PETROTRIN OIL FIELDS ASSOCIATED GAS RECOVERY AND UTILIZATION PROGRAMME OF ACTIVITIES

JUNE 15, 2012

A. GENERAL PROGRAM DESCRIPTION

PROGRAM TITLE	PETROTRIN Oil Fields Associated Gas Recovery and Utilization Project
PROGRAM OF ACTIVITIES (PoA) LEVEL *NOTE: This section relates exclusively to the supportive measures and general environment of the Program. Concrete GHG abating activities are discussed under ACTIVITY LEVEL.*	
Objective of the program	The main objective of this project will be the recovery and utilization of associated gas from onshore and offshore oil fields that would otherwise be vented or flared. The project will be developed under the PoA process. CDM Project Activities (CPAs) that will be included in the PoA over the crediting period of 27 years will be activities involving the recovery of associated gas produced with crude oil that is either flared or vented at the field. Although CPAs that will be included in the PoA will come from the oil fields of Petrotrin, another objective will be to include PoAs from non-Petrotrin fields, both within Trinidad and from other oil producing countries.
Program description	Recovery and utilization of associated gas from onshore and offshore oil fields that would otherwise be vented or flared. The project methodology that will be utilized to develop the CDM projects will be consistent with approved large-scale methodology AM0009 which is in *sectoral scope 10*, which treats fugitive emissions from oil and gas production. CPAs included in this PoA can also utilize the approved large scale methodology AM0077 which is in *sectoral scopes 1* and *10* which also covers in addition to sectoral scope 10, emissions from energy industries (sectoral scope 1) and AM0037 covering in addition to sectoral scope 10 also sectoral scope 5 which covers emissions from chemical industries. The projects that will be included in the CPAs will avoid methane or carbon dioxide emissions by recovering and utilizing methane rich associated gas, which would have been vented or flared. Venting is the most prevalent practice for associated gas produced in the oil fields of Petrotrin.
Measures to be implemented on the program level	*To be detailed in the POA-design document, which will also be reviewed by the DNA.*
CDM PROGRAM ACTIVITY (CPA) LEVEL *NOTE: This section relates to the actual activities that lead to GHG reductions. In this section it is not necessary to describe the shape of a CPA in CDM terms (see literal D. ... DEFINITION OF A CPA). Here it shall be merely described how GHG are reduced by implementation of technology promoted under the program.*	
Description of GHG abating activities under the program	The project activity will involve the recovery and utilization of associated gas from onshore and offshore oil fields that would otherwise be vented or flared. As indicated these activities will be conducted in accordance with CDM methodologies AM0009, AM0037 and AM0077.
Technology to be employed	The technologies to be employed here cover the various possibilities for the development of the CDM projects that will be covered in the CPAs. The first type will involve the capture of the gas that would in the absence of the project activity vented and processing of the recovered gas in scrubbers for liquids removal, before compression in compressors to pipeline pressures, scrubbing the compressed gas to remove unwanted materials (e.g condensates) before delivery to pipelines to transport the gas to the national gas line for industrial use after metering the volume of gas recovered and transported.

	Another possible technology arrangement will involve the implementation of Gas Processing Facility (GPF) to serve a cluster of fields. In this case, recovered associated gas after initial cleaning is sent to the GPF where: condensates is knocked out and recovered; the C3/C4 components are separated from the recovered gas and blended to produce LPG; and the dry gas made up of mostly methane is compressed and injected to the national gas pipeline as sales gas to consumers. Another sequence will involve a similar arrangement as described in the previous paragraph (GPF, Condensate Recovery and Sales Gas Production). However, instead of injecting the sales gas into a transmission or distribution pipeline to unidentified end users, the sales gas is provided to specifically identified end-users in form of CNG (from daughter and mother systems) as energy inputs or fuels. It is also possible to have the sales gas sent to end-users that will use the gas as feedstock.
Scale of activity	The CDM project is an industrial large scale activity.
TECHNOLOGY	
Technology deployed	The following are the possible technologies that will be deployed: ▪ A technology that will capture the flared gas, gather the gas from various stranded fields in gathering pipelines that will transport the wet gas through scrubbers to remove entrained liquids before delivery to a compressor station where the gas pressure is boosted to pipeline pressures, scrubbed again to remove any entrained liquids before delivery to supply pipeline. ▪ Another possible variant is for the recovered wet gas to be supplied to a Gas Processing Facility (GPF), which will serve a cluster of fields, where the wet gas is separated into Condensates, C3/C4 streams, and the dry gas. The C3/C4 stream can then be blended to produce LPG ▪ Another variant, which will cover other sets of technologies will involve, supplying the gathered gas after treatment to a “Mother-Daughter” system, where Compressed Natural Gas (CNG) is first produced (in Mother System), transported in specialized equipment to end-users, where the compressed gas is depressurized to end-use pressures in the daughter systems at the site of the end-user who is supplied with the gas for use as a fuel.
Input streams	Flared and/or vented gas
Human capacity and training	Depending on the technology route selected for the CPA, each component will be constructed and operated in full compliance with all domestic environmental laws and CDM requirements. The technology will be sourced from international suppliers but will be installed and managed by local contractors. Whenever necessary, training will be provided by manufactures.
LOCATION OF THE ACTIVITIES	
Country/Countries	Trinidad and Tobago
City/State/Region	The first CPAs for this project will come from PETROTRIN onshore oil fields located in the St. Patrick, Victoria and Mayaro Counties, Trinidad W.I.
Typical activity sites	These fields include: Grande Ravine, Parry lands, Fyzabad, Erin, Barracpore, Benneth Village, Paloseco South, Palo Seco North, Quarry, Apex Quarry, Coora, Wilson, Penal, Guagyaguayare, Balata, Catshill, Antillies Trinity, Inniss, Los Bajos and Palo Seco Trinity fields.

