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National Greenhouse Accounts  
Department of Climate Change

Via email: [nationalgreenhouseaccounts@climatechange.gov.au](mailto:nationalgreenhouseaccounts@climatechange.gov.au)

To whom it may concern

**Invitation to provide submissions on the National Greenhouse and Energy Reporting (Measurement) Determination 2008**

The Australian Pipeline Industry Association (APIA) welcomes the opportunity to provide input to the Department of Climate Change's (DCC) *National Greenhouse and Energy Reporting (Measurement) Determination 2008* consultations.

Many gas transmission pipelines exceed the facility level emission threshold set out for mandatory reporting. Through their experience in preparing these reports, all gas transmission companies have serious doubts about the methodologies set out for fugitive emissions from gas transmission pipelines. The methodologies are in Division 3.3.7 of the *National Greenhouse and Energy Reporting System (Measurement) Determination 2008*. Primarily, both methodologies produce unrealistic results which are higher than observed for the majority of gas transmission pipelines.

This industry's concerns are set out in the attached submission. We look forward to working with DCC to improve the methodologies for the determination of fugitive emissions from gas transmission pipelines.

It is critical for our industry that this matter is addressed as soon as possible. If you have any questions or require further information please contact APIA's Policy Advisor Steve Davies on (02) 6273 0577.

Yours sincerely



CHERYL CARTWRIGHT  
Chief Executive



## **The Australian Pipeline Industry Association's Submission on the National Greenhouse and Energy Reporting Determination 2008**

### **Introduction**

The Australian Pipeline Industry Association (APIA) welcomes the opportunity to provide input to the Department of Climate Change's (DCC) National Greenhouse and Energy Reporting (Measurement) Determination 2008 consultations.

APIA is the peak national body representing the interests of Australia's long-distance transmission pipeline sector. APIA's current membership is predominantly involved in high-pressure gas transmission. APIA's members include contractors, owners, operators, advisers and engineering companies and suppliers of pipeline products and services.

APIA will use this opportunity to provide feedback on the gas transmission industry's experience gained and thoughts on the estimation methodologies specified in the Determination. The industry has now had some experience through the preparation of reports under the National Greenhouse and Energy Reporting (NGER) system in October 2009.

### **Combustion of Natural Gas**

The majority of emissions from a gas transmission pipeline are caused by the combustion of natural gas used to power compressors.

APIA members are satisfied that the methods provided for determining emissions from natural gas combustion are returning accurate results.

### **Fugitive Emissions**

Natural gas transmission pipelines are constructed to meet high standards and, essentially, do not leak. Fugitive emissions generally arise from the facilities associated with the pipeline such as compressor stations and regulator stations. Sources of fugitive emissions can be identified by the companies, in many cases estimated within an uncertainty of better than  $\pm 20\%$ , and these emissions

are reduced considerably by economic drivers. Releases of gas from maintenance works can also be estimated with a reasonable degree of uncertainty.

Gas transmission companies have found that the results from using the methods provided in Division 3.3.7 of the *NGER (Measurement) Determination 2008* are significantly higher than observed emissions.

### Method 1

Method 1 applies a common factor of 8.72 tonnes CO<sub>2</sub>-e per kilometre of pipeline (8.7 from methane and 0.02 from carbon dioxide).

Length is the only variable in method 1. Several other key variables that will have a significant impact on fugitive emissions from a pipeline include: diameter, throughput, number of compressors/regulators and maximum allowable operating pressure.

A pipeline with no compressor stations and few regulator stations is treated as if it is the same as a pipeline with several compressor stations and many regulator stations, even though emissions output will be significantly different. Pipelines of the same length but different throughputs are treated as if they are the same, although they would have different emissions levels.

Reports indicate that, for a pipeline with an average number of compressor and regulator stations, Method 1 is producing reasonably accurate results. However, every pipeline is unique and very few fit an 'average' profile. For some major pipelines, APIA is aware that Method 1 is producing emissions figures to 8 times greater than observed emissions.

Despite this, Method 1 is producing more accurate results than is Method 2.

### Method 2

Method 2 uses emission factors (EF) for different items of equipment which comprise the transmission system and for different activities performed on the system. These include:

- An EF for each compressor station based on the number of hours in the year that the station has been present;
- An EF for each hour that a compressor has operated;
- An EF based on the kilometres of transmission pipeline multiplied by the number of hours in the year the pipeline was present ;
- An EF based on the number of regulator stations; and
- An EF for maintenance activities based on the number of kilometres of pipeline.

Gas transmission companies have found that Method 2 produces inaccurate results. Method 2 calculations are producing results ranging up to 15 times greater than observed emissions.

Some of the reasons for these discrepancies are:

- The assumption that non-routine activities, such as pipeline repairs, pigging operations and gas compression station blowdowns occur frequently. As an example, pigging operations are typically conducted on a pipeline once every 5 to 8 years (depending on the age of a pipeline).
- The assumption that maintenance activities are conducted over the entire pipeline each year. Maintenance activities are conducted only on certain sections of a pipeline each year.

Emissions from these activities can be calculated accurately according to the type (pigging, repairs, etc) of maintenance undertaken.

## Emissions Reduction

The current methods do not recognise the positive impact of design and planning in emissions reduction. Gas transmission companies must be confident they will benefit if committing time and resources to implement emissions reduction technologies and activities.

## Measurement of Gas

Section 2.31 of the *NGER (Measurement) Determination 2008* provides for the Direct Measurement of Gaseous Fuels at the Point of Consumption (Criteria AAA).

Section 2.32 of the Determination further specifies that the measurement of gases should be undertaken by volumetric measurement.

APIA believes that this requirement is overly prescriptive and the Determination should allow for alternative metering methods including mass based metering. Mass based metering on natural gas transmission pipelines is undertaken to stringent, internationally recognised, standards such as the American Gas Association's AGA 11, and fully complies with the intent and accuracy requirements detailed in the Determination. In light of this, the Determination should be changed to recognize and allow for these alternative metering methods or, preferably, be less prescriptive in favour of industry-proven metering systems to a maximum allowable uncertainty.

## Recommendation

APIA considers Method 2 to be significantly flawed such that it is unlikely to be used by any gas transmission company.

A third method, or a replacement method, should be developed where other calculations or observations of emissions can be performed for various contributors if they can be justified within an appropriate uncertainty. However, it is likely to be appropriate to continue using the existing Method 2 factors for some sources where emissions are too difficult to measure or the results are easily verifiable as accurate.

**At a minimum, APIA considers that Method 2 needs to be revised to mitigate the discrepancies detailed above, particularly in relation to maintenance activities.**

Additionally, APIA considers Section 2.32 of the *NGER (Measurement) Determination* should be amended to allow for volumetric and mass based measurement of gaseous fuels.

APIA and associated gas transmission companies would appreciate the opportunity to discuss these issues further with the Department so that more appropriate estimation methodologies can be developed.