or vents at the tank tops (flashing losses) in gathering stations, in order to benefit from this resource and reduce GHG emissions in the Oil & Gas sector.

Description of the PoA:

The PoA under evaluation consists of reducing the GHG emissions resulting from flaring gas casing vents and flashing losses at the top of the tanks in gathering stations by means of recovering the associated gas (AG) under the following schemes (CPA types):

Measures and technology types (Technology type as referred in the PoA-DD):

1) A Gas Compression Facility (GCF) involves pre-treatment of the captured gas, including cleaning, and compression to pipeline pressures.

2) A Gas Processing Facility (GPF) involves pre-treatment of the captured gas – including cleaning, processing and compression of the dry gas to pipeline gas pressure – before injection into the gas pipeline to the offtaker. In this option, after some initial cleaning the recovered associated gas is processed and separated into hydrocarbon products (LPG, Condensates and Dry Gas).

3) Similar to type 2 above, with the exception that some or all of the dry gas produced by the GPF is compressed to Compressed Natural Gas (CNG), which is then transported by trucks/barges to a compression facility where it is decompressed before injection into a gas pipeline. As in type II, in a combined Gas Processing and Compression Facility (GPCF), captured gas is pre-treated; it is cleaned, compressed and processed to separate it into hydrocarbon products (LPG, condensates and dry gas) before the dry gas is compressed to CNG.

Satisfaction of energy demand:

At the same time, the energy demand of any of the above mentioned types of proposed measures or technologies could be satisfied based one or a combination of the following:

A) The CPA facility does not access a national or regional grid. Power and other energy requirements of the project activity are supplied from onsite fossil-fuelled energy-generating facilities. A portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to meet onsite energy requirements in the project facilities.

B) The CPA facility accesses an existing national or regional grid. All power and other energy requirements of the project activity are supplied from the grid. No onsite energy generation is utilized in the project facilities.

C) The CPA facility accesses an existing national or regional grid. All or part of the power requirements of the project activity are supplied from the grid. A portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to supply the balance of the power demand of the project facilities, as well as all non-power energy demand. In summary, CPAs of this type use both grid electricity and recovered associated gas for their energy demand.

The combination between the measure or technology type with the satisfaction of the energy demand gives place to nine possible CPA types as follows:

Energy demand satisfied on-site with recovered AG

- 1-A
- 1-B
- 1-C

Energy demand satisfy only with grid electricity consumption

- 2-A
- 2-B
- 2-C

Energy demand satisfied with a combination of grid electricity and recovered AG

- 3-A
- 3-B
- 3-C

From the above description, nine types of CPAs might be implemented under the PoA under evaluation.

The geographical area is comprised of the Republic of Trinidad and Tobago, specifically oil fields either operated by Petrotrin or other private operators (either on or off-shore). There are no oil fields on the island of Tobago, hence in reality CPAs will only be located on the island of Trinidad.

The findings of our validation of the project description in the PoA-DD are set out below.

6.4.2 PoA Boundary, Location and Status

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.2 (a)	**Boundary:** Is the definition of the boundary for the PoA correctly stated in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all CPAs included in the PoA will be implemented, taking into consideration all applicable national and/or sectoral policies and regulations? How was this validated?	Based on the description and figures provided in section A.5. of the PoA-DD, the boundary for the PoA has been correctly stated (The Republic of Trinidad and Tobago). However, the following statement from section A.2. page 1 of the PoA-DD, might neither be fully in line with section A.5 nor clear with respect to the PoA boundary: "*additional host countries, is anticipated*" Please see CL 01. The revised version of the PoA-DD removed this wording. The PoA only includes Trinidad and Tobago. The policies/regulations described in the PoA-DD had been cross-checked and evaluated based on the following sources: - Ministry of Energy and Energy Affairs website /02/ - Electronic copies of the following documents, provided by the PP as follows: 1. National Climate Change Policy /04/ 2. Air pollution rules /03/ 3. Occupational Safety and Health Act /05/ 4. Environmental Management Act /06/ 5. Water pollution rules /07//08/ 6. Petroleum Act (1969) /25/ and Petroleum Regulations (1970) /15/ - Interviews with representatives of the Ministry of Energy and Energy Affairs ERM CVS carried out a review of the relevant national and/or sectoral policies	~~CL01~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		and regulations in the host country, namely: • Republic of Trinidad and Tobago: Air Pollution Rules DRAFT, June 2010 (these rules are in draft form and have not yet been adopted by the Parliament, therefore have not yet entered into force. The rules require entities to register emissions sources and gain permits for any sources above the defined thresholds in the rules. The Environmental Management Authority shall decide whether to issue the requested permits based on an assessment of the sources and the environmental impacts, and they may impose reduction targets. The rules do set thresholds for emissions of volatile organic compounds, which are contained in associated gas, although the rules remain in draft and therefore are not applicable at the time of validation. Based on interviews with the Ministry of Energy & Energy Affairs, it is unclear when and if these rules will be adopted and passed into law. • Republic of Trinidad and Tobago: Environmental Management Act, 2000. This act entered into force in 2001, and requires new installations and modifications of existing installations to obtain a Certificate of Environmental Clearance (CEC). However the act does not require associated gas capture or use and the CEC process only applies if installations are modified or new installations are built. • Republic of Trinidad and Tobago: Water Pollution Rules (2001) and the Water Pollution (Amendment) Rules (2006). These rules do not contain any requirements concerning venting, flaring or use of associated gas • Republic of Trinidad and Tobago: Occupational Safety and Health Act (2004). This act does not contain any requirements concerning venting, flaring or use of associated gas. • Republic of Trinidad and Tobago: National Climate Change Policy (July 2011). This policy sets high-level general goals and objectives concerning the response to climate change, both mitigation and adaptation, but does not include any specific requirements or targets for reducing associated gas venting or flaring in the oil and gas industry. • Petroleum Act (1969) and Petroleum Regulations (1970). These include clauses stipulating environmental protection, but there are no specific requirements relating to venting, flaring or use of associated gas. Therefore ERM CVS has been able to confirm that there are no mandatory policies or regulations requiring the use of associated gas at oil fields within the project boundary (i.e. the host country), and has therefore been able to conclude that the PoA is not implementing any mandatory policy or regulation. However the description in the PoA-DD lacks clarity and does not provide the reader with a clear understanding of the relation between the relevant national and/or sectoral policies and the PoA. Please refer to CL 01: Section A.2 of the revised version of the PoA-DD includes a clear description of the local policy framework and shows how the proposed PoA is expected to early contribute to cutting GHG emissions in the host country while an energy efficiency policy is still under development. In addition, the CME submitted pending documents related to the local policy framework /23/ /24/. **CL01 is closed**		
6.4.2 (b)	**Policy/measure or stated goal of the PoA:** Does the PoA-DD describe the policy/measure or stated goal that the PoA seeks to promote? How was this validated?	The PoA-DD makes reference to the PoA goal and measures, which have been described in the corresponding sections. These goal and measures are in line with the country energy efficiency and climate change mitigation initiatives /02/ as well as draft forthcoming regulations (e.g. /03/) – please see 6.4.2(a) above for further details.	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.2 (c)	**Confirmation of voluntary action:** Does the POA-DD provide confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity? How was this validated?	Section A.2. of the PoA-DD provides a clear statement confirming that the CME is voluntarily participating. The validity of this statement has been confirmed by interviews to the PP representatives during the validation site visit.	OK	OK

Conclusion

The process undertaken to validate the accuracy and completeness of the PoA description is set out in detail above. ERM CVS has confirmed that the description in the PoA-DD provides a clear, accurate and complete understanding of the nature of the proposed CDM PoA.

6.4.3 Description of technologies and measures

The description of the technologies and measures to be applied in CPAs under this PoA has been validated as follows:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.3 (a)	Does the description technologies and measures in the PoA-DD section A.6 provide a clear, accurate and sufficiently detailed description of all relevant elements of a typical CPA? For example, does the CPA description provide clear indication of: a) List of main technologies involved b) List of main equipment and installations c) Monitoring equipment d) (Ranges of) capacities and efficiencies e) Emissions sources and GHGs involved	**CL02** was raised to clarify aspects of the description of technologies and measures as described below. a) A list of the main technologies involved has been included, and this has been validated against the details of the first real case CPA (FSR /09/ /10/) as well as with the provisions of the applied methodology. b) There was a lack of description in the PoA-DD regarding the AG recovery technologies to be in place (for example at the well heads, gathering stations, boosters/pre-compressors, etc.), before the AG reaches the pipeline where it will be sent to the boosters/low pressure compressors (LPCs), etc. **CL02-b is closed**: The revised version of the PoA-DD incorporated a clear explanation of the type and configuration of equipment involved in the PoA, including for each CPA type under the PoA. A clear distinction between the pre-project and PoA situation has been provided. c) There was a lack of description of the monitoring equipment applicable to each type of CPA described in the PoA-DD **CL02-c is closed**: Figures 2 to 10 have been included in section A.6 of the revised version of the PoA-DD clearly showing the type of parameters to be monitored as well as the monitoring location for each type of CPA. Details regarding the monitoring equipment have been provided in section B.7.2, Part II of the PoA-DD. d) OK: The PoA-DD provides a conceptual description of the equipment, that is considered sufficient at the PoA level since capacities and efficiency ranges may vary depending on the intrinsic characteristics of each specific CPA. e) No description of the GHGs and GHG sources involved in the different CPA types had been provided in the GSP PoA-DD. **CL02-e is closed**: The revised version of the PoA-DD incorporated Figure11 which provides a clear description of the GHG emission	~~CL02~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		sources in the pre-project situation, which in this PoA is the same as the baseline situation. Given that the differences between the different types of CPAs described relies in the project configurations and not the pre-project GHG emission sources, having included only 1 figure to represent the GHG emission sources of the baseline is found to be consistent with the provisions of the PoA-DD and applicable methodology. **CL02 is closed**.		
6.4.3 (b)	**Description: Existing installations** a) If the typical CPA involves the alteration of an existing facility, installation or process, does the description clearly state the differences resulting from the PoA compared to the pre-project situation?	No description of the types of baseline scenario facilities/equipment expected to be in place within the PoA boundary for the different types of CPAs had been provided in the GSP PoA-DD. The differences between the PoA and the baseline situation had not been clearly/comprehensively addressed. CL03 was raised. **CL03 is closed**: The text added to the revised version of the PoA-DD regarding the pre-project situation is found to be consistent with the situation observed on-site during the validation site visit.	~~CL03~~	OK

Conclusion

ERM CVS has confirmed that the description of technologies and measures in the PoA-DD provides a clear, accurate and complete understanding of the precise nature of the PoA and generic CPAs, and the technical aspects of its implementation. The description sufficiently covers all relevant elements, is accurate, and clearly states the differences resulting from the PoA compared to the pre-project situation.

6.4.4 Description of baseline scenario

The 'Guidelines for completing the Programme Design Document form for CDM Programmes of Activities' (Version 02.0, EB 67 Annex 28) require that the PoA-DD contains a full description of the technology(ies) used in the baseline scenario for (each type of) generic CPA in section A.6 of the PoA-DD. This was evaluated as follows.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.4 (a)	Is there a full description of the technology of the baseline scenario for (each type of) generic CPA in section A.6 of the PoA-DD?	A clear description of the baseline scenario technology had not been provided for each type of CPA. Please see CL 03 **CL03 is closed**: The CME provided a clear description of the pre-project technology in the revised version of the PoA-DD which is found to be in line with the observations of the validation team during the site visit. Even specific equipment may be in place in future CPAs, the CME clearly described the kind of pre-project configuration applying under the PoA.	~~CL03~~	OK
6.4.4 (b)	Does the description include a list of the typical equipment(s) and systems that would have been in place in the absence of the typical CPA (if any)	A clear description of the baseline scenario equipment has not been provided for each type of CPA. Please see CL 03 **CL03 is closed**: Based on the fact that all of the nine generic CPA types consist of the recovery of AG that would have been flared or vented and also based on the observations during the validation site visit, ERM CVS can confirm that the baseline and pre-project description related to the AG and associated technology added to the PoA-DD would be the same for any of the CPA types and is considered to be adequately described in section A.6., having clearly described the typical equipment that would be in place without the CPA implementation.	~~CL03~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.4 (c)	Does the description include an explanation of how the same types and levels of services provided by the project activity would have been provided in the baseline scenario (if applicable).	In the baseline scenario, the associated gas would continue to be vented or flared. The services and products provided by CPAs under the PoA include: • compression of AG (& sent to a gas pipeline); • sending AG to a gas processing plant (to be processed into dry gas, Liquefied Petroleum Gas (LPG) & condensate); and • sending AG to a gas processing plant (to be processed into dry gas, LPG & condensate) where the dry gas is compressed & transported to a pipeline by trucks. These types of services would not be provided in the baseline, as the gas would be vented or flared.	OK	OK

Conclusion

The description of the baseline scenario for (each type of) typical CPA provides the reader with a clear understanding of the baseline of a typical CPA which in this PoA would be the same for any of the nine typical CPAs described

7 Validation Findings - Eligibility Criteria for Inclusion of a CPA in a PoA

7.1 Description of Eligibility Criteria

Following guidance from EB 65 Annex 3, ERM CVS evaluated the eligibility criteria contained in section B.2 of the PoA-DD to evaluate whether they are verifiable, sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA. The following eligibility criteria were added to the revised version of the PoA-DD in order to consider the nine possible types of CPA under the PoA.

CPA type 1-A (gas compression facilities without access to the grid, where power and other energy requirements of the project activity are supplied from onsite fossil-fuelled energy-generating facilities. A portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to meet onsite energy requirements)

1. *The geographical boundary of the CPA must be within the borders of the relevant PoA Host Party. This shall be demonstrated by comparing the geographical coordinates of the CPA with the geographic coordinates of the boundaries of the relevant Host Party.*
2. *The project must not be included in another PoA or exist as a stand-alone project submission under the CDM. This shall be demonstrated by comparing the geographic coordinates and CPA owners of the CPA with other CDM project submissions.*
3. *The CPA start date shall not be before 03/08/2012. This shall be checked in the CPA-DD.*
4. *The CPA must utilize new equipment for scrubbing and compression of associated gas and for separation and other processes included in a GPF or a GPCF. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies or a business plan.*
5. *All recovered gas must come 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. Further, all associated gas from oil wells included the CPA must be either vented or flared in the baseline. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*
6. *The CPA shall 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. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*
7. *The CPA shall be designed such that associated gases may only be injected into the oil reservoir, if at all, for the purpose of the gas-lift process. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*
8. *The CPA must meet the requirements of AM0009 version 6.0.0 with regard to applicability conditions (see Part II Section B.2 for each CPA Type), baseline setting and monitoring as well as all Tools associated with this methodology. This shall be demonstrated in the CPA-DD and supported with documentary evidence such as pre-feasibility studies.*
9. *The CPA start date must be reasonable, based on an investment implementation plan indicating the timing of financial closure and the first commitment of funds for the purchase of gathering pipelines, scrubbers or compressors for the CPA. This shall be demonstrated through the project design, supported through documentation such as a business or investment plan.*
10. *The CPA must meet the PoA requirements pertaining to the demonstration of additionality. Pre-tax benchmark analysis is required, applying the benchmark set at the PoA level. The minimum relevant technical and economic parameters and approaches provided in the detailed framework in Part I Section B.1 of the PoA-DD must be considered. The investment analysis must include a sensitivity analysis of key parameters, including the volume of gas recovered, volume delivered, CAPEX, OPEX, and gas price. The investment analysis shall be checked through an assessment of the CPA-DD based on the framework for demonstrating additionality established in Part I Section B.1 of the PoA-DD.*
11. *The CPA must have complied with CDM and local requirements to hold a local stakeholder consultation. This shall be demonstrated through documentary evidence such as: copies of invitations to stakeholder dialogues, newspaper announcements, signed and dated meeting participation lists, photographs, meeting minutes.*
12. *The CPAs must assess potential environmental impacts of the project activity in accordance with host country requirements and, if required by the host party, perform an EIA (or equivalent as per host-country requirements). This shall be demonstrated through documentary evidence of the host country requirements, as well as approval in cases where an EIA is required, in for example the form of a license or formal confirmation of compliance.*
13. *The CPA owner must provide the CME with a declaration as to whether or not the CPA will receive donor funding. For CPAs that are funded partially or wholly with donor funding, the CPA owner must provide the CME with written confirmation from the Annex I party that the funding provided does not result in a diversion of official development assistance.*
14. *The CPA description of the technology/measure to be applied shall include specifications including the level and type of service provided. This shall be documented through preparatory project studies or pre-feasibility studies. In Trinidad, there are no specific testing/certification requirements for the technologies employed in the CPA types eligible for inclusion in this PoA*
15. *The technologies to be applied in the CPA must correspond to Technology 1, described in Part I Section A.6. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies.*
16. *The CPA must be designed to recover associated gas that, after compression and phase separation, will be:*

- *Partly consumed on-site to meet energy demands; and*
- *Transported to a gas pipeline without prior processing.*

This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.