Brief description of the location of the activities	The first CPA for this project will come from PETROTRIN onshore oil fields located in the St. Patrick, Victoria and Mayaro Counties, Trinidad W.I. The precise geo-coordinates of each field are illustrated in Annex 4. Subsequent addition of CPAs will come from other locations (to be decided) within the areas of operation of Petrotrin. CPAs will also be added to this PoA from other non-Petrotrin fields within Trinidad and from other countries where oil production is taking place and where associated gas is being vented or flared.

B. STAKEHOLDERS OF THE PROGRAM

MANAGING ENTITY *The entity that will be formally responsible for the program. The Managing Entity is the entity that represents the program at the UNFCCC and who will receive the CERs for all activities implemented under the Program.*	
Name of the Managing Entity	Petroleum Company of Trinidad and Tobago
Organizational category	Government agency
Contact person	President: Khalid Hassanali
Address	The Petroleum Company of Trinidad and Tobago (PETROTRIN) Corporate Headquarters (Administration Building) Pointe a Pierre
Telephone/Fax	Tel: (868) 658-1902
E-mail and web address, if any	Khalid.Hassanali@petrotrin.com
Main activities	*Petrotrin is an integrated national oil and gas company. The company's core activities include exploration for and development and production of oil and gas and manufacturing of refined petroleum products*
Summary of the financials	
Summary of the relevant experience of the Managing Entity	*Petrotrin has over 100 years of experience in the hydrocarbon industry through its predecessor companies. The company therefore has considerable experience with numerous gas capture and recovery technologies and therefore has adequate knowledge for appraising CPA technologies. Being a state owned company Petrotrin also has a strong relationship with the government and its relevant agencies through the company's appointed Board of Directors. Petrotrin also has a large balance sheet and possesses the ability to manage various financial flows. Petrotrin has also trained several key employees in the CDM initiative to ensure Petrotrin upholds its obligations as a CME and has procured the services of known CDM expertise to assist in this regard.*

	TT$ 000	US$ 000
Total non-current assets	25,783,276	4,012,274
Total current assets	14,677,945	2,284,114
Total assets	40,461,221	6,296,388
Total equity	12,283,114	1,911,441
Total non-current liabilities	16,519,322	2,570,661
Total current liabilities	11,658,785	1,814,286
Total equity and liabilities	40,461,221	6,296,388

