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Response to request for comments on DIICCSRTE, Technical Discussion Paper, April 2013:

“Coal Seam Gas: Enhanced Estimation and Reporting of Fugitive Greenhouse Gas Emissions under the National Greenhouse and Energy Reporting (Measurement) Determination”.

Introduction

The technical discussion paper and associated references articulate well the issues behind methane emissions estimations. The Department should be recognised for the quality of this consultation process and the documentation in this complex area.

The paper also indicates that the Department plans to let a tender related to developing field methodologies for “diffuse emissions”. This is a very welcome development as estimates of the broader methane generation and emissions profile from a number of possible natural and anthropogenic features, events and processes remain, in effect, unconstrained or even not-estimated. Focus should not specifically be on “diffuse” emissions *sensu stricto*, but also on a number of more localised features such as faults, outcrops or legacy coal exploration wells, which in the presence of any process of aquifer depressurisation may add to the methane emissions detected.

Overview

The discussion paper and supporting referenced literature highlights (i) that there is a paucity of actual, measured emissions data – none in Australia, (ii) that there are wide differences between published estimates – mostly from the USA, and (iii) there are significant differences between top-down and bottom-up approaches.

The paper outlined a joint CSIRO/DIICCSRTE study, which aims to improve the quality of bottom-up approaches. The work to sample around 30 wells, is ongoing and expected to be complete by end 2013. This study will measure well-head emissions from a variety of wells, including some which have been hydraulically fractured.

The discussion paper proposes two enhancements to NGER estimation methods:-

1. Refinement of methods for the direct measurement of vented fugitive emissions associated with CSG well completions and workovers.
2. Mandating use of direct measurement for vented fugitive emissions from CSG well completions and workovers with fracking

Recommendation

Detailed consideration on both Proposal 1, Part 2 (well sampling patterns/rates) and Proposal 2 (whether to mandate measurements of fugitives on all fracked wells) in essence require an exercise in judgement about (i) the scale and variability of fugitive rates across a very large population of CSG wells; and, (ii) the relative increase in risk of additional emissions which might be associated with fracturing operations, *in an Australian CSG setting*. Such judgements would be required in the absence of any local measured data.

While, the proposed changes appear reasonable in principle, they are perhaps premature and, given that there is still some time before the main phases of gas production and export, they could be better informed after a slightly extended CSIRO/DIICCSRTE data collection and well sampling study.

It is therefore recommended that the ongoing CSIRO/ DIICCSRTE well sampling work should be extended. An extended study should still aim for an interim result based on 30 wells at end 2013, however, more wells (say up to 100 in total) should be sampled to build a more statistically robust data-set and to better understand range, variability, frequency of occurrence and hence risk. In addition, field measurements and sampling should also be made to cover a number (say 10) of well completions and work-overs after hydraulic fracturing operations in typical Australian operations.

Sincerely

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