17. *Energy required for the operation of field activities shall be supplied via onsite fossil fuel consumption and/or off-grid captive power generation in the baseline and for the project. Captive power generation shall not be supplied through combined heat and power production. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 1-B (gas compression facilities where all power and energy requirements are supplied from the grid)

For CPA type 1-B, applicable criteria are 1 to 14 of CPA1-A, plus the 2 following additional conditions:

18. *The CPA must be designed to recover associated gas that, after compression and phase separation, will be:*
    - *Transported to a gas pipeline without further processing.*

    This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.
19. *Energy required for the operation of field activities shall be supplied from a grid in the baseline and for the project. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 1-C (gas compression facilities where part of the power requirements are supplied from the grid and a portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to supply the balance of the power demand of the baseline and project facilities, as well as all non-power energy demand)

For CPA type 1-C, applicable criteria are 1 to 14 of CPA1-A, plus the 2 following additional conditions:

20. *The CPA must be designed to recover associated gas that, after compression and phase separation, will be:*
    - *Partly consumed on-site to meet energy demands; and*
    - *Transported to a gas pipeline without further processing.*

    This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.
21. *Energy required for the operation of field activities shall be supplied via onsite fossil fuel consumption and from a grid in the baseline and for the project. Captive power production is not allowed. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 2-A (gas processing facilities without access to the grid, where power and other energy requirements of the project activity are supplied from onsite fossil-fuelled energy-generating facilities. A portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to meet onsite energy requirements)

For CPA type 2-A, applicable criteria are 1 to 13 of CPA1-A, plus the 3 following additional conditions:

22. *The technologies to be applied in the CPA must correspond to Technology 2, described in Part I Section A.6. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies.*
23. *The CPA must be designed to recover associated gas that, after compression and phase separation will be:*
    - *Partly consumed on-site to meet energy demands; and*
    - *Transported to a processing plant where it is processed into hydrocarbon products (e.g. dry gas, LPG and condensates). The dry gas is then transported to a gas pipeline.*

    This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.
24. *Energy required for the operation of field activities shall be supplied via onsite fossil fuel consumption and/or off-grid captive power generation in the baseline and for the project. Captive power generation shall not be supplied through combined heat and power production. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 2-B (gas processing facilities where all power and energy requirements are supplied from the grid)

For CPA type 2-B, applicable criteria are 1 to 13 of CPA1-A, plus the 3 following additional conditions:

25. *The technologies to be applied in the CPA must correspond to Technology 2, described in Part I Section A.6. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies.*
26. *The CPA must be designed to recover associated gas that, after compression and phase separation, will be:*
    - *Transported to a processing plant where it is processed into hydrocarbon products (e.g. dry gas, LPG and condensates). The dry gas is then transported to a gas pipeline.*

    This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.
27. *Energy required for the operation of field activities shall be supplied from a grid in the baseline and for the project. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 2-C (gas processing facilities where part of the power requirements are supplied from the grid and a portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to supply the balance of the power demand of the baseline and project facilities, as well as all non-power energy demand)

For CPA type 2-C, applicable criteria are 1 to 13 of CPA1-A, plus the 3 following additional conditions:

28. *The technologies to be applied in the CPA must correspond to Technology 2, described in Part I Section A.6. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies.*
29. *The CPA must be designed to recover associated gas that, after compression and phase separation, will be:*
    - *Partly consumed on-site to meet energy demands; and*
    - *Transported to a processing plant where it is processed into hydrocarbon products (e.g. dry gas, LPG and condensates). The dry gas is then transported to a gas pipeline.*

    This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.
30. *Energy required for the operation of field activities shall be supplied via onsite generation and from a grid in the baseline and for the project. Captive power production is not allowed. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 3-A (gas processing and compression facilities without access to the grid, where power and other energy requirements of the project activity are supplied from onsite fossil-fuelled energy-generating facilities. A portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to meet onsite energy requirements)

For CPA type 3-A, applicable criteria are 1 to 13 of CPA1-A, plus the 3 following additional conditions:

31. *The technologies to be applied in the CPA must correspond to Technology 3, described in Part I Section A.6. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies.*
32. *The CPA must be designed to recover associated gas that, after compression and phase separation will be:*
    - *Partly consumed on-site to meet energy demands; and*
    - *Transported to a processing plant where it is processed into hydrocarbon products (e.g. dry gas, LPG and condensates). The dry gas is then compressed to CNG, transported, and then decompressed before injection into a gas pipeline.*

    This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.
33. *Energy required for the operation of field activities shall be supplied via onsite fossil fuel consumption and/or off-grid captive power generation in the baseline and for the project. Captive power generation shall not be supplied through combined heat and power production. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 3-B (gas processing and compression facilities where all power and energy requirements are supplied from the grid)

For CPA type 3-B, applicable criteria are 1 to 13 of CPA1-A, plus the 3 following additional conditions:

34. *The technologies to be applied in the CPA must correspond to Technology 3, described in Part I Section A.6. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies.*
35. *The CPA must be designed to recover associated gas that, after compression and phase separation, will be:*
    - *Transported to a processing plant where it is processed into hydrocarbon products (e.g. dry gas, LPG and condensates). The dry gas is then compressed to CNG, transported, and then decompressed before injection into a gas pipeline.*

This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.

36. *Energy required for the operation of field activities shall be supplied from a grid in the baseline and for the project. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

CPA type 3-C (gas processing and compression facilities where part of the power requirements are supplied from the grid and a portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to supply the balance of the power demand of the baseline and project facilities, as well as all non-power energy demand)

For CPA type 3-C, applicable criteria are 1 to 13 of CPA1-A, plus the 3 following additional conditions:

37. *The technologies to be applied in the CPA must correspond to Technology 3, described in Part I Section A.6. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies.*
38. *The CPA must be designed to recover associated gas that, after compression and phase separation, will be:*
    - *Partly consumed on-site to meet energy demands; and*
    - *Transported to a processing plant where it is processed into hydrocarbon products (e.g. dry gas, LPG and condensates). The dry gas is then compressed to CNG, transported, and then decompressed before injection into a gas pipeline.*

    This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.
39. *Energy required for the operation of field activities shall be supplied via onsite generation and from a grid in the baseline and for the project. Captive power production is not allowed. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.*

	Question	**Validation findings (including justification and substantiation of information, data and evidence)**	**Draft OK/ CAR/CL**	**Final OK/ Not OK**
7.1.1	Do the eligibility criteria include the geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA (for example, an emission factor for electricity generation is dependent on the boundaries of regional or state or sub-regional grids)? Are the relevant criteria verifiable and sufficiently objective?	Included in condition number 1 of each CPA type – Part I, B.2 of the PoA-DD. The CPA must be within the geographical boundary of the host country. Geographic coordinates for the CPA shall be provided as evidence – this is considered verifiable and sufficiently objective.	OK	OK
7.1.2	Do the criteria include conditions that avoid double counting of emission reductions, like unique identifications of product and end-user locations (e.g. programme logo)? Are the relevant criteria verifiable and sufficiently objective?	Included in condition number 2. The criteria stipulate that the CPA is not included in another PoA or exists as a stand-alone project submission under the CDM. This should be demonstrated by comparing the geographic coordinates and CPA owners of the CPA with other CDM project submissions. This is considered verifiable and sufficiently objective.	OK	OK
7.1.3	Do the criteria include the specifications of technology/measure including the level and type of service, and performance specifications, including compliance with testing/certifications? Are the relevant criteria verifiable and	Generic reference is made in condition number 4 and 5. The criteria require that the technologies to be applied in the CPA correspond to one of the CPA-types described in Part I Section A.6 of the PoA-DD. The criteria also require that each CPA utilises new equipment. However specific criteria for each type of CPA are not included, and the PoA-DD does not describe how compliance with the criteria will be tested in an objective and verifiable way. Please see CL04. **CL04 is closed**: The revised version of the PoA-DD incorporated 3 more generic CPA types. Section A6 provides a clear description of the 3 types of	~~CL04~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	sufficiently objective?	measures/technologies as well as configurations regarding these and the type of energy (thermal or electrical) used during the CPA implementation. The CME clearly described the eligibility criteria under the 9 possible CPA types under the PoA in section B.2, Part I and B.5 Part II. ERM CVS arrived to the following conclusions. • Specific criteria for each type of generic CPA have been added and adequately addressed in the PoA-DD according to the CPA description in section A.6 • Provisions in order to ensure compliance with the applicability conditions have been included and found to be objective • A clear definition of the documentation required to evaluate the inclusion of a CPA has been provided as referenced above An eligibility criterion was also included to ensure that the CPA description of the technology/measure to be applied shall include specifications including the level and type of service provided. This shall be demonstrated through preparatory project studies or documents such as pre-feasibility studies. ERM CVS has confirmed that in Trinidad, there are no specific testing/certification requirements for the technologies employed in the CPA types eligible for inclusion in this PoA, but that the Ministry of Energy and Energy Affairs will approve facilities that are "fit-for-purpose" after construction and commissioning, based on inspection certificates, reports, and a visual inspection by the MEEA /21/.		
7.1.4	Do the criteria include conditions to check the start date of the CPA through documentary evidence? Are the relevant criteria verifiable and sufficiently objective?	No provisions have been included in order to check that the start date of the CPA doesn't start before the start date of the PoA. Please see CL05. **CL05 is closed**: ERM CVS confirms that the updated version of the PoA-DD included the applicability condition Nº3 in Part I Section B.2, providing a clear definition on the possible start dates of CPAs aiming at being included as part of the PoA.	~~CL05~~	OK
7.1.5	Do the eligibility criteria include conditions that ensure compliance with applicability and other requirements of single or multiple methodology/ies applied by CPAs? Are the relevant criteria verifiable and sufficiently objective?	The relevant condition in the GSP version of the PoA-DD was vague. The eligibility criterion did not clearly state conditions that ensure compliance with each of the applicability and other requirements of the methodology applied by each type of CPA. Please see CL06. The latest version of the PoA-DD incorporated eligibility criteria Nº 8 which specifically sates that the CPA shall comply with the methodology and associated Tools provisions. These are provided in detail in section B.2 of the generic CPA-DDs. CL06 was closed. In addition to the applicability conditions of the methodology, AM0009 also specifies that "when defining eligibility criteria for CPA inclusion for a distinct type of CPAs, the CME shall consider relevant technical and economic parameters, such as: (a) Ranges of overall projected production of associated gas and/or gas-lift gas; (b) Ranges of projected quantity of gas recovered, gas flared, vented, consumed on-site, processed in a gas processing plant and/or compressed into a pipeline; (c) Ranges of price for the delivery of recovered gas; (d) Ranges of net calorific value of the recovered gas;	~~CL06~~ ~~CL 18~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		(e) Ranges of capital expenditure for gas infrastructure needed in the relevant scenario, such as gas recovery facilities, pipelines, and gas processing plant (if applicable) etc.; (f) Ranges of operational expenditure; (g) Ranges of 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. The eligibility criteria related to costs, revenues and investment climate shall be updated every two years in order to correctly reflect the technical and market circumstances of a CPA implementation." Please see CL 18 CL 18 was addressed by including relevant guidance in the PoA-DD related to the investment analysis, which will be used to assess additionality of each CPA (and hence compliance with the eligibility criteria). A very short summary of the requirements was included in the eligibility criterion, and the detail was provided in section B.1 and step 3 in section B.4 of the PoA-DD. Please refer to appendix B for further details of how CL 18 was addressed. The latest version of the PoA-DD incorporated eligibility criteria Nº 10, applicable to all CPA types (1-A, 1-B, 1-C, 2-A, 2-B, 2-C, 3-A, 3-B and 3-C), which specifically sates that the CPA must meet the PoA requirements pertaining to the demonstration of additionality. Pre-tax benchmark analysis is required, applying the benchmark set at the PoA level. The minimum relevant technical and economic parameters and approaches provided in the detailed framework in Part I Section B.1 of the PoA-DD must be considered. The investment analysis must include a sensitivity analysis of key parameters, including the volume of gas recovered, volume delivered, CAPEX, OPEX, and gas price. The investment analysis shall be checked through an assessment of the CPA-DD based on the framework for demonstrating additionality established in Part I Section B.1 of the PoA-DD. The criterion related to additionality is considered to be sufficiently verifiable and objective, taking into account the detailed guidance provided in the PoA-DD and the fact that the relevant EB rules and guidelines (e.g. the additionality tool and the Guidelines on the assessment of investment analysis) are clearly referenced and required to be followed.		
7.1.6	Do the eligibility criteria include conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality (please refer to the latest approved version of the *Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities*); Are the relevant criteria verifiable and sufficiently objective?	The criteria in the GSP PoA-DD were not clear or complete. The criteria only made reference to the Tool for the Demonstration and Assessment of additionally without considering any criteria that each type of CPA shall meet. Please see CL07. **CL07 is closed**: The revised version of the PoA-DD incorporated in section B.1 and Step 3 of section B.4., specifications regarding how to carry out the investment analysis. In addition, specifications applying to a specific CPA and the host country, Trinidad and Tobago, regarding the investment analysis involved parameters are provided in section B.1 of Part I.	~~CL07~~	OK
7.1.7	Do the eligibility criteria include, if applicable, any PoA-specific requirements stipulated by the CMEs including any conditions related to undertaking local stakeholder consultations and environmental impact	The eligibility criteria include the requirement that each CPA complies with CDM requirements to hold a local stakeholder consultation and complies with host-country regulations regarding the undertaking of an environmental impact assessment. This is considered sufficiently objective and verifiable, since the CDM requirements for stakeholder consultation are clearly stated in the CDM modalities and procedures, project cycle procedure and project standard. Host country requirements for environmental impact may change depending on the time when the CPA is developed, and therefore is it considered reasonable not to	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	analysis (See also paragraph 6 (m) of Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA). Are the relevant criteria verifiable and sufficiently objective?	include further detail here.		
7.1.8	Do the criteria include, where applicable, the target group (e.g. domestic/ commercial/ industrial, rural/ urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation)? (This is to re-test the validity of assumptions made at the PoA level. For example, in a lighting efficiency application, lighting usage hours of 3.5 hours per day would be valid if the target group is residences/households. Usage hours would be different in commercial applications and vice versa), Are the relevant criteria verifiable and sufficiently objective?	Not applicable given the type of PoA.	OK	OK
7.1.9	Do the criteria include, where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/ standard from the Board pertaining to sampling and surveys? Are the relevant criteria verifiable and sufficiently objective?	Not applicable to the type of PoA since each specific CPA will monitor each parameter and report to the CME as described in Part I – C of the PoA-DD.	OK	OK
7.1.10	Do the criteria include, where applicable, conditions that ensure that the CPA in aggregate meets the small-scale or micro-scale threshold criteria (please refer to the latest approved version of the Guidelines for demonstrating additionality of microscale project activities and the latest approved version of the General Guidelines to SSC CDM methodologies) and remain within those thresholds throughout the crediting period of the CPA? Are the relevant criteria verifiable and sufficiently objective?	Not applicable since each type of CPA under the PoA will be developed under a regular scale methodology.	OK	OK
7.1.11	Do the criteria include, where applicable, the requirements for the debundling check, in	Not applicable since each type of CPA under the PoA will be developed under a	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	case CPAs belong to small-scale (SSC) or microscale project categories (please refer to the latest approved version of the Guidelines on assessment of debundling for SSC project activities)? Are the relevant criteria verifiable and sufficiently objective?	regular scale methodology.		
7.1.12	Do the criteria include conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance? Are the relevant criteria verifiable and sufficiently objective?	There is no description of conditions or procedures to be applied at the CPA level in order to check and confirm that funding from Annex I parties, if any, will not result in a diversion of official development assistance. Please see CL08 **CL08 is closed**: Eligibility criteria Nº 13 of the revised version of the PoA-DD (Part I, section B.2) incorporated specifications on how ensure the avoidance of potential ODA diversion from Annex I parties in the implementation of CPAs under the PoA.	~~CL08~~	OK
7.1.13	Does the CME have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA?	Based on interviews with the CME representatives as well as previous experience, and ERM CVS' host country experience, it can be confirmed that the CME has the competency to check the each CPA and ensure that all requirements as per the PoA-DD are met before inclusion in the registered PoA.	OK	OK
7.1.14	Is the set of eligibility criteria sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA?	TBC based on PP responses to section 7 CLs. Upon closure of CLs related to section 7 of this report, ERM CVS can confirm that the set of eligibility criteria covers each generic CPA type, and, it is objective and comprehensive to permit the assessment of the inclusion of CPAs under the PoA.	~~TBC~~	OK