Staff	*Petrotrin has a workforce of over 5000 persons.*
CONTRACTUALLY COMMITTED ACTIVITY IMPLEMENTER(S) *An Activity Implementer is either an entity that aggregates and facilitates the deployment of equipment by individuals or small units (e.g. promoter, distributor or retailer of equipment) or an entity that deploys and operates the equipment itself (e.g. company, municipality). It is not necessary that the Activity Implementers listed here will be the "Entity responsible for the CPA" as may be nominated in the CDM documentation.* *NOTE: Only Activity Implementers that have already subscribed to the program may be listed here. Activity Implementers that are likely to join the program at a later stage shall be included with a generic description in section GENERIC PROFILE(S) OF TYPICAL FUTURE ACTIVITY IMPLEMENTER(S) below.*	
Name of the Activity Implementer	Petroleum Company of Trinidad and Tobago Limited (PETROTRIN)
Organizational category	*Government agency*
Contact person	Mr. Khalid Hassanali, President
Address	The Petroleum Company of Trinidad and Tobago (PETROTRIN) Corporate Headquarters (Administration Building) Pointe a Pierre
Telephone/Fax	Tel: (868) 658-1902
E-mail and web address, if any	Khalid.Hassanali@petrotrin.com www.petrotrin.com
Contact person	Mr. Imtiaz Ali , Corporate Manager Strategy and Business Development
Address	The Petroleum Company of Trinidad and Tobago (PETROTRIN) Corporate Headquarters (Administration Building) Pointe a Pierre
Telephone/Fax	Tel (868) 658- 4315, Fax (868) 658- 2513
E-mail and web address, if any	Imtiaz.Ali@petrotrin.com www.petrotrin.com
Contact person	Mr. Neil Bujun , Senior Project Engineer
Address	The Petroleum Company of Trinidad and Tobago (PETROTRIN) Corporate Headquarters (Administration Building) Pointe a Pierre
Telephone/Fax	Tel.: (868) 658- 4200 X4591 Fax: (868) 658- 2513
E-mail and web address, if any	Neil.Bujun@petrotrin.com www.petrotrin.com
Contact person	Ms. Trevonne Clarke Risk Analyst
Address	The Petroleum Company of Trinidad and Tobago (PETROTRIN) Corporate Headquarters (Administration Building) Pointe a Pierre

<table>
<tr><td>Telephone/Fax</td><td>Tel: (868) 658- 4200 X 4635
Fax: (868) 658- 2513</td></tr>
<tr><td>E-mail and web address, if any</td><td>Trevonne.Clarke@petrotrin.com
www.petrotrin.com</td></tr>
<tr><td>Main activities</td><td>Petrotrin is an integrated national oil and gas company. The company core activities include exploration for and development and production of oil and gas and manufacturing of refined petroleum products.</td></tr>
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</table>
</td></tr>
<tr><td>Summary of the relevant experience of the Activity Implementer</td><td>Petrotrin has over 100 years of experience in oil and gas recovery through its predecessor companies. Petrotrin Exploration and Production division which will serve as the activity implementer of the first and second CPAs is versed with numerous gas recovery technologies and also have considerable experience with the technology to be implemented as several key elements of technology (pipeline, scrubbers, compressors) are used in Petrotrin core activities in differing applications.</td></tr>
<tr><td>Staff</td><td>Petrotrin Exploration and Production division which will be charged with managing the CPAs has over 1680 persons in 15 departments</td></tr>
<tr><td colspan="2">Please insert information for additional Activity Implementers as necessary.</td></tr>
<tr><td colspan="2">GENERIC PROFILE(S) OF TYPICAL FUTURE ACTIVITY IMPLEMENTER(S)
NOTE: Generic profiles of typical entities that are likely to become Activity Implementers in the future by subscribing to the running program are to be given here. Information on all kind of entities that could potentially participate under the program in the future shall be provided. Information on particular Activity Implementers that have already subscribed to the program shall be provided in the section CONTRACTUALLY COMMITTED ACTIVITY IMPLEMENTERS above.</td></tr>
<tr><td>1. Organizational category</td><td>State Owned Oil Company</td></tr>
<tr><td>Main activities</td><td>Additional CPAs will come from oil fields owned by Petrotrin. Petrotrin is a State Owned Oil Company involved with the business of developing the crude oil and gas resources of the Republic of Trinidad and Tobago. CPAs will also be sourced from; non-Petrotrin Operators of Oil and Gas Fields within the Republic of Trinidad and Tobago; from oil and gas field operators within countries in the sub-region (Caribbean); and from oil and gas operators from countries outside the sub-region.</td></tr>
<tr><td>Background information on the core business sector of the typical future Activity Implementers</td><td>Provide further information on the sector in which the typical futures Activity Implementers are carrying out their core business. Describe the general environment of the sector.

Petrotrin core business is production and marketing of oil and gas from offshore and onshore fields in the Republic of Trinidad and Tobago. In terms of general</td></tr>
</table>

