**Senate Standing Committee on Environment and Communications**
**Legislation Committee**
Answers to questions on notice
**Environment portfolio**

**Question No**: 171

**Hearing**: Budget Estimates

**Outcome**: Outcome 2

**Programme**: Climate Change and Renewable Energy (CCARE)

**Topic**: NGERS and coal seam gas

**Hansard Page**:

**Question Date**:

**Question Type**: Written

**Senator Waters asked:**

1. In a news article that surfaced on early May this year (http://www.smh.com.au/environment/climate-change/flawed-methane-monitor-underestimates-leaks-at-us-oil-and-gas-sites-20150506-ggvuj5.html) about a US study which found potentially very serious flaws in a very commonly used piece of equipment used to measure the level of methane gas emissions from gas wells in the CSG and shale gas industries. The equipment is called a "Bacharach". Are you aware of that study?

2. Quote from the SMH article in May 2015: "In one instance, the authors found that two separate Bacharach samplers recorded natural gas concentrations in the air of 1 to 6 per cent, when the actual concentrations were between 7 and 73 per cent" – do you know whether that equipment is widely used in Australia?

3. Does this have any implications for the way methane is measured under the NGER methodologies applicable to oil and gas in Australia?

4. Please give an estimate of how many tonnes of methane emissions are determined by direct measurements which could be ascertained using a device such as this.

**Answer:**

1. Yes.

2. In Australia, the CSIRO has not used a Bacharach instrument in its CSG-related methane emission studies conducted for the Department. Measurements were made using a Picarro analyser, which is commonly used by other researchers in Australia and elsewhere. The calibration was checked regularly during the field work.

3. There are no implications for the measurement of methane leaks under NGERs from the reported US study. CSIRO advice is that Bacharach instruments are used to measure leakage rates. Currently, under NGERs, reporters are required to estimate leakage rates through the application of emission factor based methods, as set out in Division 3.3.6 of the NGER Measurement Determination, rather than through direct measurements.

4. See (3) above. NGER reporters use emission factor based methods rather than direct measurement for methane leakage emission estimation.