Conclusion:

ERM CVS can confirm that the CME has developed eligibility criteria for inclusion of a CPA under the PoA and has included these criteria in the PoA design document and demonstrated their usability to assess the inclusion of CPAs. The POA-DD provides a detailed description of the eligibility criteria for inclusion of a project activity as a CPA under the PoA, which includes criteria for demonstration of additionality of the CPA, and the type and/or extent of information (e.g. criteria, indicators, variables, parameters, documentation or measurements) that shall be provided by each CPA in order to ensure its eligibility. The eligibility criteria are verifiable, and are sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA. ERM CVS has assessed the specified eligibility criteria and can conclude that the criteria are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA.

8 Validation findings – Baseline and Monitoring Methodology

ERM CVS has evaluated the baseline and monitoring methodology selected by the PPs to confirm its applicability and whether or not it has been appropriately applied in the PoA-DD.

8.1 Validity of selected methodology and methodological tools

As per VVS section L.1, ERM CVS validated that an approved and currently valid baseline and monitoring methodology (and associated methodological tools) have been applied for this proposed CDM PoA.

Baseline methodology applied	AM0009_version 06.0.0 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented."
Methodological tools applied as required by the methodology	Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion (version 2) Tool to calculate baseline, project and/or leakage emissions from electricity consumption (version 1) Tool for the demonstration and assessment of additionality (6.0.0) Tool to calculate the emission factor for an electricity system, Version 02.2.1 Assessment of the validity of the original/current baseline and to update of the baseline at the renewal of the crediting period (3.0.1)
In cases where multiple technologies/measures or multiple methodologies are being applied, list all the combinations of technologies/measures and methodologies that will be used in the PoA	No combination of methodologies is applied. There are 9 CPA types in total, differentiated by the energy supply to the baseline and project (A, B or C – see below), and by how the gas is treated in the project activity (1, 2 or 3 – see below): Type 1: Gas compression facilities. A Gas Compression Facility (GCF) involves pre-treatment of the captured gas, including cleaning, and compression to pipeline pressures. Type 2: Gas Processing Facilities. A Gas Processing Facility (GPF) involves pre-treatment of the captured gas – including cleaning, processing and compression of the dry gas to pipeline gas pressure – before injection into the gas pipeline to the offtaker. In this option, after some initial cleaning the recovered associated gas is processed and separated into hydrocarbon products (LPG, Condensates and Dry Gas). Type 3: Gas Processing and Compression Facilities. This technology/measure is similar to Technology 2, with the exception that some or all of the dry gas produced by the GPF is compressed to Compressed Natural Gas (CNG), which is then transported by trucks/barges to a compression facility where it is decompressed before injection into a gas pipeline. As in Technology 2, in a combined Gas Processing and Compression Facility (GPCF), captured gas is pre-treated; it is cleaned, compressed and processed to separate it into hydrocarbon products (LPG, condensates and dry gas) before the dry gas is compressed to CNG. Each type is further divided into: A. No access to a national or regional grid. Power and other energy requirements supplied from onsite fossil-fuelled energy-generating facilities. A portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to meet onsite energy requirements in the project facilities B. Access to an existing national or regional grid. Power and other energy requirements supplied from the grid. No onsite energy generation is utilized in the project facilities. C. Access to an existing national or regional grid. Part of the power requirements of the project activity are supplied from the grid. A portion of the recovered associated gas, and/or fossil fuel supplied to the project from other sources, is utilized to supply the balance of the

	power demand of the project facilities, as well as all non-power energy demand. Therefore there are 9 resulting CPA types: 1A, 1B, 1C 2A, 2B, 2C 3A, 3B, 3C

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.1.1	Is the number, title and version of the approved methodology clearly and correctly stated in the PoA-DD? Is the methodology within their period of validity?	ERM CVS has determined that the methodology is correctly quoted and applied by comparing with the actual text of the applicable version of the methodology available on the UNFCCC CDM website. The methodology is within its period of validity.	OK	OK
	Are all the required tools applied and fully referenced in the PoA-DD and generic CPA-DD? Are the version numbers applicable at the time of validation?	ERM CVS has determined that the methodological tools are correctly quoted and applied by comparing with the actual text of the applicable version of the tools available on the UNFCCC CDM website. The version numbers of the applied tools have not been provided in the GSP version of the PoA-DD. Please see CL09 **CL09 is closed**: The revised version of the PoA-DD incorporated the version numbers to the following applied tools: **Part II. A, Section B.1** • Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (version 2) • Tool to calculate baseline, project and/or leakage emissions from electricity consumption (version 1) • Tool for the demonstration and assessment of additionality (version 6.0.0) • Assessment of the validity of the original/current baseline and to update of the baseline at the renewal of the crediting period (version 3.0.1) **Part II. B, Section B.6.1** • Tool to calculate the emission factor for an electricity system, Version 02.2.1 The above Tools version numbers have been checked to be consistent and active according to the UNFCCC website at the time of validation.	~~CL09~~	OK
	If applicable, has any specific guidance provided by the CDM EB relating to the applied methodology been considered?	Yes: • "Guidance on the assessment of investment analysis" • "Guidelines on Common Practice"	OK	OK

Conclusion

The applied methodology(ies) and associated methodological tools have been correctly described and are approved by the CDM Executive Board. All versions are currently valid.

8.2 Applicability of the selected methodology to the typical CPA

As per VVS section L.2 and EB47 Annex 31, ERM CVS evaluated whether the selected baseline and monitoring methodology applied in the proposed PoA is applicable to the typical CPA described in the PoA-DD. This is also one of the eligibility criteria for inclusion of new CPAs to the PoA. This evaluation was based on a review of the PoA-DD and associated documentation and a visit to the first real case CPA proposed to be included in the PoA. ERM CVS has validated whether the applicability conditions of the methodology and relevant tools are met and whether the PoA is not expected to result in emissions other than those allowed by the methodology.

It must be noted that under the proposed PoA /01/, there are nine typical types of CPA according to the revised version of the PoA-DD.

ERM CVS has assured the compliance of the typical CPAs with each of the applicability conditions of the selected methodology and tools (Applicability Criteria):

	Applicability Conditions in methodology and/or tools	**Discussed in PoA-DD** (yes/no)	**Applicable** (Yes/No, or state that this condition is not relevant for the PoA)	**Validation findings** (including justification and substantiation of information, data and evidence).	**Draft** OK/ CAR/CL	**Final** OK/ Not OK
8.2.1	• Under the project activity the recovered gas, after the pre-treatment (compression and phase separation) in movable or stationary equipment, is: A) Consumed on-site to meet energy demands; and/or B) Transported to a gas pipeline without prior processing; and/or C) 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;	Yes	Yes	The PoA-DD /01/ has not evaluated each applicability condition of the baseline and monitoring methodology /11/ according to each type of CPA as described in reference document. Please see CL10 **CL10 is closed**: The revised version of the PoA-DD incorporated 3 additional types of generic CPA, totalizing 9 generic CPA types. The following types of generic CPAs have been defined in line with the provisions of the applicable methodology: A), B) and C) for the different CPA energy consumption sources (thermal, electrical or a combination of both) giving place to the 9 potential CPA types have been discussed as part of the Eligibility criteria for inclusion of a CPA in the PoA of the revised version of the PoA-DD.	~~CL10~~	OK
	• 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;	Yes	Yes	See CL10 **CL10 is closed**: Discussed under the eligibility criteria for inclusion of CPAs (Part I, B.2) and specific provisions for the treatment of the applicable methodology provisions given in Part II A, section B.2. of the revised version of the PoA-DD.	~~CL10~~	OK
	• 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;	Yes	Yes	See CL10 **CL10 is closed**: Discussed under the eligibility criteria for inclusion of CPAs (Part I, B.2) and specific provisions for the treatment of the	~~CL10~~	OK

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the PoA)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
				applicable methodology provisions given in Part II A, section B.2 of the revised version of the PoA-DD.		
	• 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.	Yes	Yes	See CL10 **CL10 is closed**: Discussed under the eligibility criteria for inclusion of CPAs (Part I, B.2) and specific provisions for the treatment of the applicable methodology provisions given in Part II A, section B.2. of the revised version of the PoA-DD.	~~CL10~~	OK
	The methodology 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 gas and/or gas-lift gas to meet on-site energy demands and 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 01)	Yes	Yes	The revised version of the PoA-DD incorporated Part II (A, B and C according to each possible type of CPA under the PoA). Section B.2 of Part II of the PoA-DD included a specific paragraph making reference to this additional applicability requirement included in the provisions of the applicable methodology.	~~CL10~~	OK

Conclusion

The applied methodology and associated tools are fully applicable to the typical CPA and is correctly applied in the PoA-DD. There no greenhouse gas emissions sources were identified within the proposed typical CPA boundary as a result of the implementation of the proposed CPA which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

8.3 CPA Boundary

As per VVS section L.5, EB47 Annex 31 and EB63 Annex 3, ERM CVS reviewed the description of the project boundary in the PoA-DD, including the sources and gases included in the boundary of the proposed typical CPA for the purpose of calculating project and baseline emissions for the typical CPA.

8.3.1 Emission sources

The emissions sources included in or excluded from the typical CPA boundary, as set out in the applied methodology are as follows:

Given that the type of GHGs are the same for each CPA type, the sources and GHGs included in the generic CPA boundary is validated in the following table which applies to all the CPA types.

	Source	Gas	Included in CPA-DD?	Is inclusion / exclusion justified in the CPA-DD?	How has this been validated?
Baseline emissions	Combustion of fossil fuels at end-users that are produced from non-associated gas or other fossil sources	CO_2	Yes. Applies to all CPA types	OK	ERM CVS carried out a cross-check between the provisions of the methodology, the PoA DD/01/, CPA-DD/12/ and the project description in the Front End Engineering Design (FEED) which included the proposed project activity description, HYSIS simulations and resulting process flow diagrams (PFDs) /09/ /10/.
Project emissions	Energy use for the recovery, pre-treatment, transportation, and if applicable, compression/de-compression, transportation of the recovered gas	CO_2	Yes. Applies to all CPA types	OK	ERM CVS carried out a cross-check between the provisions of the methodology, the PoA DD/01/, CPA-DD/12/ and the project description in the Front End Engineering Design (FEED) which included the proposed project activity description, HYSIS simulations and resulting process flow diagrams (PFDs) /09/ /10/.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.3.1 (a)	Has the PoA-DD justified the inclusion/exclusion of all potential sources of GHG emissions as set out in the applied baseline methodology Is this information also stated consistently in the generic CPA-DD?	ERM CVS confirmed that the sources of GHG emission set out in the applied methodology were included in the CPA boundary and, where the methodology allows the CME/CPA operator to choose whether a source or gas is to be included within the CPA boundary, this has been clearly justified in the CPA-DD /12/. The validation was based on the description and information provided in the FSR for the first real case CPA /09/ /10/ as well as on site visits to the 5 oil fields within CPA1 boundaries and interviews with the CME and review of the applied methodology.	OK	OK
8.3.1 (b)	Does the generic CPA present a flow diagram (one for each type of generic CPA), physically delineating each generic CPA? Does the flow diagram include all the equipment, systems and flows of mass and energy, GHG sources and monitoring parameters?	The PoA-DD/01/ provided generic diagrams but did not provide a specific flow diagram for each type of CPA. Diagrams were not in accordance with the guidelines for completing the PoA-DD (no references to equipment, mass/flow energy, emission sources as well monitoring equipment). Please see CL11 The revised version of the PoA-DD incorporated specific diagrams for each type of CPA type including expected flows of mass and energy, monitoring point location for recovered AG and energy consumption as well as an indication of the emission sources. CL 11 was closed.	~~CL11~~	OK

Conclusion

The identified boundary and the selected sources and gases included in the final PoA-DD and generic CPA-DD are appropriately described and justified in accordance with the applied methodology. The information is correctly described in section E.3 of the PoA-DD and section B.4 of the generic CPA-DD.

8.3.2 Emission sources not addressed by the methodology

ERM CVS evaluated whether there are any emission sources that will be affected by the typical CPA and are not addressed by the applied methodology.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.3.2	Were any emission sources identified that will be affected by the typical CPA and are not addressed by the selected approved methodology? If so, was clarification of, revision to or deviation from the methodology approved in accordance with required procedures.	All the emission sources affected by a potential CPA, as per the nine types of CPA described, had been considered at the PoA level. This was validated based on the applicable methodology and the description of each type of CPA in the PoA-DD/01/.	OK	OK

8.4 Baseline identification

As per VVS section L.6, ERM CVS reviewed the Generic CPA-DD to assess whether it correctly identifies the baseline for (each type of) proposed CPA, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CPAs. The 'Guidelines for completing the Programme Design Document form for CDM Programmes of Activities' (Version 02.0, EB 67 Annex 28) require that the generic CPA DD should describe how the baseline scenario is identified, in accordance with the methodology, for each (type of) generic CPA. Where the procedure in the selected methodology involves several steps, the generic CPA DD shall describe how each step is applied and transparently document the outcome of each step. It shall explain and justify key assumptions and rationales and provide and explain all data used to establish the baseline scenario (variables, parameters, data sources, etc.) and all relevant documentation and/or references.

ERM CVS evaluated whether any procedure contained in the methodology to identify the most reasonable baseline scenario has been correctly applied. The selected methodology requires use of the "Tool for the demonstration and assessment of additionality" to establish the baseline scenario, therefore ERM CVS consulted the methodology on the application of the tool and evaluated whether the guidance in the methodology and tool was applied properly. ERM CVS checked each step in the procedure described in the PDD against the requirements of the methodology and tool.