	environment, associated natural gas produced, which does not have markets where it can be sold are generally vented. There are no existing environmental regulations in the Republic of Trinidad and Tobago restricting the venting of such gases.
Number, size and regional distribution of typical future Activity Implementers in the sector	*Not currently available*
Financial information of typical future Activity Implementers	*Not currently available*
Background information on the relevant experience of the typical future Activity Implementers	*Not currently available*
2. Organizational category	*Other Oil Companies Operating in the Republic of Trinidad and Tobago*
Main activities	*Additional CPAs will come from oil fields owned by non-Petrotrin oil field operators. Since we have not identified these CPAs it will be inappropriate to give names or describe the main activities of these future Activity Implementers. What we can say here is that they are oil and gas companies operation in Trinidad and Tobago, operating in other countries in the Caribbean, and operating in other countries where CDM projects can be legally hosted.*
Background information on the core business sector of the typical future Activity Implementers	*These companies typically core business will be production and marketing of oil and gas from offshore and onshore fields in the countries where they are located. In terms of general environment, associated natural gas produced, which does not have markets where it can be sold are generally vented.*
Number, size and regional distribution of typical future Activity Implementers in the sector	*Describe the total number of potential future Activity Implementers in the sector and how the sector is clustered regionally and in terms of production, number of employees, etc. (provide the indicators that are suitable to approximate the amount of emission reductions that could be achieved by the future Activity Implementers)* *N.A.*
Financial information of typical future Activity Implementers	*N.A. To be provided to the relevant DNAs of subsequent projects.*
Background information on the relevant experience of the typical future Activity Implementers	. *N.A.*
3. Organizational category	*Oil Companies Operating Outside of the Republic of Trinidad and Tobago*
Main activities	*Additional CPAs will come from oil fields owned by Oil Companies involved with the business of developing the crude oil and gas resources of the Non-Annex 1 Oil Producing Countries*
Background information on the core business sector of the typical future Activity Implementers	*The core business of these entities will be the production and marketing of oil and gas from offshore and onshore fields in the countries In terms of general environment, associated natural gas produced, which does not have markets where it can be sold are generally flared or vented.*
Number, size and regional distribution of typical future Activity Implementers in the sector	*N.A.*

Financial information of typical future Activity Implementers	*N.A.*
Background information on the relevant experience of the typical future Activity Implementers	*N.A.*
Please insert information for additional Activity Implementer Profiles as necessary.	
SERVICE PROVIDER(S)	
Name of the Service Provider	T.B.D.
Organizational category	• *Government* • *Government agency* • *Municipality* • *Private company* • *Non Governmental Organization* • *Other, please specify: _____*
Type of service	• *Technology* • *Loan* • *Energy audit* • *CDM consultancy* • *Other*
Contact person	T.B.D.
Address	T.B.D.
Telephone/Fax	T.B.D.
E-mail and web address, if any	T.B.D.
Main activities	T.B.D.
Summary of the financials	T.B.D.
Summary of the relevant experience of the Activity Implementer	T.B.D.
Staff	T.B.D.
Please insert information for additional Service Providers as necessary.	

C. ORGANIZATIONAL SET UP OF THE PROGRAM

ORGANIZATION OF PROGRAM *In this section information shall be given on the roles of the different entities (Managing Entity, Activity Implementers, Service Providers) involved in the Program and how tasks and benefits will be distributed amongst them.*	
Role, Responsibilities and Rights of the Managing Entity	*The CME will recruit potential CPAs for inclusion in the PoA.* *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.* *The CME will develop the project documentation for prospective CPAs for*

	inclusion in the CPA. *The CME will obtain letters of approval from each host Party and Annex I Party which wishes to be involved in the PoA.* *The CME will obtain letters of authorization of its coordination of the PoA from each host Party.* *The CME will forward a completed specific CDM-CPA-DD to a DOE, after having ensured that the CPA and the specific CDM-CPA-DD meets the requirements determined in the POA.* *The CME will support CPA proponents in the process of DOE assessment for inclusion in the PoA.* *The CME will develop and maintain an electronic data storage and retrieval system that will, inter alia, include the following key data elements for each CPA:* • *Name of the CPA;* • *Site location/ coordinates (GPS coordinates);* • *Owner/ developer name and contact details;* • *Project status and progress through the CDM cycle;* • *Meter measurements;* • *Records documenting meter calibrations; and* • *Verification status.* *The CME will develop and implement a system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as CDM project activity or as a CPA of another PoA,* *Before being included in the PoA, the location of each applicant CPA will be cross-checked against the UNFCCC CDM project database to determine that it has not already been officially submitted as a stand-alone project or a CPA in another PoA.* *The CME will implement provisions to ensure that those operating the CPA are aware and have agreed that their activity is being subscribed to the PoA.* *The CME will receive and review monitoring data from each CPA and provide support in ensuring its proper presentation in the form of a monitoring report, prior to submission to a DOE for verification.* *The CME will coordinate the selection and assignment of verification responsibilities to a DOE for verification of all CPAs under the PoA.* *The CME will provide support to CPA proponents during the process of verification, certification and issuance.* *The CME will also archive written documentation of the CPAs (such as maps,*

