



OIL, GAS, MINING AND CHEMICALS DEPARTMENT

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UNFCCC Secretariat
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Subject: CDM EB call for inputs on the reasons for no or low application of approved methodologies in CDM projects

Dear CDM Executive Board Members,

The O&G CDM/JI Methodology Workgroup¹, including 21 entities and organizations with operational experience in the exploration and production of oil and gas sector and development of CDM and JI projects, welcomes the opportunity to respond to this call for input on the reasons for no or low application of approved methodologies in CDM projects.

We hope that the input that we are bringing to your attention is taken into consideration and effectively help improve the application of methodologies related to gas flaring reduction.

Thank you for your consideration.

Sincerely yours,

for Bent R. Svensson
Program Manager
Global Gas Flaring Reduction Partnership
Oil, Gas, Mining and Chemicals Department
World Bank Group



(Francisco J. Suarez)

Attachment: Annex on 5 pages.

¹ The Oil & Gas CDM/JI Methodology Workgroup coordinated by the public-private World Bank-led Global Gas Flaring Reduction (GGFR) Partnership, aimed at facilitating collaboration on technical issues related to oil and gas sector CDM/JI projects. Current members of the workgroup include: Carbon Limits, Carbon Counts, Chevron, Clearstone Engineering, ConocoPhillips, Ecosecurities, ERM, Gas Techno, General Electric, MGM, US EPA M2M, Masdar, MGM Int., Petroamazonas, Qatar Petroleum, Repsol/YPF, Sindicatum Carbon Capital, StatoilHydro, Total, Verdeo Group, and World Bank Carbon Finance Unit.

July 7, 2009

Submission on behalf of the Workgroup
 CDM EB call for inputs on the reasons for no or low application
 of approved methodologies in CDM projects

Background

The Oil & Gas CDM/JI Methodology Workgroup¹ (“Workgroup”) including 21 entities and organizations with operational experience in the exploration and production of oil and gas sector and development of CDM and JI projects, welcomes the opportunity to respond to this call for input on the reasons for no or low application of approved methodologies in CDM projects.

This submission reflects a general view of the Workgroup but does not necessarily represent the views of individual members. Carbon Limits and Sindicatum Carbon Capital are the main authors of this submission that is largely based on the outcome of the consultation process prior to the establishment of the Workgroup.

Currently, oil and gas investments are radically underrepresented in the CDM pipeline with CERs issued only for two projects. At the same time, gas flaring continues to contribute 400 MtCO₂e/year to the GHG emissions.

This submission focuses on the methodologies in the scope 4 *Fugitive emissions* presented in the table 1.

Table 1 – Approved CDM methodologies related to gas flare reduction.

AM	Applicability			Number of project applications	Potential for application in current version
	Sources of gas that can be recovered	Infrastructure investments	End-uses of recovered gas		
AM0009 version 04	Gas from oil wells (incl. gas-lift gas)	Pipelines, compressors, processing plant, utilities	Energy purposes (combusted), existing market/users	7	Medium
AM0037 version 02.1	AG from oil wells (not incl. gas-lift gas)	Pipelines, treatment, potentially a new facility	Production of useful product (feedstock)	3	Very low
AM0055 version 01	Waste gas (any)	Pipelines, treatment, utilities	On-site energy	0	High
AM0074 version 01	Permeate gas from membrane processing of natural gas	Pipelines, treatment, compressors, utilities	New gas fired power plant	0	Very low
AM0077 version 01	AG from oil wells (incl. gas-lift without procedures)	Pipelines, compressors, CNG related infrastructure	Delivery of CNG for heat generation at specific end-users	0	Low
ACM0012 version 03.2	Waste gas (any)	Pipes and utilities	On-site energy (heat or power)	Limited	High

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Barrier assessment and suggestions for improvements

Barrier #1. Project-specific bottom-up approach to methodology development leads to narrow applicability of individual methodologies.