The baseline identification has been validated as follows:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.4.1	Does the PoA-DD identify the baseline for a typical CPA, a scenario that represents the anthropogenic emissions by sources of GHG that would occur in the absence of the typical CPA?	The PoA-DD describes a step by step procedure to identify the baseline scenario, as required by the methodology. The applicable baseline for which the methodology is only applicable for each type of CPA is also provided in Part II-A, section B.2 of the PoA-DD, as follows: • *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 gas and/or gas-lift gas to meet on-site energy demands and 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); and* • *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).* The procedure to identify the baseline will be applied and further validated at CPA level according to the provisions of the PoA-DD, Part II-A, section B.4.	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	Have the procedures/ steps to identify the most reasonable baseline scenario, as required by the methodology(ies) and applicable tools, been documented clearly in the PoA-DD for a typical CPA?	The PoA-DD, Part II, section B.4, clearly describes the procedures to identify the most reasonable baseline scenarios in accordance to the applicable methodology provisions as well as for the CPA eligibility criteria in section B.2 in part I of the PoA-DD.	OK	OK
	Are all feasible and credible alternatives identified including but not limited to all the potential scenarios listed in the methodology? Does the list of alternatives include the CPA undertaken without being registered as a CDM project?	All reasonable alternatives have been considered at the PoA level in accordance with the applied methodology. Validation has been carried out based on ERMCVS visual inspection and visit to CPA 1 oil field facilities and interviews with the CME/CPA1 operator (at both the field operation and management levels). The list of alternatives does include the CPA undertaken without being registered as a CDM project.	OK	OK
	Are realistic different configurations or combinations of alternatives that may be able to provide similar outputs and services considered?	The PoA-DD describes a step by step procedure for identifying the baseline scenario, which includes consideration of plausible alternative baseline scenarios for the associated gas and/or gas-lift gas from the project oil wells, plausible alternative baseline scenarios for oil and gas infrastructure, and plausible alternative baseline scenarios for the use of gas-lift. The PoA-DD also requires that realistic combinations of these three components should be identified and considered as possible alternative scenarios (at the CPA level), and further requires that the identified combinations should be transparently described and be illustrated in schematic diagrams. Given the nature of the project (widespread oil wells and gathering stations), the alternative combinations as described at the PoA level are found to be reasonable.	OK	OK
	Are all considered alternatives assessed for consistency with (enforced) mandatory laws and regulations?	Section B.4., Part II of the PoA-DD /01/ and revised version of the PoA-DD, step 2 makes reference to the legal aspects that should be evaluated at the CPA level.	OK	OK
	(a) Have all applicable CDM requirements been taken into account in the identification of the baseline scenario? (b) Have all relevant national and/or sectoral policies and circumstances been taken into account, such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector? Are the relevant national and/or sectoral policies and circumstances identified and correctly considered in the PDD?	(a) All applicable CDM requirements have been taken into account in the procedure for the identification of the baseline scenario, which has been carried out in accordance with the methodology and the tool for the demonstration and assessment of additionality /13/. The actual baseline scenario for each specific CPA will be evaluated at the CPA level. (b) All relevant national and/or sectoral policies and circumstances have been taken into account. The identified baseline complies with all relevant national/sectoral policies and draft rules – ERM CVS has reviewed /02//03//04//05//06//07//08/ - please see section 6.4.2(a) above for further details. The relevant regulations are listed in section A.2. of the PoA-DD /01/. In addition, ERM CVS interviewed the representatives from the Ministry of Energy and Energy Affairs /IV10/. However, since the baseline will ultimately be defined on a CPA level, the assessment of compliance with relevant national/sectoral policies/regulations will be evaluated at the CPA level.	OK	OK

All the alternative scenarios included in the applicable methodology have been considered at the PoA level.

Conclusion

Based on the review of documents and interviews with the CME, ERM CVS confirms that the procedure for identifying the baseline scenario is clearly stated in the PoA-DD, is in line with the requirements of the methodology, and can provide for an objective identification of the baseline at the CPA level.

8.5 Algorithms and/or formulae used to determine emission reductions

As per VVS section L.7, ERM CVS has evaluated whether 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 methodology, for each type of CPA.

ERM CVS conducted validation activities to determine whether the equations and parameters in the PoA-DD have been correctly applied by comparing them to those in the selected approved methodology. Where the methodology provides for selection between different options for equations or parameters, ERM CVS confirmed that adequate justification has been provided (based on the choice of the baseline scenario, context of the proposed generic CPA and other evidence provided) and that the correct equations and parameters have been used, in accordance with the methodology selected.

8.5.1 Ex Ante Data and Parameters

Each parameter required by the methodology and tools for this project type is listed and validated in detail as follows:

Parameter required as per methodology / tools	**Description of the parameter (as per methodology)**	**Is the parameter included in the PoA-DD?**	**Title and description in the PoA-DD line with the Methodology?**	**Data unit correctly expressed in PoA-DD?**	**Value in PoA-DD correct and provides for conservative estimate of Emission Reductions?** **How was this validated?**	**Measurement method correctly described in the PoA-DD (if applicable)**
$EF_{CO2,Methane}$	CO_2 emission factor for methane	Yes	Yes	Yes	The value applied in the PoA-DD/01/ is not consistent with the value provided by the applicable methodology. See CAR03 **CAR03 is closed**: The revised version of the PoA-DD included this parameter in accordance to the provisions of the applicable methodology.	NA
$\mathbf{EF_{CO2,i,y;}}$	CO_2 emission factor of fossil fuel type *i* in year *y* (tCO2/GJ)	Yes	Yes	Yes	The value applied in the calculation of the GEF corresponds to the default value, not the lower one at 95% confident interval. However, this value is considered to provide a conservative result given that the GEF is only applied to the calculation of project and/or leakage emissions.	NA

Parameter required as per methodology / tools	Description of the parameter (as per methodology)	Is the parameter included in the PoA-DD?	Title and description in the PoA-DD line with the Methodology?	Data unit correctly expressed in PoA-DD?	Value in PoA-DD correct and provides for conservative estimate of Emission Reductions? How was this validated?	Measurement method correctly described in the PoA-DD (if applicable)
$EF_{CO2,m,i,y}$	CO2 emission factor of fossil fuel type i used in power unit m in year y	Yes	Yes	Yes	The value applied in the calculation of the GEF corresponds to the default value, not the lower one at 95% confident interval. However, this value is considered to provide a conservative result given that the GEF is only applied to the calculation of project and/or leakage emissions.	NA
$FC_{i,y}$	Amount of fossil fuel type *i* consumed in the project electricity system in year *y*	Yes	Yes	Yes	Not applicable at PoA level since as explained in the revised version of the PoA-DD, the Trinidad & Tobago power suppliers directly in energy units.	NA
$NCV_{i,y}$	Net calorific value (energy content) of fossil fuel type *i* in year *y*	Yes	Yes	Yes	Not applicable at PoA level since as explained in the revised version of the PoA-DD, the Trinidad & Tobago power suppliers directly in energy units.	NA
$EF_{grid,CM}$	Combined margin emission factor	Yes	CO_2 emission factors for electricity displaced from the Trinidad grid (tCO2/MWh)	*Yes*	EF calculation spreadsheet /14/ has been revised and found to be consistent with the input data and calculation method provided by the Tool to calculate the emission factor for an electricity system	NA
EGm,y	Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh)	Yes	Annual net electricity generation for power units connected the Trinidad grid (MWh)	Yes	EF calculation spreadsheet /14/ has been revised and found consistent with the input data and calculation method provided by the Tool to calculate the emission factor for an electricity system. An interview with PowerGen representative /IV11/ was held in order to confirm the validity of	NA

Parameter required as per methodology / tools	Description of the parameter (as per methodology)	Is the parameter included in the PoA-DD?	Title and description in the PoA-DD line with the Methodology?	Data unit correctly expressed in PoA-DD?	Value in PoA-DD correct and provides for conservative estimate of Emission Reductions? How was this validated?	Measurement method correctly described in the PoA-DD (if applicable)
					the input values.	
EGy and $EG_{m,y}$	Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost/must-run power plants/units, in year y (MWh)	No		No	Validated against GEF spreadsheet /14/ and interviews with the power generation company personnel during the validation site visit /IV11/.	NA
EF_{EL},m,y	CO2 emission factor of power unit *m* in year *y* (tCO2/MWh)	Yes	Power unit emission factor (tCO2/MWh	Yes	EF calculation spreadsheet /14/ has been revised and found consistent with the input data and calculation method provided by the Tool to calculate the emission factor for an electricity system	NA

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.5.1	Have the parameters required by the methodology / tools been correctly described in the PoA-DD? Where the methodology provides for selection between different options for data and parameters; is the choice of data and parameters justified?	Parameters required for calculating project emissions due to fossil fuel consumption or electricity consumption have not been correctly described at the PoA level. Please see CAR03 The selected option for the grid emission factor calculation method selection has been clearly explained and justified at the PoA level. **CAR03 is closed**: All parameters required by the applicable methodology and tools have been included and correctly described in the revised version of the PoA-DD.	~~CAR03~~	OK
	Have the parameters required by the methodology / tools been correctly described in the generic CPA-DD?	See CAR03. **CAR03 is closed**: Part II A, B and C correctly describes the parameters required by the applicable methodology and tools to each of the generic CPA types.	~~CAR03~~	OK

8.5.2 Equations and calculations used to calculate emission reductions

The following steps are applied in the PoA-DD to determine emission reductions of proposed CPAs, in accordance with the methodology and tools applied:

<u>Baseline emissions</u>

According to the provisions of the methodology, baseline emissions are calculated as follows.

$$BE_y = V_{F,y} \cdot NCV_{RG,F,y} \cdot EF_{CO2,Methane} \quad (1)$$

Where:

BE_y	=	Baseline emissions in year *y*, (tCO_2e)
$V_{F,y}$	=	Volume of total recovered gas measured at point F in Figure 9 in year *y* (Nm³)
$NCV_{RG,F,y}$	=	Average net calorific value of recovered gas at point F in Figure 9 in year *y* (TJ/Nm^3)
$EF_{CO2,Methane}$	=	CO_2 emission factor for methane (tCO_2/TJ)

Baseline emissions are calculated according to the above equation in each CPA type.

Project emissions

The methodology considers project emissions due to the following sources:

$$PE_y = PE_{CO2,fossilfuels,y} + PE_{CO2,elec,y}$$

Where:

$PE_{CO2,\ fossilfuels,y}$	=	CO_2 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 Figure 2 in year y (tCO_2e)
$PE_{CO2,\ elec,\ y}$	=	CO_2 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 Figure 2 in year y, (tCO_2e)

Where $PE_{CO2,\ fossilfuels,y}$ is calculated as per the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion":

$$PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y} \quad (2)$$

Being:

$PE_{FC,j,y}$: CO_2 emissions from fossil fuel combustion in process j during the year y (tCO_2/yr)

$FC_{i,j,y}$: Quantity of fuel type i combusted in process j during the year y (mass or volume unit/yr)

$COEF_{i,y}$: Is the CO_2 emission coefficient of fuel type i in year y (tCO_2/mass or volume unit)

The applicable tool provides two options A) and B) in order to calculate parameter $COEF_{i,y}$.

And where $PE_{elec,\ y}$ is calculated as per the "Tool to calculate the emission factor for an electricity system" based on the combined margin calculation, were the PP selected the simple OM method as follows:

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

Where $TDL_{j,y}$ represents the transmission and distribution losses.

Then, the parameter $EF_{EL,j,y}$ is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year *y* (tCO_2/MWh)
$EF_{grid,OM,y}$	=	Operating margin CO_2 emission factor in year *y* (tCO_2/MWh)
w_{OM}	=	Weighting of operating margin emissions factor (%)
w_{BM}	=	Weighting of build margin emissions factor (%)

$EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ are calculated according to the provisions of the reference tool.

Depending on the type of CPA, the project emissions are calculated as follows:

CPA type under the PoA	Project emissions calculation
1-A	(2)
1-B	(3)
1-C	(2) - (3)
2-A	(2)
2-B	(3)
2-C	(2) - (3)
3-A	(2)
3-B	(3)
3-C	(2) - (3)

Leakage

Leakage emissions shall be calculated according to the same procedures as project emissions, taking into account that leakage emissions would occur after point F.

When leakage emissions are accounted, then equation (2) and/or (3) above should be applied and would only be applicable to CPA types 3-A, 3-B and 3-C.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.5.2	Has the PP correctly applied all relevant calculations as required by the methodology and associated tools? Is it fully explained how the procedures provided in the Methodology and applicable Tools are applied by the proposed PoA? *(i.e. Are the required steps clearly followed?)*	The PoA-DD /01/ lacks a detailed description regarding the specific formulas that shall be applied to each type of CPA in order to calculate project and leakage emissions. The descriptions provided are incomplete and not in accordance to the applicable methodology and tools. Parameter TDL has not been considered for the calculation of project emissions from electricity consumption imported from the grid. Please see CAR04 **CAR04 is closed**: The CME correctly applied all relevant calculations in the revised version of the PoA-DD required to calculate baseline, project and leakage emissions. Parameter TDL has been correctly included in order to calculate project emissions due to electricity consumption in a conservative manner and in line with the applicable tool.	~~CAR04~~	OK
	Where the methodology or tool(s) provides for selection between different options for equations; is every choice of options for calculating project emissions, baseline emissions and leakage offered by the	The PoA-DD/01/ provides a generic explanation on how to calculate project and leakage emissions without making distinction of options for equations that might be applied in each specific case as described in the applicable methodology and Tools. Please see CAR04 **CAR04 is closed**: Procedures provided in the applicable methodology and tools have been comprehensively explained for each type of Generic CPA type in Part	~~CAR04~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	methodology correctly justified in the context of the PoA and baseline scenario?	II A, II B and II C of the document of the revised version of the PoA-DD.		
	Are the formulae required for the determination of project emissions, baseline emissions and leakage correctly presented in a complete and transparent manner, enabling a complete identification of parameters to be used and / or monitored?	Please see CAR04 **CAR04 is closed**: The CME comprehensively explained in the revised version of the PoA-DD how to proceed with the calculation of baseline, project and leakage emissions in each type of the generic CPA types under the proposed PoA.	~~CAR04~~	OK
	If applicable, are detailed calculations provided in a traceable spreadsheet showing relevant information?	The grid emission factor calculated according to the corresponding tool/16/ has been provided in an unprotected and traceable spreadsheet.	OK	OK

Conclusion

The PoA-DD correctly applies the methodology and appropriate tools to provide a framework for calculating the emission reductions of a typical CPA. All assumptions and data used are properly listed, including references and sources where applicable. Calculation of actual baseline, project and leakage emissions will be made only at CPA level.

9 Validation findings – Additionality

As per the VVS sections L.8 to L.13 and the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities', additionality shall be demonstrated by establishing that in the absence of CDM, none of the implemented CPAs would occur.

PoAs that will include one or more microscale projects as CPA shall include eligibility criteria derived from all the relevant requirements of the 'Guidelines for demonstrating additionality of microscale project activities'. PoAs that will include one or more small-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of Attachment A of Appendix B of the Simplified modalities and procedures for small-scale CDM project activities. PoAs that will include one or more large-scale projects as CPA shall include eligibility criteria derived from all the relevant requirements contained in the additionality section of the large-scale methodology (ies).

ERM CVS has validated that the PoA-DD includes adequate eligibility criteria to ensure the additionality of individual CPAs, and ERM CVS has ensured that all additionality guidelines set out in the approved methodology and tools have been included within the CPA eligibility criteria. ERM CVS assessed and verified the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by the PPs to support the demonstration of additionality in order to critically assess the presented evidence, using local knowledge and sectoral and financial expertise.

In undertaking this aspect of the validation, ERM CVS considered tools and documents provided by the CDM Executive Board to demonstrate additionality, as well as specific complementary or alternative requirements included in the approved CDM methodology.