	diagrams, permits/licenses, and the feasibility study). The CME will be responsible for providing the verifying DOE with all data required from the individual CPAs for successful verification, certification and issuance of CERs. *Managing Entity will be specified as a project participant in the PoA-DD and the sole Focal Point in the Modalities of Communication (MoC) with regard to the PoA and each CPA:* *(a) Authority to instruct the secretariat and communicate with the CDM EB on allocation/forwarding of CERs* *(b) Authority to request the addition of project participants and/or to communicate any voluntary withdrawal and to update contact details of project participants (includes changes in company's name and legal status, addresses, etc.)* *(c) Communication with the secretariat and CDM EB on matters related to registration and/or issuance.* *The Managing Entity will be the conduit to instruct the CDM Registry to forward CERs from the pending account of the CDM Registry once the PoA Participant has provided written instructions regarding their distribution.*
Role, Responsibilities and Rights of Activity Implementers	*The CPA Proponent will be responsible for operating and maintaining the underlying project as described in the CPA-DD, resulting in the avoidance of greenhouse-gas emissions.* *The Proponent of each proposed CPA will be required to enter into a contract with the CME that includes sections on responsibilities and warranties among the contracted terms of participation.* *The Proponent of each CPA will hold primary responsibility for monitoring of their project activity. Each CPA will establish clearly-defined staff roles and responsibilities and monitoring routines within the CPA O&M structure, for ensuring the completeness and accuracy of all required monitored data, and for providing said data to the CME in the format required and in a timely manner. A CDM Manager for each CPA will be responsible for:* • *Managing the process of training new staff with monitoring duties;* • *Ensuring that staff carry out their monitoring duties;* • *Ensuring that procedures are followed on the site; and* • *Improving processes such that the monitoring system is both efficient and effective.* *To ensure that the data is reliable and transparent, each CPA Proponent will establish Quality Assurance and Quality Control measures for meter maintenance and calibration as well as data reading, recording, archiving and auditing.* *Each CPA Proponent will be responsible for monitoring the following parameters with respect to their project activity:* • *Volume of associated gas capture* • *NCV of the associated gas captured* • *Fraction of the associated gas captured that is used for captive purposes within the project facility* • *Quantity of backup fuel consumed within the project facility, and the*

	carbon content of that fuel *The monitoring data will be submitted by each CPA proponent to the CME, which will store the data in an electronic database. Primary data will be stored by the implementing entities.* *The CPA Proponent will own, install, operate and maintain and regularly calibrate meters required for monitoring of the CPA.* *Monitoring data will be archived electronically and stored by the CPA Proponent for two years following the end of the CPA crediting period to which it applies. The CPA Proponent will also provide the CME with copies of calibration certificates as required for ensuring the accuracy of metered data.* *The CPA Proponent will own the CERs generated and issued as a result of its CPA.*
Role, Responsibilities and Rights of Service Providers	*Describe in detail obligations, tasks and entitlements that arise for Service Providers under the Program in the fields of i.a. provision and dissemination of technology, training, distribution, monitoring, financing, operation, maintenance, CDM development and CER sales.* *N.A.*
Number of Activity Implementers during the Program's start phase	*2*
Target number of Activity Implementers during the Program's lifetime	*As many as can be sourced form the Republic of Trinidad and Tobago and other oil producing Non-Annex 1 Host Countries*
Ownership of CERs	*CERs will be owned by each CPA proponent with a share paid to Petrotrin as the owner of the PoA according to a pre-agreed schedule*
Distribution of CER income	*CERs will be owned by each CPA proponent with a share paid to Petrotrin as the owner of the PoA according to a pre-agreed schedule*
Monitoring	*The Owner of the CPA will be responsible for the monitoring while the CME will carry out due diligence to ensure that the monitoring is properly carried out.*
Sampling	*N.A.*
Finance	*Each CPA owner will be responsible for financing its own project*
Dissemination of technology	*Many of the technology will be imported to the host countries of this project*
Maintenance	*Each CPA proponent will be responsible for the maintenance of its project*
EXPECTED SCHEDULE	
Earliest Program start date	*Year in which the initial activities under the Program will be operational* *2013*
Estimate of time required for the Program and initial activities before becoming operational after approval of the PIN	Time required for financial commitments: _16_ months Time required for legal matters: _6_ months Time required for construction: _8_ months
Expected first year of CER/VER delivery	2015
Timeline for inclusion of CDM Program Activities (CPAs)	Total number of CPAs Year 1: _1__

	Total number of CPAs Year 2: _2__ Total number of CPAs Year 3: _To be Determined__
Program lifetime	*28 years unless limited by the framework established by the Managing Entity*
Expected Crediting Period for CDM Program Activities (CPA)	*7 years twice renewable*
Current implementation status or phase of the Program	*Project Development Reports available at Petrotrin*
Current CDM status or phase of the Program	*Multiple choices possible: Conceptual phase/ Design Documents (DDs) under preparation*
Current status of acceptance of the Host Country	*Letter of No Objection/Endorsement is under discussion; Letter of Approval is under discussion*