The current CDM rules specify that new baseline methodologies must be submitted with a draft PDD, meaning that methodologies are developed “bottom-up” based on specific projects submitted by project proponents as opposed to the standardized top-down approach. As a result, the process has a natural bias that tends to result in the selection of methodologies with narrow applicability², notably in terms of case-specific approaches to define conservativeness.

Existing Methodologies are Too Narrowly Defined: Typical gas flare reduction projects occur in a complex environment, often within a large brownfield oil and gas field development (see Box 1). As a result, the narrowly defined methodologies can rarely be applied to more than a very few projects since to date no methodology has been general enough to accommodate the variety of site specific characteristics of several Oil & Gas (O&G) projects.

BOX 1. ILLUSTRATION OF THE OIL AND GAS PROJECTS COMPLEXITY.

To illustrate the complexity of gas flaring projects, one can consider the potential sources of flared gas and typical end-uses of recovered gas. Based on input from operators and practical field experience, there are at least five to six types of sources of gas that are often flared on a continuous basis as a result of O&G production.

The number of potential end-uses (and technology options) is even larger, ranging from energy production, feedstock for petrochemical production, international marketing as Liquid Natural Gas (LNG) or Compressed Natural Gas (CNG), Gas-to-Liquids (GTL) production, re-injection for future use, etc.

As a typical investment case comprises one source of flared gas and its recovery for one specific end-use, the number of alternative investment cases is very large.

One of the key challenges with the approved CDM methodologies related to gas flare reductions have been the limited number of real industry investment cases covered by these methodologies.

Existing Methodologies provide Limited Coverage of Alternative Treatments or Project Emission Determination: The existing O&G methodologies do not provide guidance and/or present ambiguity in the following areas:

- Procedures for calculating emissions associated with operation of shared facilities;
- Changes in energy provision at existing facilities (i.e. switching from wet gas to dry gas for energy provision in existing facilities);
- Treatment of fugitive emissions and leakages from accidental events are inconsistent between methodologies; and

² The current version of AM0037 is e.g. designed to facilitate recovery of associated gas from oil wells for direct utilization as a feedstock in production of a useful product.

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- Common options for pre-treatment, handling and processing of gas is covered by one or more approved methodologies, but there are still important gaps (e.g. treatment of liquid/condensate extraction as a normal part of gas recovery and use).

Recommendations for Improving O&G Methodologies: The two recommendations below are formulated on the understanding of three important “components” of typical gas flare elimination activities:

- (i) Sources of gas that can be recovered and marketed;
- (ii) Treatment of gas and determination of project emissions; and
- (iii) Uses of recovered gas that would otherwise be flared.

Suggestion #1. Consider opportunities to develop one or more consolidated methodologies for gas flare reductions encompassing an expanded number of realistic gas value-chain configurations as opposed to continuous development of specific methodologies with relatively limited applicability. Such configurations could include:

- multiple combinations of source(s) of flared gas that can be recovered;
- more flexibility to include diverse technological options for the treatment of recovered gas;
- a more encompassing definition sources of gas, as long as it can be clearly demonstrated:
(i) that the volume and characteristic of recovered gas is unaffected by the project activity; and (ii) that the gas has physical properties that are suitable for the applicable end-use(s).

Suggestion #2. Consider a potential for expansion of applicability of existing methodologies by re-use/consolidation of “best-practice” modules from other methodologies.

Barrier #2. High regulatory risks related to the carbon revenues from oil and gas CDM projects.

O&G Operators increasingly Reluctant to Develop CDM Projects: The limited number of successful CDM projects within the O&G sector and the continued low perceived reality and reliability of CDM related revenues is one of the key reasons why several clearly additional gas flaring reduction activities projects were never brought forward under the CDM framework (even for projects with prepared PDDs). The long lead times of gas flaring reduction projects and high investment intensity indicate that the application of these methodologies might continue to be relatively low during the first Kyoto period. Furthermore, the reluctance is also due to other important uncertainties such as the perspectives of the CERs market post-2012.