In the sections below, ERM CVS describes all steps taken, and sources of information used, to cross-check the information contained in the PoA-DD on additionality. Where appropriate, we describe how the validation team determined that the documentation assessed is authentic.

9.1 Prior consideration of the CDM

As per the VVS paragraph 194, "The DOE is not required to assess prior consideration of CDM for PoAs, as it is expected that no component of the programme will commence prior to the start date of validation". The "Guidelines for the demonstration and assessment of prior consideration of the CDM" therefore do not apply to PoAs, as it is expected that no component of the programme will commence prior to the start date of validation. Based on the site visit ERM CVS can confirm that to its knowledge there is no component of the programme that commenced prior to the start of validation.

9.2 Starting date of the PoA

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.2.1	Does the PoA-DD state the starting date of the PoA, including a description of how the date was determined? How was this date validated?	The PoA-DD starting date in the GSP-PoA-DD was not correctly defined. Please see CL12 **CL12 is closed**: The revised version of the PoA-DD provides a precise and specific start date having excluded any potential milestone or ambiguous condition. This is in line with the provisions of paragraph 62 of the CDM Project Standard. The starting date of the PoA is 03 August 2012, i.e. the start of the Global Stakeholder Comments Period, which is in line with the latest Glossary of CDM Terms.	~~CL12~~	OK

9.3 Identification of alternatives

The methodology requires the PPs to identify plausible alternative scenarios to identify the baseline. ERM CVS evaluated whether the generic CPA-DD clearly describes the process for identifying credible baseline alternatives in order to determine the most realistic baseline scenario. This is validated in detail in section 8.4 above.

9.4 Assessment of additionality of a CPA

As confirmed in section 7 of the validation report, eligibility criteria include a condition that each CPA needs to demonstrate additionality in line with the methodology requirements. The methodology prescribes a step-wise procedure to identify the baseline and determine additionality, including step 1, identify plausible alternative scenarios, step 2, evaluate legal aspects, step 3, evaluate the economic attractiveness of alternatives, and step 4, common practice analysis. ERM CVS has validated whether compliance with the additionality-related eligibility criteria set out in the PoA design document will ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodology are met.

Validation of how the framework was used in the first real case CPA is described in a separate CPA validation report.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.4	Does the description of assessment of CPA additionality correctly follow the methodology and relevant tool(s) and guidance?	The description of assessment of additionality for a typical CPA correctly follows the steps and requirements of the methodology (step 1, identify plausible alternative scenarios, step 2, evaluate legal aspects, step 3, evaluate the economic attractiveness of alternatives, and step 4, common practice analysis). The description also correctly references the "Tool for the demonstration and assessment of additionality". The methodology specifies that 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'. This is correctly specified in the PoA-DD. The PoA-DD further specifies that for CPAs in the Republic of Trinidad and Tobago, the benchmark to be applied is 10%. This benchmark was established based on the domestic prime interest rate averaged over the past 5 years. This benchmark is set at the PoA level and is therefore validated in detail below.	OK	OK

Investment analysis

9.4.1 Evaluation of Benchmark/Discount rate

The assessment used an external source of Benchmark. To confirm the suitability of the benchmark applied in the investment analysis, ERM CVS has

a) Determined whether the type of benchmark applied is suitable for the type of financial indicator presented;

b) Ensured that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity;

c) Determined whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the PPs involved and determining whether the same benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark.

Details of the validation of the benchmark are provided in the following table:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.4.1 (a)	Is the use of an external benchmark appropriate?	Yes. Given that the project could theoretically be developed by the PP or by an energy service company, the use of an external benchmark is considered appropriate. It is also considered to be more transparent and conservative. According to the 'Guidelines on the assessment of investment analysis', local	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		commercial lending rates are appropriate benchmarks for a project IRR.		
	Is the benchmark or discount rate based on publicly available data sources?	Yes. The benchmark is based on the prime interest rate of Trinidad and Tobago issued by the central bank, over the past 5 years (Data for 2007 to 2012). ERM CVS has confirmed the value against the website of the central bank /18/	OK	OK
	Is the benchmark based on parameters that are standard in the market? (I.A Guideline 13)	Yes. The benchmark is based on the prime interest rate of the central bank, and is therefore standard in the market in the host country.	OK	OK
	Are the assumptions underlying the referenced benchmark or discount rate relevant to the sector?	The benchmark is based on the prime interest rate of the central bank. It is not specific to the sector (oil and gas) although this is considered to be conservative since sector specific risk has not been added to the rate.	OK	OK
	Is an appropriate benchmark or discount rate value chosen that is relevant for the project activity (*i.e. for this investor, country, risk of project, time of investment decision*)?	The benchmark is based on the prime interest rate of the central bank. It is not specific to the type of investor (an oil and gas company) although this is considered to be conservative since sector specific risk has not been added to the rate. The benchmark is specific to the country, and is appropriate for the time of the investment decision considering that the most recent 5 years of data have been used.	OK	OK
	Is the chosen benchmark conservative and in line with other benchmarks or discount rates used in current or previous projects by the same investor? *(including the benchmark or discount rate used in Feasibility Studies or other financial analyses of the project activity)*	The chosen benchmark is considered to be conservative, based on ERM CVS's sectoral and financial knowledge and expertise, given that it is based on the prime interest rate of the country. Commercial lending rates would be higher than the prime interest rate of the central bank. Since Petrotrin has not invested in any similar projects before, information is not available on benchmarks used for similar projects in the past by the same investor, however ERM CVS has confirmed that the benchmark selected is conservative in relation to commercial lending rates, which are an appropriate benchmark for project IRR calculations.	OK	OK
Risk Premiums				
8.3.2 (d)	Are risk premiums applied in the development of the benchmark or discount rate? If so, are they reasonable and justified? How has this been validated?	The prime interest rate is used and no additional risk premiums are applied.	n/a	OK

Framework for investment analysis at PoA level

Given that no projects of this kind have ever been developed in T&T before, reliable data on the normal ranges of costs and revenues, and even ranges of installed capacity etc for such projects are simply not available in the host country. Therefore the values of these parameters cannot be set at PoA level. ERM CVS has confirmed this based on its sectoral and local knowledge.

Due to the non-existence of reliable data, trying to set these parameters at PoA level would not comply with the requirement that eligibility criteria have to be objective and verifiable. In order to ensure the criteria are objective and verifiable, the PoA-DD requires a full investment analysis for each CPA, and provides detailed guidance on how this shall be carried out. The investment analysis is considered an objective and verifiable means of demonstrating additionality, since all the input values can be validated by the DOE against reliable third party references (and if this is not the case, the CPA will not be accepted). Furthermore the calculations can be transparently and traceably presented. The PoA-DD requires strict compliance with the detailed requirements of the additionality tool and investment analysis guidelines from the CDM-EB, which ensure a conservative and accurate result of the analysis, and also ensure it is objective and verifiable (the VVS requirements for validating investment analysis also apply to CPAs using investment analysis).

Furthermore the PoA-DD sets the benchmark at PoA level, provides detailed guidance for carrying out the investment analysis, and provides further guidance on the sensitivity analysis that should be carried out.

The PoA-DD includes a framework for the investment analysis, which ERM CVS has reviewed. The framework will provide for a consistent approach across CPAs, ensure that investment analysis is replicable, and will ensure that it is objective and verifiable in line with the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities'.

The following minimum relevant technical and economic parameters and approaches must be considered in the development of the investment analysis:

- The Investment analysis approach must satisfy the key requirements stipulated in the Annex 5 of UNFCCC EB 62 Report titled "Guidelines on the Assessment of Investment Analysis".

- All data inputs that are not sourced from third parties shall be subjected to a third-party assessment to confirm that they are reasonable.

- Projected production of associated gas:

  i. Must be developed from a clear and transparent projection of crude oil production in the field where the associated gas will be captured;

  ii. A scientifically sound gas to oil ratio (GOR) characterization of the oil field must be provided to estimate associated gas production forecast for the field(s);

  iii. The associated gas projection must be valid within a range of about ±10%;

  iv. The calorific value of the recovered gas and its molar composition must also be scientifically determined and evidences for this determination e.g. laboratory analysis must be presented to the validating DOE. Also the calorific value of the recovered gas should also be within ±10% of internationally acceptable value for the same quality of gas e.g. IPCC;

- Parameters that will be utilized in the investment analysis should at a minimum include:

  i. CAPEX – This must cover all the necessary equipment for the CPA, with the equipment list backed up by a 3rd Party engineering opinion. The value of this parameter that will be used in the investment analysis must be transparently determined within a validity range of ±10%;

  ii. OPEX – The value of this parameter that will be used in the investment analysis must be supported by a 3rd Party view. The value must also be determined within a validity range of ±10%;

  iii. Prices of the products of the CPA – These products include: the recovered gas; condensate; etc. The prices that will be used must be transparently determined and the values used must be supported with documentary evidences.

  iv. Operational Lifetime of the project

  v. The Residual Value of the project

This framework provides further guidance to CPA implementers and to the validating DOE for CPA inclusions to ensure that the analysis is objective and verifiable. The framework is in line with the tool for the demonstration and assessment of additionality, and in fact provides more guidance and extra requirements in addition to the standard provisions of the tool, tailored to the type of technology/project type included in the PoA. Therefore the framework is considered appropriate and sufficient to ensure additionality is properly assessed at CPA level.

The PoA-DD also included a framework for the sensitivity analysis. The analysis should include at the minimum:

- Parameters whose values will affect the estimation of the Additionality decision variables (e.g. Internal return on Investment). The parameters to be included in the sensitivity analysis should include:

  I. The projected volume of associated gas and/or gas-lift gas projected to be recovered by the project

II. The projected volume of gas to be delivered to point F by the project

III. The CAPEX

IV. The OPEX

V. Assumed price for the delivery of recovered gas or final product if recovered gas is processed

The sensitivity analysis should be carried out over a range of not less than ±10% and not more than ±20%;

The range of the sensitivity analysis must be determined individually for each of the sensitivity-analysis parameters.

For CPAs implemented in the Republic of Trinidad and Tobago, the following criteria for carrying out investment analyses of CPAs are established at the PoA level.

- Benchmark analysis shall be applied, using a benchmark of 10%
- Operational lifetime of the project shall be 25 years
- Year for which residual value shall be calculated: 20

Sensitivity analyses shall be carried out for the following parameters and value ranges. Alternative value ranges may be applied to individual parameters if verifiable sources can be provided that justify the alternative.

Variable Sensitivity Range

I. Projected volume of associated gas and/or gas-lift gas projected to be recovered by the project: ±10%

II. Projected volume of gas to be delivered to point F by the project: ±10%

III. Assumed price for the delivery of recovered gas or final product if recovered gas is processed: ±10%

IV. CAPEX if based on front-end engineering estimates: ±20%

V. CAPEX if based on detailed feasibility study: ±10%

VI. OPEX: ±10%

These additional requirements are considered to make the investment analysis more defined, and more objective at CPA level. ERM CVS has confirmed that the framework for the investment analysis will ensure that CPAs demonstrate additionality in an objective and verifiable manner.

Investment analysis conclusion:

The PoA-DD provides a clear framework for investment analysis that is in line with relevant EB tools and guidelines. The framework is sufficient to ensure that the additionality will be demonstrated in an objective and verifiable way. The eligibility criteria of the PoA ensure that all additionality related requirements of the PoA must be followed. The additionality related eligibility criteria are therefore objective and verifiable, and sufficiently robust and detailed. The benchmark is set at PoA level and is confirmed to be appropriate and conservative based on objective evidence. The investment analysis for specific activities, including the exact values for each input parameter and the calculations themselves, will be further evaluated at the level of each CPA.

10 Validation Findings - Operational, management and monitoring plan for the programme of activities

ERM CVS has validated the competencies of the CME in accordance with paragraph 17 of the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (EB 65 Annex 3). According to the requirements, the CMEs shall have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. ERM CVS has validated the management system as developed and implemented by the CME as follows.

10.1 Operation and Management Plan

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
10.1.1	Has the CME demonstrated that there is an operational and management system for the implementation and management of the PoA?	The operational and management system is developed as a separate document, and a summary is provided in the DD and the document, "CPA Process and Management Manual" /13/, which sets out the details of the operational and management system for the implementation and management of the PoA.	OK	OK
10.1.2	Does the operational and management system include clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies?	The CPA Process and Management Manual (Figure 1) /13/ clearly defines the roles and responsibilities of personnel involved in the process of inclusion of CPAs and maintaining the integrity of the monitoring data. As per interviews with the CME team, the role of review of competencies will be the responsibility of the HSE manager in charge of hiring and assigning roles and responsibilities. The documents provided do not clearly state a review of competencies function. Please see CL13 **CL13 is closed**: The revised version of the CPA process and management manual /13/ includes a clear description of how staff competencies will be reviewed. The revised plan includes annual reviews of competency and, provision of training, under the supervision and monitoring of the human resources department.	~~CL13~~	OK
10.1.3	Does the system include records of arrangements for training and capacity development for personnel?	Reportedly, the CME team will provide CDM training to CPA staff and CDM Managers. The technical support team will have the going responsibility as member of the CME team to maintain competencies in the roles assigned to a CPA. Staff have not yet been assigned; therefore, no training records are in place yet. The training description does not specifically address training and capacity development record retention. There is a lack of discussion of the records of arrangements for training and capacity development for personnel within the management system. Please see CL14 **CL14 is closed**: The operation and management plan /13/ now includes provisions for training and capacity development of personnel with technical CDM training provided as required to ensure the necessary competencies. The human resources department will be responsible for retaining records of capacity development reviews and training.	~~CL14~~	OK
10.1.4	Does the system include procedures for technical review of inclusion of CPAs?	The CPA Process and Management Manual /19/ describes that the CME will undertake a detailed technical review of the background data and related studies to obtain the information needed to prepare the CPA-DD for inclusion.	OK	OK
10.1.5	Does the system include a procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA	The management system /19/ includes a procedure to avoid double counting; specifically: "*The CME will review the project to determine whether the project has been officially submitted as a stand-alone CDM project, a CPA in another PoA, or is a de-bundled component of a previous large-scale CDM submission. The CME will check the location, project type and owner of the project with the CME reference*	~~CL15~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	of another PoA)?	*data set.* " The provision for the CME to check the location, project type, and owner of the project with the CME reference data set does not check against the projects/CPAs listed on the CDM website. Please see CL15. **CAR15 is closed**: The CME submitted a revised version of the Operation and Management Plan including provisions for checking whether the specific CPA has previously been registered as a CDM, either on a stand-alone basis of as part of another PoA.		
10.1.6	Does the system include records and documentation control process for each CPA under the PoA?	According to management system procedures /19/, each CPA will maintain its own databases and report to the CME monthly, and backup systems will be in place.	OK	OK
10.1.7	Does the system include measures for continual improvements of the PoA management system?	The CPA Management Plan does not contain a section addressing continuous improvement. Neither does the PoA-DD provide a discussion on the continuous improvement measures that shall be undertaken as part of the management system. Please see CL16. **CL16 is closed**: The revised version of the Operational and Management Plan /13/ incorporated section 11 where the provisions for continuous improvement are set, including root cause analysis and follow-up in order to ensure that repetition of similar undesired situations are avoided.	~~CL16~~	OK

Conclusion

ERM CVS has assessed the operational and management arrangements which have been established by the CME in order to determine that these arrangements are suitable for the PoA being validated. The arrangements are considered to be sufficient to ensure that the CME will have control of all records and information related to the implementation of individual CPAs and will be in a position to ensure each CPA is being operated in accordance with the specific requirements of the programme.

