



Australian Government
**National Measurement
Institute**

Ms Clare Walsh

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Dear Ms Walsh,

I am the Chief Executive and Chief Metrologist of the National Measurement Institute (NMI), a division of the Department of Innovation, Industry, Science and Research. I am writing with regard to NMI's capacity to assist your implementation of the National Greenhouse and Energy Reporting System (NGER) *Regulations and Technical Guidelines*, currently awaiting public comment. We have considered both documents and wish to raise several important issues for implementing the NGER.

By way of introduction, NMI is administered under the *National Measurement Act 1960*, and is responsible for developing and maintaining Australia's national standards of measurement for physical, chemical, biological and legal metrology, and ensuring their international recognition. NMI provides advice and assistance to Government departments in relation to measurement, having great depth of understanding of the technical issues involved in most measurement fields, including those relevant to the NGER.

NMI staff attending *Regulations Policy Paper* consultation meetings noted your invitation for companies to take part in case studies at this early stage of NGER implementation. I wish to indicate NMI's firm interest in participating with you in case studies, especially where companies (Reporters) will be using higher-order methods of measurement to estimate their emissions. Establishing quality measurement systems and practice from the outset of the NGER process will be vital to achieve your aims of sufficiently accurate and internationally consistent measurements. I am also interested in developing NMI's knowledge base early in this new measurement field for Australia; it should significantly involve NMI, if overseas experience is any guide.

To explore with you this issue and others detailed in an attachment to this letter, I would welcome an opportunity to meet with you in Canberra at your earliest convenience.

Yours sincerely,

Dr Laurie Besley

Chief Executive and Chief Metrologist
National Measurement Institute

14 February 2008

NMI comments on the National Greenhouse and Energy Reporting System *Regulation Policy Paper* and *Technical Guidelines*.

Quality measurement systems necessarily underpin any reporting system where Reporters employ higher-order methods of measurement to estimate their emissions. National measurement institutes, such as the UK's National Physical Laboratory (NPL), provide practical measurement infrastructure and technical expertise to Reporters. This enables Reporters to implement systems that provide data whose accuracy and consistency meet international reporting requirements for emissions and carbon trading. NPL provides measurement support and research for the measurement of emissions of key greenhouse gases (GHGs), including high accuracy calibration standards of GHGs. NMI could have a similar role in Australia, but there appears to be little or no recognition of the need for quality measurement systems in the *Regulations* or the *Technical Guidelines*.

NGER *Technical Guidelines* are very broadly similar to the European Union (EU) Guidelines for the monitoring and reporting of greenhouse gas emissions (2007)(see Appendix 1 below) in scope and method. The *Technical Guidelines* are also broadly similar to the AS ISO 14064 series of Australian and International Standards, but do not appear to reference them at all, whereas the *Regulations* do reference the standard in relation to measurement requirements (*Regulations Policy Paper* section 7.2), but provide no further detail. The AS ISO 14064 series recognises the importance of quality measurement systems by stating that management procedures should consider the use, maintenance and calibration of measurement equipment, with regular accuracy checks (AS ISO 14064:1—2006¹, section 6.1.2); and that measuring and monitoring equipment should be calibrated according to current good practice (AS ISO 14064:2—2006 section 5.10)². In the same vein, the successful US Environmental Protection Authority's (EPA) Sulphur Dioxide Reductions and Allowance Trading scheme³ provides participants with guidance on measurement methods, protocols, requirements and standards. The detailed EPA manuals for participants indicate the real world complexity involved in taking meaningful measurements. The NGER documentation lacks a clear and upfront statement about the importance of providing confidence for higher-order methods through quality measurement systems.

Page 5 of the *Technical Guidelines Overview Document* states that comments are not sought on the verification of data through the *Technical Guidelines* consultation process, as this is being handled through the *Regulations* consultation process. The NGER *Regulations Policy Paper* deals with validation and verification at section 1.1.3, in terms of the requirements for external auditors, but not what they verify. The *Regulations* do not appear to cover issues such as the risks to effective verification and validation caused by inconsistent monitoring and the lack of calibration and maintenance of key process parameters and measurements. Management of these verification and validation risks is specifically noted in AS ISO 14064:3—2006⁴ (section A2.4.6.2), and may be worth including in the NGER documents in the context of quality measurement systems.

¹ AS ISO 14064:1—2006 Greenhouse gases - Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

² AS ISO 14064:2—2006 Greenhouse gases Part 2: Specification with guidance at the project level for quantification and reporting of greenhouse gas emission reductions and removal enhancements

³ <http://www.epa.gov/airmarkt/progsregs/arp/s02.html>

⁴ AS ISO 14064:3—2006 Greenhouse gases Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions

As written, the *Technical Guidelines* summarily deal with *Quality Control Processes* at section 1.5 (see Appendix 2 below) and with regard to fuel samples, at section 2.3.2 *Sampling and analysis of samples*. Reporters are not given detailed guidance on how to achieve quality measurements in practice through the use of accredited methods, calibration, testing by accredited laboratories, reference standards and documentary standards. Reporters must navigate through layers of documentary standards and manuals referenced in the *Technical Guidelines* to determine these details. This is a significant burden on business.

The EU emissions trading system has encountered significant problems because various member states have been unwilling or unable to collect accurate data, leading to doubtful or non-reporting for various nations. The success of NGER will be linked to the underlying measurements being correctly done with calibrated equipment that is operated, tested and maintained according to appropriate standards. Overseas experience suggests that Australian companies using higher-order methods will encounter many difficult technical issues. NMI is willing and able to cooperate with the Department of Climate Change, and industry, to facilitate the success of NGER through good measurement.

Appendix 1

*Extract from guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council (18 July 2007)*⁵

10.3.2. Quality Assurance

The operator shall ensure that relevant measuring equipment is calibrated, adjusted and checked at regular intervals including prior to use, and checked against measurement standards traceable to international measurement standards where available, in accordance with the risks identified according to 10.2. The operator shall identify in the monitoring plan if components of the measurement instrument cannot be calibrated, and propose alternative control activities, which need approval of the competent authority. When the equipment is found not to conform to requirements, the operator shall promptly take necessary remedial action. Records of the results of calibration and authentication shall be retained for the period of 10 years.

Appendix 2

Section 1.5 NGER Technical Guidelines

The Reporter should establish, document, implement and maintain an effective control system to ensure that its annual emissions report is not materially mis-stated and does not contain a material non-conformity.

⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:059:0001:0074:EN:PDF>