D. EMISSION REDUCTIONS AND CDM SPECIFIC INFORMATION

ESTIMATE OF GREENHOUSE GASES ABATED

Type of GHG abated: *Methane (CH4), Ethane(C2H2), Propane (C3H8), Butane (C4H10), Carbon Dioxide (CO2).*

Estimate of GHG abated by the Program

The estimate of GHG abated by the Program in the table below is for the first CPA identified by Petrotrin. As more CPA is added to the PoA the annual estimate is expected to increase. It is the plan of Petrotrin to build this annual estimate to at least about 400,000 t CO2eq.

Years	*Annual estimation of emission reductions in tonnes of tCO_2-eq*
2013	15,198.54
2014	30,397.08
2015	30,397.08
2016	30,397.08
2017	30,397.08
2018	30,397.08
2019	30,397.08
2020	30,397.08
2021	30,397.08
2022	30,397.08
Total emission reductions over 10 years (tonnes of CO_2-eq)	273,573.72
Up to and including 2012 (tonnes of CO_2-eq)	273,573.72
Annual average over 10 years (tonnes of CO_2-eq)	27,357.37

Estimate of GHG abated by an average CDM Program Activity: *If CPA size varies significantly in terms of emission reductions please specify for each CPA size*

(CPA) (tonnes of CO_2-eq/year)	. *For this average CPA, a list of fields bundled as CPA-1 has been used as an example in this section. Using emission reduction calculations following AM0009 methodology, it has been estimated that an annual ER of the 27,357.37* tonnes of CO_2-eq/year can be achieved.
Estimate of GHG abated by a single unit/activity implemented as part of a CPA (tonnes of CO_2-eq/year)	*N.A.*
DEFINITION OF CDM PROGRAMME ACTIVITIES (CPAs) *CPAs are the "projects" that are included under a Program (PoA). A CPA can be any single activity (e.g. industrial plant) or set of activities (e.g. a number of energy efficient appliances) to which a CDM methodology can be applied as if it was a regular CDM Project. How CPAs under a Program are defined is crucial to its viability. E.g. if under a Program energy efficient CFL lamps are distributed a CPA could be either defined as (a) a single CFL lamp, (b) all CFL lamps distributed in one region, (c) all CFL lamps distributed in one region in one year, (d) 20.000 CFL lamps, etc.*	
Spatial extent of a CPA	*Indicate the geographic boundaries of a CPA (e.g. country, state, region, single site)* Country: Trinidad and Tobago State: St. Patrick, Victoria and Mayaro Counties, Trinidad W.I. *The sites of the CPA:* Grande Ravine, Parry lands, Fyzabad, Erin, Barracpore, Palaseco South, Palo Seco North, Benneth Village, Quarry, Apex Quarry, Coora, Wilson, Penal, Guagyaguayare, Balata, Catshill, Antillies Trinity, Inniss, Los Bajos and Palo Seco Trinity fields
Time extent of a CPA	*It is expected that construction of the first CPA will commence in 2013 and the project commissioned by mid-2013.*
Other characteristics	*CPAs will include: vent-out projects implemented by Petrotrin in its onshore/offshore fields; vent-out and flare-out project activities implemented in non-Petrotrin fields within Trinidad and Tobago, and vent-out and flare-out project activities sourced from outside Trinidad and Tobago.*
METHODOLOGY	
CPA baseline scenario	Plausible alternative baseline scenarios for the associated gas from the project oil wells include, *inter alia*: Option 1. Continue venting associated gas into the atmosphere. This methodology would result in the continuation of GHG emissions into the atmosphere which conflicts with the company new strategic objective of an improved health, safety and environment culture. Option 2. Flare recovered gas at the oil production site. In this process the waste gas is flared or burnt which results in the conversion of methane to CO2 inter alia, which is then released into the atmosphere. This methodology is less effective at reducing GHG emission from waste gas as it results in the production of increased volumes of CO2 which is also a GHG. Therefore while this method will result is a reduction of GHG the reduction will be smaller than that proposed by the utilization of the gas.