10.2 PoA Sampling Plan

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
10.2	Has the CME chosen to produce a sampling method/procedure for use by DOEs rather than have all CPAs verified? If so is the method statistically sound and suitable for the PoA?	No, the CME has chosen to verify each specific CPA.	NA	OK

Conclusion

Sampling is not applicable since monitoring is to take place for each specific CPA.

11 Validation Findings - Monitoring plan of a Typical CPA

ERM CVS evaluated the monitoring plan for the typical CPA to ensure that it is based on the approved monitoring methodology that has been applied. As per the VVS, ERM CVS applied a two-step process, based on review of the documented procedures, interviews with relevant personnel, project plans and any physical inspection, to assess:

a) *Compliance of the monitoring plan with the approved methodology*::

(i) By means of document review, identify the list of parameters required by the selected approved methodology;

(ii) Confirm that the monitoring plan contains all necessary parameters, that they are clearly described and that the means of monitoring described in the plan complies with the requirements of the methodology.

b) *The Implementation of the monitoring plan*, taking into account:

(i) Whether the monitoring arrangements described in the monitoring plan are feasible within the typical CPA design;

(ii) Whether the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CPAs and PoA can be reported ex post and verified.

11.1 Compliance of the monitoring plan with the approved methodology

ERM CVS validated whether the monitoring plan for a generic CPA in the PoA-DD includes all parameters necessary for monitoring of this type of project in accordance with the approved methodology that has been applied for the typical CPA. ERM CVS checked whether the parameters are clearly described and the means of monitoring described in the plan complies with the requirements of the methodology.

11.1.1 Completeness of monitoring parameters

The monitoring parameters required by the methodology and applicable tools are:

Parameter Name	Parameter Description	Is the parameter appropriately included in the Monitoring Plan? (including justification and substantiation of information, data and evidence)
$V_{F,y}$	Volume of the total recovered gas measured at point *F* in year *y*	This parameter is required by the methodology, and is included in the monitoring plan. The revised version of the PoA-DD described it in accordance with the applicable methodology and tool. This parameter is applicable to CPA type 1-A, 2-A, 3-A, 1-B, 2-B, 3-B, 1-C, 2-C and 3-C.
$NCV_{RG,F,y}$	Average net calorific value of recovered gas at point *F* in year *y*	This parameter is required by the methodology, and is included in the monitoring plan. The revised version of the PoA-DD described it in accordance with the applicable methodology and tool. This parameter is applicable to CPA type 1-A, 2-A, 3-A, 1-B, 2-B, 3-B, 1-C, 2-C and 3-C.
$FC_{i,j,y}$	Quantity of fuel type i combusted in process j during the year y	This parameter is required by the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion", and is included in the monitoring plan. The revised version of the PoA-DD described it in accordance with the applicable methodology and tool. This parameter is applicable to CPA type 1-A, 2-A, 3-A, 1-C, 2-C and 3-C.
$w_{C,i,y}$	Weighted average mass fraction of carbon in fuel type i in year y	This parameter is required by the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", and has not been included in the monitoring plan, see CAR05. This parameter is applicable to CPA type 1-A, 2-A, 3-A, 1-C, 2-C and 3-C. The parameter is only applicable when option A of the "Tool to calculate project or CO2 emissions from fossil fuel combustion" is used. **CAR05 is closed**: The revised version of the PoA-DD includes it and described it in

Parameter Name	Parameter Description	Is the parameter appropriately included in the Monitoring Plan? (including justification and substantiation of information, data and evidence)
		accordance with the applicable methodology an tool.
$\rho_{i,y}$	Weighted average density of fuel type i in year y	This parameter is required by the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", and has not been included in the monitoring plan, see CAR05. This parameter is applicable to CPA type 1-A, 2-A, 3-A, 1-C, 2-C and 3-C. The parameter is only applicable when option A of the "Tool to calculate project or CO2 emissions from fossil fuel combustion" is used. **CAR05 is closed**: The revised version of the PoA-DD includes it and described it in accordance with the applicable methodology an tool.
$NCV_{i,y}$	Weighted average net calorific value of fuel type i in year y	This parameter is required by the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", and has not been included in the monitoring plan, see CAR05. This parameter is applicable to CPA type 1-A, 2-A, 3-A, 1-C, 2-C and 3-C. Applicable where Option B is used for calculating the emission coefficient $COEF_{i,y}$ **CAR05 is closed**: The revised version of the PoA-DD includes it and described it in accordance with the applicable methodology an tool.
$EF_{CO2,i,y}$	Weighted average CO_2 emission factor of fuel type i in year y	This parameter is required by the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", and has not been included in the monitoring plan, see CAR05. This parameter is applicable to CPA type 1-A, 2-A, 3-A, 1-C, 2-C and 3-C. Applicable where Option B is used for calculating the emission coefficient $COEF_{i,y}$ **CAR05 is closed**: The revised version of the PoA-DD includes it and described it in accordance with the applicable methodology an tool.
$TDL_{j,y}$	Average technical transmission and distribution losses for providing electricity to source *j*, *k* or *l* in year *y*	This parameter is required by the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption", and has not been included in the monitoring plan, see CAR05. This parameter is applicable to CPA type 1-B, 2-B, 3-B, 1-C, 2-C and 3-C. **CAR05 is closed**: The revised version of the PoA-DD includes it and described it in accordance with the applicable methodology an tool.
$EC_{PJ,j,y}$	Quantity of electricity consumed by the project electricity consumption source *j* in year *y*	This has parameter has been included in the monitoring plan by the PP in order to monitor the grid electricity consumption of the CPA, as "$E_{elec,y}$". However, it is not described in accordance with the applied "Tool to calculate baseline, project and/or leakage emissions from electricity consumption", see CAR05. This parameter is applicable to CPA type 1-B, 2-B, 3-B, 1-C, 2-C and 3-C. **CAR05 is closed**: The revised version of the PoA-DD described it in accordance with the applicable tool.

NOTE: Given that the monitored parameter $EF_{grid,CM,y}$ is calculated and monitored at the PoA level, it is excluded from the above table referred to typical CPA monitoring.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.1.1	Are all required parameters included in the monitoring plan? Has the PP also included	All the parameters required by the applicable methodology /11/ had been included in the PoA-DD for the monitoring of a typical CPA, however not all parameters included in the corresponding Tools for calculating project and leakage emissions /16/, have been included considering the different options of	~~CAR05~~	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	here data that are determined only once for the crediting period but that will become available only after registration/inclusion of the CPAs in the PoA (e.g. measurements after the implementation of the CPAs in the PoA), as required by the guidelines for completing the PoA-DD?	energy consumption and power generation that might be in place in typical CPAs, as described in the PoA-DD. Please see CAR05 **CAR05 is closed**: ERM CVS confirms that the revised version of the PoA-DD included and described the following parameters in accordance with the applicable methodology and tools as well as with the 9 potential different generic types of CPA under the proposed PoA.		

Conclusion

The monitored parameters included in the monitoring are complete and appropriate for monitoring of the 9 possible generic CPA types under the proposed PoA. In ERM CVS's opinion, the PPs are able to implement the monitoring plan.

11.1.2 Compliance of monitoring

For each parameter, ERM CVS has validated whether it has been addressed in accordance with the baseline and monitoring methodology.

Monitored Parameters	$V_{F,y}$	$NCV_{RG,F,y}$	$FC_{i,j,y}$	$w_{C,i,y}$	$\rho_{i,y}$	$NCV_{i,y}$	$EF_{CO2,i,y}$	**TDL**	$EC_{PJ,J,y}$
Parameter Description correct?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Description in line with methodology?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data unit correctly expressed?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Measurement method correctly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Measurement and recording frequency correctly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Correct reference to standards?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indication of accuracy provided?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
QA/QC procedures described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
QA/QC procedures appropriate?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is the 'purpose of data' described (calculation of baseline emissions, project emissions, or leakage)?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.1.2	Are all required parameters appropriately monitored in accordance with the methodology (including applicable tools)?	As previously addressed in section 11.1.1, there are many parameters from the Tools to calculate project or leakage emissions /15/ and /16/ that have not been considered at the PoA level. The measurement procedure for parameter $FC_{i,j,y}$, referred in the PoA-DD /01/ as "$FF_{j,y}$", is not in accordance with the provisions of the Tool to calculate project emissions from fossil fuel combustion /15/. Monitoring requirements for those parameters that are considered by the Tools to calculate project and leakage emissions, and that have not been considered at the PoA level as stated in section 11.1.1 above, couldn´t be evaluated or validated. Please see CAR05 **CAR05 is closed**: The CME submitted a revised version of the PoA-DD in which all the parameters applicable to the methodology and tools, and each potential generic type of CPA described in the PoA-DD have been included consistently providing an appropriate monitoring approach for each case of CPA under the PoA.	~~CAR05~~	OK

Conclusion

The means of monitoring all relevant monitored parameters for a typical CPA complies with the requirements of the methodology, including applicable tools and are consistent with each type of generic CPA under the PoA

11.2 Implementation of the monitoring plan

ERM CVS evaluated the feasibility and sufficiency of the monitoring plan for (each type of) generic CPA. The key components of the monitoring plan are as follows.

Operational and management structure:

At the PoA level, the organizational structure is defined according to the roles, responsibilities and relations between the CME and the CPA owners as follows.

Task summary name	Specific Task	Responsibility of	Personnel
Monitoring	Monitoring gas supply to offtaker (via gas pipeline)	CPA owner	Data manager
Monitoring	QC/compare monitoring reports	CPA owner	Data manager
Reporting	Monthly reports to CME	CPA owner	Data manager
Reporting	QC year's data	CPA owner	Data management & auditor
Reporting	Prepare yearly summary	CPA owner	Data manager
Reporting	Submit yearly summary to CME	CPA owner	Management
Reporting	QC data from CPA owner	CME	Data manager
Reporting	Prepare report for DOE	CME	Data manager

Task summary name	Specific Task	Responsibility of	Personnel
Reporting	Recruit DOE and submit report	CME	Management
Monitoring	Calibrate meter	CPA owner	Technical officer
Reporting	Feedback on process	CPA owner and CME staff	Data manager
Data Management	Archive files and data	CPA owner and CME staff	Data manager
Data Management	Backup data	CPA owner and CME staff	Data manager

Equipment:

Equipment characteristics and/or specifications have not been defined at the PoA level since there might be different types of CPAs, each of which depending on its own characteristics might require different type of either parameters to be monitored or monitoring equipment.

Quality Assurance and Quality Control (QA/QC) of equipment and data:

Given that specific monitoring plans will be developed on a CPA level, the framework for QA/QC procedures set out in the PoA-DD /01/ is considered sufficient to ensure that emissions reductions can be monitored and reported accurately.

Feasibility of the monitoring plan:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.2	Are the arrangements described in the plan feasible and practical? Please consider: (a) operational and management structure, including responsibilities (b) Plans for maintenance and calibration of equipment (c) Plans for QA/QC of equipment and data (d) Installation of monitoring equipment (whether in place, or planned)	The specific operational and organisational structure will be defined on a CPA level. The framework for data management set out in the PoA-DD is considered appropriate to fulfil the monitoring requirements of the methodology and to ensure that emission reductions can be verified. Even though further details will be provided at CPA level, Appendix 5 of the PoA-DD provides a generic structure that clearly defines tasks, roles and responsibilities. The equipment setup and details of accuracy and calibration will be defined on a CPA level. The framework of the monitoring plan set out in the GSP PoA-DD /01/ was not considered sufficient to fulfil the monitoring requirements of the methodology and to ensure that emission reductions can be verified since the installation of monitoring equipment, whether in place or planned, (monitoring equipment location for each parameter have not been considered for each typical CPA that could be in place). Please see CAR06. The framework in the PoA-DD was revised – please refer to appendix B for details. CAR 06 was closed. Also, the PoA-DD lacks monitoring diagrams developed for each type of CPA according to the different situations that might be in place (e.g. on-site generation by multiple power units, cogeneration, etc.), reflecting the parameters and location of the monitoring equipment. Please see CL17. The revised version of the PoA-DD provides a generic diagram that covers the 9 generic CPA types, including the monitoring variables and metering equipment location. CL 17 was closed. ERM CVS therefore concludes that the framework monitoring plan is feasible and practical, including operational and management structure, plans for maintenance and calibration of equipment, plans for QA/QC of equipment and data, and installation of	~~CAR06~~ ~~CL17~~	OK

		monitoring equipment (whether in place, or planned).		

Conclusion

Based on the validation activities performed, ERM CVS concludes that:

(a) The monitoring plan for a typical CPA is fully in compliance with the requirements of the methodology;

(b) The monitoring arrangements described in the monitoring plan are feasible within the design of a typical CPA;

(c) The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the typical CPA can be reported ex post and verified.

The assessment conducted by ERM CVS is by means of review of the documented procedures, interviews with relevant personnel, and a visit to the site of the first real case CPA.

12 Validation Findings – Sustainable Development, Local Stakeholder Consultation and Environmental Impact

12.1 Sustainable Development

As per VVS section M, ERM CVS evaluated whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM PoA to the sustainable development of the host Party.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.1.1	Does the LOA from the Host Party confirm that the PoA contributes to the sustainable development of that country?	The host country LoA has not been provided. Please refer to CAR01 **CAR01 is closed**: The LoA /20/ issued by the local DNA confirms that the PoA contributes to the sustainable development of the host country.	~~CAR01~~	OK

12.2 Local Stakeholder Consultation

The stakeholder consultation will be conducted on a CPA level. This is appropriately described in the PoA-DD.

12.3 Environmental Impacts

Environmental impacts are assessed on a CPA level. This is appropriately described in the PoA-DD.

12.4 Public funding

ERM CVS also evaluated whether the information relating to public funding in the PoA-DD Annex 2 has been correctly presented.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.4	If the PoA involves public funding from an Annex 1 country, have the annex 1 parties involved provided an affirmation that such funding does not result in a diversion of official development assistance?	ERM CVS carried out interviews with the CME /IV1 – IV4/ on site. ERM CVS found no evidence that any public funding from Annex 1 Parties is being used.	OK	OK
	Is the information provided on public funding (PoA-DD, Annex 2) provided in compliance with the actual situation or planning?	Yes, the PoA-DD /01/ confirms that no public funding from annex 1 countries is used.	OK	OK

Conclusion

Based on interviews and documental evidences cited in this section, ERM CVS can confirm that the proposed PoA is voluntary, would contribute to the sustainable development of the host country, undertakes the CEC approval process and has conducted a documented local stakeholders consultation process.