Restricted Access to Sectoral Expertise by Designated Operational Entities (DOEs) and Methodology Panel (MP): The negative experiences associated with the rigid interpretation of the CDM methodologies for complex project cases by DOEs and MP with limited access to sectoral experts have led to reduced efforts related to CDM development. In particular, a number of the important issues related to handling of recovered gas and determination of project related emissions were not clearly specified in the methodologies and were often subject of case-by-case discussions with DOEs.

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Suggestion #3. The inclusion of the improved approaches and guidelines/references to the established best operational and quality assurance/quality control practices of O&G industry, in the methodologies to reduce the dependency on individual experiences and judgments. The Workgroup is planning to develop the three main relevant technical contributions in line with this suggestion:

- *Technical specifications* for expansion of applicability of approved flare methodologies and facilitate the understanding of the key “components” of typical gas flare elimination activities (i.e. sources, treatment and end-uses of recovered gas);
- An *O&G CDM Glossary of Terms* to help eliminate inconsistencies in the use of O&G terms; and
- *CDM O&G Monitoring Guidelines* on the basis of best industry practice to provide references on appropriate ways of monitoring emission reductions, as required in the methodologies, and help operators with limited experience with gas marketing adhere to the requirements of the CDM.

Barrier #3. Limited coverage of end-use options for the recovered gas

Another key limitation for real world application is the limited coverage of end-use options in approved CDM methodologies related to gas flare elimination. The following end-uses of recovered gas are currently not covered explicitly in any approved gas flare related methodology:

- Small-scale or regular LNG production with international marketing and use;
- Transportation of Compressed Natural Gas (CNG) for delivery into a nearby gas system/grid;
- Gas-to-Liquids (GTL);
- Re-injection of gas for storage until a market develops;
- Use for energy purposes in a new facility within an undeveloped market³.

Suggestion #4. By carefully expanding the applicability of the approved methodologies with respect to applicable end-uses of gas, their potential application can be greatly improved.

Barrier #4. Monitoring requirements with regard to energy substitution demonstration.

A common challenge for all end-use scenarios is to find a conservative approach for determining the GHG impacts at the end-user(s) that maintains the monitoring costs at practicable levels and prevent the barrier of contractual complexity among related parties. For instance, the extensive

³ If it can be clearly demonstrated that more carbon-intensive fuel would be used to respond to the same additional energy needs of the new facility.

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end-use monitoring requirements of AM0037 and AM0077 are expected to greatly limit practicable applicability of these methodologies.

The history of some methodologies related to flare elimination shows that, the original focus was primarily the sources of recovered gas and the emission impact from avoided flaring (e.g. AM0009). As the CDM has evolved and methodologies have been developed and improved, the focus has shifted away from the avoided emissions at the point of flaring (which is theoretically best viewed as an improved efficiency in the upstream sectors that allow energy products to be delivered with less carbon emissions) to the avoided emissions occurring at the end-users. This is an important conceptual shift and should be undertaken with caution. An implication of this is that the emission impact from flaring elimination activities primarily is dependent on the baseline scenario for the production of useful products (e.g. electricity, ammonia, etc.) or services.

While the reduction of gas flaring and correspondent emissions in the upstream is explicit and transparent, focusing monitoring effort on end users may create a significant additional burden to the project proponents. It is often not practicable to identify with certainty the final destination of the useful products recovered from flared gas during the lifetime of the project. In other cases, correspondent monitoring requirements would lead to extremely high transaction costs.

Suggestion #5. It is suggested that simplified approaches should be developed and implemented as applicable e.g. reducing the burden on each project developer by developing default emission factors to be applied for specific end-uses in specific regions. Such approaches could best be developed after informal consultations with the O&G operators e.g. through the O&G CDM/JI Methodology Workgroup. This would ensure that monitoring approaches are practical and allows for the development of a common understanding of monitoring standards between the regulator and the regulated.