	Option 3. Inject waste gas into oil reservoirs for enhanced oil recovery (EOR). This technology is not thoroughly proven, and has also been found to be significantly more expensive and less efficient than other methods of EOR. Pertinently the net effect on GHG emission is also uncertain in this option as EOR activity generally increases GHG emissions from the combustion of increased crude oil. Option 4. On-site use of the partial amount of associated gas and/or gas-lift gas to meet on-site energy and rest of the gas are either vented (Opt2) or flared (Opt3). This methodology would require the construction of a processing plant to purify the gas to the company plants standards. This is option is not economical given the small volume of gas recoverable and also has the potential to result in a higher level of environmental disturbance than the proposed method, due to the construction of the new processing facilities. Option 5. Construction of a processing plant for the purpose of processing the recovered gas, in the same way as in the project activity, without being registered as a CDM project activity. This option is also not economical due to the small volume of gas, increased capital requirement and reduce revenue stream from CERs forgone. Further, it is also less attractive due to its potential for increasing the level of environmental disturbance. Option 6. The proposed project activity without being registered as a CDM project activity. The recovery and utilization of waste gas from Petrotrin onshore fields without CDM registration is a commercially unviable project. The large dispersion of many small fields makes this project highly capital intensive and the small volume of gas recovered makes the project unprofitable on its own. Given that company requires at the minimum positive NPV for investment this project would not be implemented without the consideration of CER revenue stream which, makes the project financial feasible. *How does the implementation of the activities lead to the reduction of emissions?* *By capturing associated gases that would have been vented and injecting it into pipelines to transport it to end users, emissions from venting (and flaring where applicable) will be avoided.* *If the activities make use of natural resources/commodities/wastes , how would these have been used or disposed of in the absence of the CPA/Program?* *N.A.*
CPA Baseline methodology	An individual CPA (i) is covered by the existing approved CDM Methodology or Approved CDM Small-Scale Methodology : AM0009/AM0077/AM0037 (ii) needs a new methodology: NO

	(iii) needs modification of the existing Approved CDM Methodology: NO
Project Emissions and Leakage	*Will the implementation of activities under a CPA lead to an increase in GHG emissions in the vicinity of the activities or at another site? (e.g. biomass residues that are used for electricity generation under a CPA might have been used for cooking by households who after implementation of the CPA would have to use wood, coal or kerosene)* *NO*
Suppressed Demand	*Will the level of service provided by the activities of a CPA exceed the service provided to the users in the "business-as-usual"? To what extent? (e.g. the dissemination of efficient cooking stoves might not result in reduced fuel consumption but rather in more cooking)* *NO*
ADDITIONALITY	
Sector Background	Trinidad and Tobago environmental laws do not prohibit the venting of waste gas in oil production activity. Therefore recovering and utilizing associated gas is not an obligation for the company. Thus given the pressing nature of core business activity, this unconventional project would remain a low priority item. *Please in particular explain if the project is running under a public incentive scheme (e.g. preferential tariffs, grants, Official Development Assistance) or is required by law. If CPAs/activities under the Program are already in operation, please describe if incentives provided by the Program were considered in activity planning.* *No public incentive scheme is included in this project.*
Program additionality	*Specify why literal (i) is applicable to the Program. For literal (ii) specify why either of literals a. or b. is applicable.* *(ii) a is the applicable condition for this project.* *i. the proposed Program is a voluntary coordinated action;* *ii. the proposed Program is either* *a. implementing a voluntary coordinated action, that would not be implemented in the absence of the Program; or* *b. implementing a mandatory policy/regulation, that is not enforced. The Program will lead to a greater level of enforcement of the existing mandatory policy/regulation.*
CPA additionality	*Explain why a typical CPA would not have been implemented in the absence of the Program, considering either or both of the scenarios below.* *i. If the implementation of a CPA is directly facilitated by measures or support provided by the Program, specify why in the absence of these measures or support the CPA would not have been implemented.*

	Most of the oil wells in fields that included in the CPAs that are part of this POA are stranded wells. The cost of harnessing these fields are usually very exorbitant making such projects not to yield acceptable return on investment as a result usually not implemented. CDM carbon credits that will be earned from this POA will make this project to become a reality as extra income from the credits will make the project to be feasible. *ii. If the implementation of a CPA is indirectly facilitated through monetary CDM benefits obtained from the Program, specify the improvement of financial indicators for a CPA thanks to the additional revenues. Also explain why without the additional revenues the CPA would not be attractive.* *N.A.*