Appendix A: Documents and Interviewees

A.1 DOCUMENT LIST

Reference number	Date	Document Title and version number (if applicable)
01	03 August 2012 26 December 2012	PoA-DD submitted for GSP (version 1.1) Revised version of the PoA-DD (version 7)
02	Accessed August 2012	http://www.energy.gov.tt/ "Ministry of Energy and Energy Affairs" website
03	June 2010	Republic of Trinidad and Tobago, Air pollution rules (draft)
04	July 2011	Government of the Republic of Trinidad and Tobago: National Climate Change Policy
05	2006	Laws of Trinidad and Tobago: Occupational Safety and Health Act, 2004 (amended 2006)
06	13 March 2000	Republic of Trinidad and Tobago, Act no. 3 of 2000: Environmental Management Act
07	24 October 2001	Republic of Trinidad and Tobago, Water pollution Rules
08	17 January 2007	Republic of Trinidad and Tobago, Water Pollution (amendment) rules
09	26 March 2012	Petrotrin Strategy and Business Development Department Report: Petrotrin Onshore Oil Fields Associated Gas Recovery and Utilization Project ('Front End Engineering Design – FEED'). Executive Summary.
10	26 March 2012	Petrotrin Strategy and Business Development Department Report: Petrotrin Onshore Oil Fields Associated Gas Recovery and Utilization Project ('Front End Engineering Design – FEED'). Appendices.
11		Applied Baseline and Monitoring Methodology AM0009_version 06.0.0 "Recovery and utilization of gas from oil wells that would otherwise be flared or vented."
12	30 July 2012	Petrotrin Oilfield Associated Gas Recovery and Utilization Project – CPA1; Version Nº 1.1
13	Accessed in September 2012	Revised version of the Operational and Management Plan
14	19 July 2012	Trinidad Grid Emission Factor Calculation spreadsheet Trinidad CM GEF calculation 190712 rev.xls
15	1970	Government of Trinidad & Tobago: Petroleum Regulations (1970)
16		Tools Followed by the PoA-DD • Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (ver2) • Tool to calculate baseline, project and/or leakage emissions from electricity

Reference number	Date	Document Title and version number (if applicable)
		consumption (ver1) • Tool for the demonstration and assessment of additionality (6.0.0) • Assessment of the validity of the original/current baseline and to update of the baseline at the renewal of the crediting period (3.0.1) • Tool to calculate the emission factor for an electricity system, Version 02.2.1
17		EB Guidelines followed by the PoA-DD • "Guidance on the assessment of investment analysis" • "Guidelines on Common Practice"
18	Data for 2007 to 2012, Accessed August 2012	Trinidad and Tobago Central Bank Prime Interest Rates 120813.xlsx, http://www.central-bank.org.tt/content/commercial-banks-annual
19	August 2012	TOSL Engineering Limited: CPA Process & Management Manual version1.0, TOSL CPA Management Plan.pdf
20	04 September 2012	Letter of Approval (LoA) issued by the Trinidad and Tobago local DNA
21	21 December 2012	Email correspondence from the Ministry of Energy and Energy Affairs (MEEA) Trinidad and Tobago, confirming that the Ministry will approve facilities that are "fit-for-purpose" after construction and commissioning, based on inspection certificates, reports, and visual inspection by the MEEA.
22	17 August 2012	Modalities of Communication (MoC) submitted by the authorized signatories during the validation process Petrotrin PoA MoC - signed.pdf
23	Accessed by September 2012	The Trinidad Petroleum Act (1969) to consolidate and amend the law relating to petroleum so as to make better provision for the exploration for, and the development and production of petroleum, and for matters consequential or incidental
24	Accessed by September 2012	The Petroleum Regulation (1970) related to permits and licensing for Petroleum related activities in Trinidad and Tobago
25	1969	Government of Trinidad & Tobago: Petroleum Act (1969)

A.2 INTERVIEWS

Reference	Name	Title & Organisation	Main topics discussed
IV1	Shazan Ali	Chief Executive Officer – TOSL Engineering Limited	CPA1
IV2	Rishi Mahadeo	Senior Process Engineer – TOSL Engineering Limited	Trinidad & Tobago energy market and CPA1 relation
IV3	Ravindranath Maharaj	Management Accountant – TOSL	Investment Analysis

		Engineering Limited	
IV4	Navendra Dass	Manager Business Development & Projects – TOSL Engineering Limited	General PoA aspects
IV5	Gary Clyne	Managing Director - Tricontinental Group	CPA1 schedule and general aspects/LoA/MoC
IV6	Neil Bujun	Senior Project Engineer – PETROTRIN	CPA1 measures to be implemented / baseline scenario – Oil production forecasts/AG to be recovered
IV7	Shelvin Dowlath	Senior Process Engineer – PETROTRIN	CPA1 measures to be implemented / baseline scenario – Oil production forecasts/AG to be recovered
IV8	Felix B. Dayo	President/CEO – Triple E Systems Inc.	PoA and CPA types configuration/monitoring – PoA-DD content
IV9	Deborah Wilson Cornland	Cornland Intentational	PoA-DD content – National policies – grid emission factor calculation
IV10	Mark Rudder	Senior Petroleum Engineer – Ministry of Energy and Energy Affairs	Local regulations on venting, flaring, oil and gas and environmental aspects
IV11	Selcrest Husbands	PowerGen representative	Grid emission factor input values

Appendix B: Remediation Form

Corrective Action Requests (CARs), Clarification Requests (CLs) and Forward Action Requests (FARs)

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CAR01 The LoA issued by the local DNA "Ministry of Planning, Housing and the Environment" of the Republic of Trinidad and Tobago has not been provided. The MoC has not been provided. Please provide the missing documents.	5.1.1 5.1.2 5.1.3 5.1.4 5.3.1 5.4.1	The LoA was issued on September 4th 2012. A scan of the original document was submitted to ERM on September 10th. A notarized copy of the MoC was sent to ERM by courier (FedEx) on September 7th, 2012.	The MoC /22/was submitted by the PP to the DOE and all the signatories have been found to be consistent with MoC requirements and the participants' description in the revised version of the PoA-DD, section A.3. ERM CVS confirmed the reception of the LoA issued by the "Ministry of Environment and Water Resources". This is not consistent with the UNFCCC website, where the Ministry of Planning, Housing and Environment is referred to be the local DNA. Therefore ERM CVS contacted the official DNA contact person named on the UNFCCC CDM website and confirmed the authenticity of the LoA. CAR01 is closed.
CAR02 Contact details for TOSL Engineering Limited are not given in Appendix 1 of the PoA-DD.	5.2.1	Contact details for TOSL were added to Appendix 1 of the PoA-DD in the revision submitted to ERM on September 10th.	ERM CVS confirms that the latest version of the PoA-DD included the contact details of a TOSL and Petrotrin representatives, in line with the MoC /22/ signatories for each party involved. CAR02 is closed.
CAR03 All the parameters required for calculating project emissions due to fossil fuel consumption or electricity consumption as per corresponding tools provisions are not	8.5.1	The relevant procedures and parameters for calculating project emissions, including emissions resulting from electricity consumption, have been provided for each CPA type in the revised PoA-DD.	ERM CVS confirmed that the following modifications have been made to the PoA-DD: - Parameter $EF_{CO2,Methane}$ has been included and reference in accordance to the provisions of the

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
included. Please revise accordingly.			applicable methodology. - Parameter $EF_{CO2,i,y}$ has been expressed in the correct units according to the provisions of the applicable methodology and tools, as well as the bibliographic references for input values. - Parameter $PE_{FC,j,y}$ has been included as part of the project emissions calculation and correctly described in line with associated Tool. - Parameter $FC_{i,j,y}$ has been included as part of the project emissions calculation and correctly described in line with associated Tool. - Parameter $COEF_{i,y}$ has been included as part of the project emissions calculation and correctly described in line with associated Tool. - Parameter $EC_{PJ,j,y}$ has been included as part of the project emissions calculation and correctly described in line with associated Tool. - Parameter $TDL_{j,y}$ has been included as part of the project emissions calculation and correctly described in compliance with the associated Tool. CAR03 is closed.
<u>CAR04</u> A detailed description regarding the specific formulas that shall be applied to each type of CPA in order to calculate project and leakage emissions are not	8.5.2	The relevant procedures for calculating project and leakage emissions have been provided for each CPA type in the revised PoA-DD. The equations provided in the relevant tools have been added by CPA type. For the purpose of simplification, the eligibility requirements for CPA types 1A, 2A and 3A have been expanded so that any	ERM CVS confirmed that the latest version of the PoA-DD split the description of the equations to be applied in order to calculate the resulting emission reductions (ER=BE-PE-LE) depending on the applicable type of CPA (1A, 2A, 3A, 1B, 2B, 3B, 1C, 2C and 3C). The procedures and formulas provided are in accordance with the provisions of the applicable methodology and tools,

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provided. The GSP PoA-DD/01/ provides a generic explanation on how to calculate project and leakage emissions without making distinction of options for equations that might be applied in each specific case. Parameter TDL has not been considered for the calculation of project emissions from electricity consumption. Please revise the PoA-DD accordingly		onsite power generation is restricted to off-grid captive power generation that may not be produced using CHP facilities. Further, this power is assumed to be used exclusively for the project activity. Option B3 of the *Tool to calculate baseline, project and/or leakage emissions from electricity consumption* is applied and project emissions from off-grid captive power plants are determined by calculating the CO_2 emissions from <u>all</u> fuel combustion in the captive power plant, applying the *Tool to calculate project or CO_2 emissions from fossil fuel combustion*. As a result, several of the monitored parameters referred to under section 11.1.1 of the DVR are not relevant to this PoA. Parameter TDL has been included for the CPA types utilizing power from a grid. The formula for calculating project emissions as well as the monitored parameters have been adjusted accordingly. Note: As indicated in the PoA-DD, in accordance with the methodology, leakage is only considered for CPA Types 3A, 3B and 3C, and the leakage calculations for all three of these are the same.	including the different options derived from them. The description of the calculation of emission reductions in each applicable type of CPA provides a clear identification and understanding on those parameters that shall be monitored and included as part of the monitoring plan. Parameter $TDL_{j,y}$ has been included as part of the project emissions calculation and correctly described in compliance with the associated Tool when calculating Project Emissions due to grid electricity consumption. CAR04 is closed.
<u>CAR05</u> Not all the monitoring parameters included in the corresponding Tools for calculating project and leakage emissions are included. Inconsistencies exist between the parameter description, name and reference in the applicable methodology and Tools Please revise	11.1.1 11.1.2	The parameters to be monitored have been revised in each relevant Part II Section B.7.1 for each CPA Type. To avoid repetition, this section of the document is referred to in the monitoring plan. The inconsistencies in nomenclature and descriptions of parameters have been corrected; the nomenclature and descriptions now match those published in the meth and the relevant tools. The value for parameter $EC_{PJ,j,y}$ has been corrected in Section B.7.1. See CAR03.	The revised version of the PoA-DD included and described the following parameters in accordance with the applicable methodology and tools. **Part II.A – B.7.1** The following parameters have been included as part of the monitoring plan in line with the generic CPA type and applicable methodology and Tools: - $V_{F,y}$ - $NCV_{RG,F,y}$

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		The value for parameter $TDL_{j,y}$ has been corrected.	- $FC_{i,j,y}$ - $w_{C,i,y}$ - $\rho_{i,y}$ - $NCV_{i,y}$ - $EF_{CO2,i,y}$ **Part II.B – B.7.1** The following parameters have been included as part of the monitoring plan in line with the generic CPA type and applicable methodology and Tools: - $V_{F,y}$ - $NCV_{RG,F,y}$ - $TDL_{j,y}$ - $EC_{PJ,j,y}$ **Part II.C – B.7.1** The following parameters have been included as part of the monitoring plan in line with the generic CPA type and applicable methodology and Tools: - $V_{F,y}$ - $NCV_{RG,F,y}$

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			- $FC_{i,j,y}$ - $w_{C,i,y}$ - $\rho_{i,y}$ - $NCV_{i,y}$ - $EF_{CO2,i,y}$ - $TDL_{j,y}$ - $EC_{PJ,j,y}$ CAR05 is closed.
<u>CAR06</u> The framework of the monitoring plan is incomplete with respect to the installation of monitoring equipment, whether in place or planned, (monitoring equipment location for each parameter according to each typical CPA option/configuration is missing). Please revise accordingly.	11.2	The framework for the monitoring plan has been expanded to include a description of monitoring equipment requirements and how they apply to the different CPA types. Further, a diagram indicating schematically where such equipment shall be placed has been provided. See Part II A Section B.7.2 A diagram is included to illustrate the monitoring plan. This diagram is a composite combining the full range of potential CPA types in the PoA-DD.	The framework for the monitoring plan has been expanded upon to include a description of monitoring equipment requirements and how they apply to the different CPA types. A diagram has been provided to illustrate the appropriate monitoring points and is found to be consistent with the provisions of the applicable methodology. CAR06 was closed.

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CL01 (a) The following statement is not consistent with the PoA host parties as per section A.5 of the PoA-DD: "*additional host countries, is anticipated*" Please clarify. (b) The description of relevant national and/or sectoral policies and regulations in the PoA-DD lacks clarity and does not provide the reader with a clear understanding of the relationship between them and the PoA. Revision of the document is required.	6.4.2 (a)	(a) The PoA-DD has been revised to remove this statement. (b) Section A.2 of the PoA-DD has been edited for clarity. The text now clearly states that there are no national policies requiring the capture and/or use of associated gas in oil production. This is supported with a footnote referring to the policy documents provided to the DOE for validation as confirmation that the policy documents of potential relevance do not in fact regulate such activities. Less relevant text has been removed. Recent policy developments that illustrate national aims that are supported by the proposed PoA are also described. Note: Several of these policies were established after the adoption by the COP of the CDM M&P (decision 17/CP.7, 11 November 2001) and therefore need not be taken into account in establishing baseline scenarios (see EB65 Annex 5 paragraph 45(b)). References: Petroleum Act (1969) of Trinidad and Tobago Petroleum Regulations (1970) of Trinidad and Tobago	(a) The statement has been deleted. (b) The latest edition of section A.2 provides a clear description of the policy framework as well as how the proposed PoA activity will contribute to early start mitigating GHG emissions while an energy efficiency policy for the petrochemical and power sector is still under development. ERM CVS has reviewed the relevant host country policies covering the oil and gas sector /23/ /24/. Please see section 6.4.2(a) of the validation report for a more detailed validation of all relevant host country policies. CL01 is closed.
CL02 (a)The project description lacks information concerning: the AG recovery technologies to be in place (e.g. at the well heads, gathering stations, boosters/pre-compressors, etc.), before the AG reaches the pipeline where it will be sent to the boosters/LPCs, etc. (b) the monitoring equipment applicable to each type of CPA is not clearly described in the PoA-DD	6.4.3 (a)	(a) Information concerning the AG recovery technologies to be in place has been added to the PoA-DD (see Section A.6) (b) The monitoring equipment required for the various CPA types has been added. See Part II A Section B.7.2 (same response as CAR06). (c) Please see Part II A Section B.3 where the GHG and GHG sources included in the project boundary are indicated. With the restructuring of the PoA-DD, this section is referred to for each set of CPA types. The GHGs and GHG sources, as expressed in the methodology, are the same for all CPA types. The following sentence has been added to this section of the	(a) An explanation was added to section A.6 providing a clear view of the way and kind of equipment involved in the PoA and potential CPAs. A clear distinction between the pre-project and PoA situation has been provided. (b)Figures have been included in section A.6 showing the monitoring points as well as a detailed monitoring description in Part II, B.7.2. (c)Figure 11 has been added to the revised version of the PoA-DD which provides the GHG emission sources. Given that the the pre-project GHG emission sources are common to all CPAs, having included only 1 figure to represent the GHG emission sources of the baseline is

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(c) information on the GHGs and GHG sources involved in the different CPA types has not been provided (d) A clear/comprehensive description of the differences between the PoA and the baseline situation is not provided. Please revise accordingly		PoA-DD to make this explicit: "These sources and gases apply to all CPA types under this PoA." The fact that the pre-project situation will have the facility to produce crude oil and vent/flare associated gas, while the project situation will continue to produce oil but capture and process gas (compression and/or component separation) has been included in Section A.6 of the PoA-DD (d) Figure 11 has been revised to reflect a typical baseline situation in Trinidad. Figure 12 has been replaced with a reference to figures 2 through 10. The monitoring points in figures 2 through 10 have been corrected. Please see CAR06.	found to be consistent with the provisions of the PoA-DD and applicable methodology. (d) A clear and comprehensive description of the differences between the PoA and the baseline situation has been provided. Figure 11 illustrates the typical baseline situation, and the figures provided in section A.6 of the PoA-DD illustrate the project situation for different types of CPAs. CL02 is closed.
CL03 Description of the baseline scenario technology and equipment for each type of CPA is not described.	6.4.4 (a) 6.4.4 (b)	For a typical CPA (all CPA types), in the baseline scenario, associated gas is being vented at the well/casing head and at gathering stations at the top of the crude oil storage tanks or flared at flare stack locations. In the case of venting, vent valves may be in place, while in the case of flaring, flare stacks are the typical equipment. This situation has been generically described in Section A.6 of the PoA-DD. The eligibility criteria have been revised to require that all associated gas from oil wells included the CPA must be either vented or flared in the baseline. This shall be demonstrated through the project design, supported through studies or documentation such as pre-feasibility studies.	Based on the fact that all of the nine generic CPA types consist of the recovery of AG that would have been flared or vented and also based on the observations during the validation site visit to the first real case CPA, ERM CVS can confirm that the baseline and pre-project description related to the AG and associated technology added to the PoA-DD would be the same for any of the CPA types and is considered to be adequately described in section A.6. The text added to the revised version of the PoA-DD regarding the pre-project situation is found to be consistent with the situation observed on-site during the validation site visit. CL03 is closed.
CL04 Specific eligibility criteria related to each CPA type on the specifications of technology/measure including the level and type of service are not included, and	7.1.3	The eligibility requirements have been revised in the PoA-DD and presented separately for each CPA type. The eligibility requirements related to the technology to be implemented, the use of associated gas post-capture, and energy supply to the project activity differ for each CPA type.	The latest version of the PoA-DD split the eligibility criteria according to each generic CPA type (Part I Section B.2.). In addition, Part II. A. Section B.5 contains the provisions for the demonstration of CPA eligibility criteria under the PoA.