E. FINANCE

COST AND REVENUES	
Program development costs	0.65MM USD *(studies, preparations, legal, consultancy, etc.)*
Annual program costs	20,000 USD *(staff, facilities, consultancy, etc.)*
Annual non-CDM program revenues (gas sales)	17.325MM *(revenues other than CER sales)*
Investment/implementation costs per activity/unit	134MM USD based on very preliminary estimates
Annual operation and maintenance costs per activity/unit	1.63MM USD
Annual non-CDM revenues or savings per activity/unit	N/A
Total project costs	134MM USD –based on very preliminary estimates *(= Program development costs + annual program costs * #years + investment per activity/unit * #activities/units + annual O&M costs per activity/unit * #years)*
SOURCES OF FINANCE TO BE SOUGHT OR ALREADY IDENTIFIED	
Equity	*Not currently available*
Debt – Long-term	*Not currently available*
Debt – Short term	*Not currently available*
Subsidies and international donor support	*Not currently available*
CARBON REVENUES	
Indicative price per CER	_3.50 USD/CER
Carbon finance advance payments sought	_N.A.__ USD
Annual carbon revenues	106,389.50 USD (This is an estimate for the first CPA already identified by

	Petrotrin. The annual revenue estimates will increase as more CPAs are added to the PoA.

F. EXPECTED ENVIRONMENTAL AND SOCIAL BENEFITS

SOCIO-ECONOMIC ASPECTS	
General social and economic effects	The recovery and utilization of waste gas from PETROTRIN land oil fields will contribute significantly to Trinidad and Tobago's goal of sustainable development in a number of ways including: ▪ Reducing consumption of exhaustible gas resource by switching a portion of present supplies with captured waste gas, thus conserving conventional supplies or ▪ Increasing foreign exchange earnings where conventional sources are still produced but exported ▪ Increasing national income (GDP) due to increased gas sales volumes (certeris paribus) ▪ Providing employment both temporary and permanent during the installation and operation of the recovery system ▪ Expanding technological innovation as this project will be the first gas recovery system ever installed in the company. ▪ Building CDM development capacity as this would be the first CDM to be registered in the small twin island developing state. ▪ Reducing atmospheric pollution as seen in Annex 2 the project is anticipated to remove a total of 7.8MM tons of CO2e over its 21-year life .
What are the possible direct effects?	*e.g. employment creation, provision of capital required, foreign exchange effects* *As indicated in the above the project will* ▪ provide employment both temporary and permanent during the installation and operation of the recovery system ▪ Increase foreign exchange earnings where conventional sources are still produced but exported ▪ Increase national income (GDP) due to increased gas sales volumes (certeris paribus)
What are the possible other effects?	*e.g. training/education associated with the introduction of new processes, technologies and products and/or the effects of a Program on other industries* It is expected that the introduction of the new technologies will open an opportunity of acquiring know knowledge through on job as well as formal training.
ENVIRONMENTAL ASPECTS	
Local environmental benefits	*E.g. impacts on local air, water and other pollution.* The project activity reduces the current emissions from the existing site by reducing the gas flared. Local pollution is reduced to the degree particulates were released into the atmosphere by gas flaring (albeit this was low in the

	base case since the facility already had smokeless flares.) There are no transboundary impacts. The overwhelming environmental impact is global from the reduction in GHG emissions.
Consistency with the environmental strategy and priorities of the Host Country(ies)	*Brief description of the environmental strategy of the host country(ies) and the Programs contribution towards them.* *The project activity is inline with the National Climate Change Policy issued in July 2011 by the Government of the Republic of Trinidad and Tobago.*

G. RISK ASSESSMENT

TECHNOLOGICAL RISKS	
What are the risks of the Program technology?	*There are no technological risks as the result of the introduction of the technology.*
How are the identified risks valued?	*N.A.*
What mitigation strategies are envisaged?	*N.A.*
FINANCIAL RISKS	
What are the risks for financing the program and earning the expected revenues?	- Funding for the full implementation of project may not be obtained.
How are the identified risks valued?	*High*
What mitigation strategies are envisaged?	1. *Varying project scale.* 2. *Staggered implementation* 3. *External funding source*
CDM RISKS	
What are the risks for successful registration and issuance of CERs of the program under the CDM?	*What risks are associated to the:* - *Determination and proof of the baseline* - *proof of additionality* - *monitoring procedure* - *application of the PoA scheme?* *No Risks associated with the CDM Process beyond having a validated PoA-DD and the first CPA-DD submitted to the UNFCCC on or before December 31st 2012 is envisaged.*
How are the identified risks valued?	*Provide a qualitative assessment of the risks.* *The Consulting team working on developing the PoA-DD and the CPA-DD for the first CPA is working on the preparation of these documents with a plan to complete the pre-validation documents before the end of July 2012. The team is also in firm discussion with DOEs one of who will carry out the validation of the project starting in early August 2012 and submitting the validated document with their validation report on or before November 15 2012.*

What mitigation strategies are envisaged?	*How do you plan to control the identified risks?* *By ensuring that all the aspects of work listed in the last paragraph are carried out in a timely fashion.*