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the PoA-DD does not describe how compliance with the criteria will be tested in an objective and verifiable way. Please revise the documentation accordingly.		The types of documentation required to demonstrate compliance with each eligibility requirement have been provided.	ERM CVS arrived to the following conclusions. • Specific criteria for each type of generic CPA has been added and adequately addressed in the PoA-DD according to the CPA description in section A.6 • Provisions in order to ensure compliance with the applicability conditions have been included and found to be objective • A clear definition of the documentation required to evaluate the inclusion of a CPA has been provided as referenced above CL04 is closed.
CL05 The eligibility criteria do not include provisions in order to check that the start date of the CPA doesn't start before the start date of the PoA. Please revise the documentation accordingly.	7.1.4	A condition to ensure that the start date of the CPA is not before the start date of the PoA has been included	ERM CVS confirms that the updated version of the PoA-DD included the applicability condition to ensure that the starting date of the CPA is not prior to the starting date of the PoA. CL05 is closed.
CL06 Eligibility criteria number 15 does not clearly state conditions that ensure compliance with the applicability and other requirements of the methodology. Please revise the document accordingly.	7.1.5	Eligibility criteria 8 has been revised to read as follows: "The CPA must meet the requirements of AM0009 version 6.0.0 with regard to applicability conditions (see Part II Section B.2 for each CPA Type), baseline setting and monitoring as well as all Tools associated with this methodology. This shall be demonstrated in the CPA-DD and supported with documentary evidence such as pre-feasibility studies."	The latest version of the PoA-DD incorporated eligibility criteria Nº 8 which specifically sates that the CPA shall comply with the methodology and associated Tools provisions. CL06 is closed.

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		Documentary evidence for confirming that each applicability condition has been met is provided in Part II Section B.2.	
CL07 Eligibility criteria number 12 only makes reference to the Tool for the Demonstration and Assessment of additionally without considering any criteria that each type of CPA shall meet. Please revise accordingly.	7.1.6	Eligibility criteria 10 now reads as follows: "The CPA must meet the PoA requirements pertaining to the demonstration of additionality. Pre-tax benchmark analysis is required, applying the benchmark set at the PoA level. The minimum relevant technical and economic parameters and approaches provided in the detailed framework in Part I Section B.1 of the PoA-DD must be considered. The investment analysis must include a sensitivity analysis of key parameters, including the volume of gas recovered, volume delivered, CAPEX, OPEX, and gas price. The investment analysis shall be checked through an assessment of the CPA-DD based on the framework for demonstrating additionality established in Part I Section B.1 of the PoA-DD." Section B.1 has been further elaborated to include generic requirements for the performance of investment analysis. The additions include: • the benchmark approach • minimum relevant technical and economic parameters and approaches that must be considered, and • key parameters and ranges to be included in sensitivity analyses Specific assumptions for CPAs implemented in Trinidad and Tobago have also been included.	The latest version of the PoA-DD incorporated eligibility criteria Nº 10 which specifically sates that each CPA shall assess and demonstrate the additionality following the provisions of the Tool for the demonstration and assessment of additionality, in particular following an investment analysis following the guidelines set out in the PoA-DD and applying a specifically defined benchmark. The revised version of the PoA-DD incorporated specifications regarding how to carry out the investment analysis, including specific requirements for substantiating the input parameters to the analysis, and specific requirements for the sensitivity analysis. CL07 is closed.
CL08 Eligibility criteria do not include a description of conditions or procedures to be applied at the CPA level in order to check and confirm that funding from	7.1.12	Eligibility criteria 13 now reads as follows: "The CPA owner must provide the CME with a declaration as to whether or not the CPA will receive donor funding. For CPAs that are funded partially or wholly with donor funding, the CPA owner must provide the CME with written confirmation from the	Eligibility criteria Nº 13 added to the latest version of the PoA-DD takes care about the potential ODA diversion from Annex I parties in the implementation of CPAs under the PoA.

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Annex I parties, if any, will not result in a diversion of official development assistance. Please revise accordingly.		Annex I party that the funding provided does not result in a diversion of official development assistance."	CL08 is closed.
CL09 The version numbers of the applicable tools are not provided.	8.1.1	The version numbers have been added.	The latest version of the PoA-DD incorporated the associated Tools version numbers as follows: **Part II. A, Section B.1** • Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (version 2) • Tool to calculate baseline, project and/or leakage emissions from electricity consumption (version 1) • Tool for the demonstration and assessment of additionality (version 6.0..0) • Assessment of the validity of the original/current baseline and to update of the baseline at the renewal of the crediting period (version 3.0.1) **Part II. B, Section B.6.1** • Tool to calculate the emission factor for an electricity system, Version 02.2.1 The above Tools version numbers have been checked to be consistent and active according to the UNFCCC website at the time of validation.

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			CL09 is closed.
CL10 The eligibility criteria do not include reference to each of the applicability conditions of the methodology. Revision is required.	8.2.1	The introductory text to Part II Section B.2 has been revised to read: "Each CPA shall address the applicability conditions of methodology AM0009 version 6.0.0 as follows:" Required documentation for confirming that applicability conditions apply to specific CPAs has been added to the table following that introductory sentence. In addition the relevant applicability conditions of the tools referred to in the meth have been added to the table. Note: this table applies and is referred to in all 9 CPA types.	As per the new consideration of the PP in the PoA-DD, regarding the application of the applicable methodology in Part I, Section B.2, eligibility criteria Nº 8 and Part II, Section B.2, each CPA aiming at being registered under the PoA shall carry out an assessment to demonstrate and document that it is in fact applicable to the methodology and associated Tools. CL10 is closed.
CL11 Specific flow diagrams for each type of CPA are not included. The requirements of the guidelines for completing the PoA-DD have not been followed in this respect. Please revise accordingly.	8.3.1 (b)	The revised PoA includes 9 flow diagrams covering the 9 CPA types. These diagrams have been revised, to provide consistency. Please see CAR06 for further information.	The specific flow diagrams added to the latest version of the PoA-DD clearly represent each type of generic CPA configuration regarding technology and energy consumption for the recovery / compression / treatment / transport of the AG, and it is also in line with the applicable methodology provisions. CL11 was closed.
CL12 The starting date of the PoA-DD is not clearly defined. Please clarify.	9.2.1	The starting date of the PoA was changed in the revised PoA-DD submitted to ERM, in line with the latest version of the Glossary of CDM terms.	Part I, Section D.1 of the latest version of the PoA-DD provides a clear and specific start date for the proposed PoA activity. without any conditions. This is in line with the provisions of paragraph 62 of the CDM Project Standard. The revised starting date is the date of GSP start, which is in line with the latest version of the Glossary of CDM terms.

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			CL12 is closed.
CL13 A clear description and evidences on how the competencies function will be reviewed in line with the operational and management plan is not provided. Please revise the documentation accordingly.	10.1.2	This issue has been addressed under Section 9. Training of the CPA Management Plan, through the addition of the following text: "Annual reviews of CME staff competencies will be carried out. Additional training will be provided as needed. The Human Resources section at TOSL will be responsible for monitoring, addressing and retaining records regarding capacity development needs and training arrangements."	A clear description of how staff competencies will be reviewed has been included in the operation and management plan /19/. The revised plan includes annual reviews of competency and provision of training, under the supervision and monitoring of the human resources department. CL13 is closed.
CL14 A comprehensive description / discussion / evidences on training and capacity development and record retention for personnel is not included within the management system. Please provide the missing information	10.1.3	Our revision to the CPA Management Plan to address this issue has been combined with the revision addressing CL13. Both the review of competencies function and responsibilities for capacity development and record retention are now described under Section 9 of the document. See citation under CL13.	The operation and management plan /19/ now includes provisions for training and capacity development of personnel, with technical CDM training provided as required to ensure the necessary competencies. The human resources department will be responsible for retaining records of capacity development reviews and training. CL14 is closed.
CL15 The provision for the "CME to check the location, project type, and owner of the project with the CME reference data set" does not check against the projects/CPAs listed on the CDM website. Please revise the documentation accordingly.	10.1.5	Annex 3 of the CPA Management Plan clearly indicates that the source of information (location, project type, owner) regarding registered projects / CPAs is the UNFCCC website. To provide additional clarity, the following sentence has been added to the description of a dataset to be maintained by the CME to support the eligibility check in Section 6: "This dataset will be sourced from the UNFCCC CDM website." A reference to Annex 3 has also been added to this section of the text.	The CME submitted a revised version of the Operation and Management Plan, and updated the poA-DD accordingly, including provisions for checking whether the specific CPA has previously been registered as a CDM, either on a stand-alone basis of as part of another PoA. CL15 is closed

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		Please refer to point 3 (e) on page 4 of the CPA Process and Management Manual, which explicitly addresses this issue. For the sake of clarity, in the PoA-DD the text under "Section C. Management System" has been expanded as follows (addition in blue): "The CME will screen prospective CPAs under consideration for inclusion in the PoA and assess whether or not each CPA meets the eligibility criteria for inclusion in the PoA, including but not limited to the additionality of the CPA under consideration, and is not a duplication of a stand-alone CDM project or a CPA in another PoA submitted for CDM registration." Please see the revision referred to above, in the PoA-DD as well as point 3 (e) on page 4 of the CPA Process and Management Manual.	
CL16 Evidences and discussion addressing continuous improvement are not included as part of the management system. Please provide the missing information.	10.1.7	A section addressing continuous improvement has been included in the CPA Management Plan. See Section 11.	The updated operation and management plan /20/ now includes procedures for continuous improvement, including annual review and updating of the operation and management plan, and root cause or other analysis procedures to assess problems, and the revision of procedures to ensure that repetition of similar problems is avoided. CL16 is closed.
CL17 The PoA-DD lacks monitoring diagrams developed for each type of CPA, reflecting the parameters and location of		Please see the schematic diagram in Part II A Section B.7.2, indicating the location of monitoring equipment. This diagram is accompanied with new text describing the types of monitoring equipment required under the different conditions of the CPA types.	The revised version of the PoA-DD provides a generic diagram that covers the 9 generic CPA types, including the monitoring variables and metering equipment location.

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the monitoring equipment. Please revise.			CL17 was closed.
CL 18: The PoA does not fully consider the requirements in the methodology AM0009: "*When defining eligibility criteria for CPA inclusion for a distinct type of CPAs, the CME shall consider relevant technical and economic parameters, such as:* *(a) Ranges of overall projected production of associated gas and/or gas-lift gas;* *(b) Ranges of projected quantity of gas recovered, gas flared, vented, consumed on-site, processed in a gas processing plant and/or compressed into a pipeline;* *(c) Ranges of price for the delivery of recovered gas;* *(d) Ranges of net calorific value of the recovered gas;* *(e) Ranges of capital expenditure for gas infrastructure needed in the relevant scenario, such as gas recovery facilities, pipelines, and gas processing plant (if applicable) etc.;*		These requirements have been considered, and relevant points included as guidance to the CME implementers for carrying out the sensitivity analysis	Additionality is demonstrated at CPA level by means of an investment analysis. Also, no projects of this kind have ever been developed in T&T before, therefore reliable data on the normal ranges of costs and revenues, and even ranges of installed capacity etc for such projects are simply not available in the host country. Therefore the values of these parameters cannot be set at PoA level. ERM CVS has confirmed this based on its sectoral and local knowledge. Due to the non-existence of reliable data, trying to set these parameters at PoA level would not comply with the requirement that eligibility criteria have to be objective and verifiable. In order to ensure the criteria are objective and verifiable, the PoA-DD requires a full investment analysis for each CPA, and provides detailed guidance on how this shall be carried out. The investment analysis is considered an objective and verifiable means of demonstrating additionality, since all the input values can be validated by the DOE against reliable third party references (and if this is not the case, the CPA will not be accepted). Furthermore the calculations can be transparently and traceably presented. The PoA-DD requires strict compliance with the detailed requirements of the additionality tool and investment analysis guidelines from the CDM-EB, which ensure a conservative and accurate result of the analysis, and also ensure it is objective and verifiable (the VVS requirements for validating investment analysis also apply to CPAs using investment analysis). Furthermore the PoA-DD sets the benchmark at PoA level, provides detailed guidance for carrying out the

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(f) Ranges of operational expenditure; *(g) Ranges of 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.* *The eligibility criteria related to costs, revenues and investment climate shall be updated every two years in order to correctly reflect the technical and market circumstances of a CPA implementation*"			investment analysis, and provides further guidance on the sensitivity analysis that should be carried out. In order to address the requirements of the methodology as mentioned in this CL, the PP has included further requirements in the PoA-DD for the sensitivity analysis. The analysis should include at the minimum: • Parameters whose values will affect the estimation of the Additionality decision variables (e.g. Internal return on Investment). The parameters to be included in the sensitivity analysis should include: i. The projected volume of associated gas and/or gas-lift gas projected to be recovered by the project ii. The projected volume of gas to be delivered to point F by the project iii. The CAPEX iv. The OPEX v. Assumed price for the delivery of recovered gas or final product if recovered gas is processed The sensitivity analysis should be carried out over a range of not less than ±10% and not more than ±20%; The range of the sensitivity analysis must be determined individually for each of the sensitivity-analysis parameters. For CPAs implemented in the Republic of Trinidad and Tobago, the following criteria for carrying out investment

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			analyses of CPAs are established at the PoA level. • Benchmark analysis shall be applied, using a benchmark of 10% • Operational lifetime of the project shall be 25 years • Year for which residual value shall be calculated: 20 Sensitivity analyses shall be carried out for the following parameters and value ranges. Alternative value ranges may be applied to individual parameters if verifiable sources can be provided that justify the alternative. Variable Sensitivity Range (a) Projected volume of associated gas and/or gas-lift gas projected to be recovered by the project Appendix 1: ±10% (b) Projected volume of gas to be delivered to point F by the project Appendix 2: ±10% (c) Assumed price for the delivery of recovered gas or final product if recovered gas is processed Appendix 3: ±10% (d) CAPEX if based on front-end engineering estimates Appendix 5: ±20% (e) CAPEX if based on detailed feasibility study Appendix 6: ±10% (f) OPEX

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			Appendix 7: ±10% These additional requirements are considered to make the investment analysis more defined, and more objective at CPA level. ERM CVS has confirmed that the framework for the investment analysis will ensure that CPAs demonstrate additionality in an objective and verifiable manner. CL 18 was closed

In addition some editorial and minor changes to the PoA-DD were made by the PP that had no relevance on compliance with CDM requirements.

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No FARs raised			