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Review of the NGER (Measurement) Determination  
Discussion Paper, August 2010  
Department of Climate Change and Energy Efficiency  
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Dear Sir/Madam

**Submission by the National Generators Forum on the Review of the NGER (Measurement) Determination – Discussion Paper – August 2010**

The National Generators Forum (NGF) welcomes the opportunity to make a submission on the NGER (Measurement) Determination Review Discussion Paper (the Discussion Paper). The NGF and its members are continuously engaged with the Department and the Greenhouse and Energy Data Officer (GEDO) on a range of outstanding NGERS issues. The NGF wishes to acknowledge the support of the Stakeholder Support and Audit Management Branch and GEDO staff in facilitating action on outstanding NGF members' issues. Responding to the Discussion Paper provides a further opportunity to comment on and consolidate some outstanding NGF issues.

The NGF represents the market-facing electricity generators in the National Electricity Market and the WA Electricity Market and thus represents businesses that have a very large stake in efficient and effective NGERS outcomes.

The Discussion Paper addresses many of the issues raised previously by NGF members and NGF members acknowledge the Department and GEDO's willingness to address the issues by providing proposed guidance for further comment. The NGF also welcomes the opportunity to provide feedback on any other topic relating to the application of the NGER (Measurement) Determination. Accordingly, the NGF response to the Discussion Paper is in two parts: the first part dealing with issues raised specifically in the Discussion Paper, and the second part dealing with some other outstanding issues of NGF members' concerns.

## **Discussion Paper issues**

The NGF notes that the Discussion Paper focuses exclusively on the (Measurement) Determination and that no amendments to the NGER Act or regulations are envisaged, although some minor amendments to the regulations may be necessary in light of the review process. The NGF also notes that the Discussion Paper reflects more than just an annual review of NGERS issues, although NGF members believe that, for instance, the Discussion Paper should not be considered a full 'five-year' review because only the first year of NGERS reporting has been completed and perhaps another two years of reporting is warranted before a full review takes place.

The NGF would also like to note that without the CPRS or similar instrument, the focus is shifting to accommodate the need of other agencies, including state agencies. The NGF urges great caution in moving forward with agencies as their demands may well be excessive and outside the scope of the NGER Act. In particular, one of the prime aims of the Act is to simplify reporting requirements on business and to cut excessive 'red tape'. Care is needed to ensure that the opposite does not occur. Already, NGERS requirements are so detailed and complex that specialised staff by NGF members' businesses are needed to deal with the growing list of convoluted reporting issues.

The NGF notes that any amendments to the (Measurement) Determination resulting from the review will not come into effect until the 2011/12 reporting period. NGF members welcome the opportunity to provide timely comment on the Discussion Paper but members find it challenging to give the issues their full attention due to the need to deal with 2009/10 reporting requirements simultaneously. The NGF urges the Department and GEDO to facilitate feedback on discussion papers outside of the reporting period wherever possible.

## **June 2010 amendments**

The Discussion Paper suggests that these amendments aimed to respond to feedback as a result of first year reporting as well as updating scope 2 emissions factors. NGF members wish to advise that in reality only a limited number of issues were addressed via these amendments, therefore placing even more significance on the current Discussion Paper.

## **Review within five years**

As stated above, the NGF considers that the review is based on only one year of NGERS reporting experience and that such a timeframe is inadequate to justify compliance with the five-year review period. NGF recommends a more thorough review of all aspects of NGERS activities and issues after 2010/11 reporting period, taking into account the experiences gained from three full years of reporting.

NGF members are concerned about some nuances related to USA EPA rules. USA EPA rules alluded to are significantly heavy-handed and apply to a much more litigious USA legal system. Australia would not be well served following such approaches without thorough assessment and NGF members recommend the value of a further and more in-depth assessment of the international developments in the energy and greenhouse gas reporting areas.

## **Default Method 1 factors**

The default Method 1 factors detailed in the Discussion Paper have little direct bearing on fossil fuel-based generators because Method 2 or higher must be used by NGF member businesses. Nevertheless, the NGF is pleased with the thoroughness in reviewing default values, particularly based on some first year reporting data, leading to the clear identification of the need to address the energy content factor for black coal and the methane factor for liquid fuels. NGF concurs with the required amendments to such factors.

Although the solid fuel listing in the (Measurement) Determination Schedule 1, Part 1 is adequate for most purposes, it does not deal with recovered, reprocessed or non-conventional fossil fuels, such as reprocessed coal-washery tailings, which do not fit specific categories and can therefore only really be classified as item 7 – solid fuels other than those mentioned in items 1 to 5. However, within the generation sector, coal-washery tailings would be listed as item 1 using Method 2, but this may not satisfy potential other users of such products.

With respect to the listing of liquid fossil fuels in Schedule 1, Parts 3 and 4, the current listing does, in part, not make much sense and NGF members recommend some reworking to ensure consistency and accuracy of reporting.

Specifically:

- Item 31 Petroleum-based oils (other than petroleum-based oil used as fuel). This item is lifted directly from the item 15 of the Excise Tariff Act Schedule and the intent within NGERS is ambiguous and it should be clarified, especially as this item appears in a part titled 'Fuel Combustion – liquid fuels and certain petroleum-based products for stationary energy purposes'.
- It is difficult to understand why items 36 and 38 are presently included in Part 3 for 'stationary energy purposes' when they are clearly related to transport energy purposes and repeated in Part 4, Division 4.1.
- To ensure accurate reporting of fuel descriptions on oils and greases in the Schedule, the section should be amended to include 'synthetic equivalents' as intended by the NGERS definitions and thus avoid inadvertent omissions.
- Clarification needs to be added either in Section 2.48 or this Schedule to confirm which item number is intended to be applied to Section 2.48A-C emissions.
- If it is intended that NGERS reporting is also to include hydraulic fluids, brake fluids, transformer oils, engine coolants and so forth, these should also be listed explicitly in the (Measurement) Determination.
- The introduction of a specific item for recycled lubrication oil as a burner fuel would provide a useful addition to Part 3, or alternatively, guidance on which item number is preferred for this material would improve reporting clarity.

More broadly, over time and with further reporting experience, other default Method 1 factors may require review, and including what for NGF members relate to minor emissions or energy use. NGF members understand the need for ongoing reviews of default factors and support a systematic approach to such issues.

### **Completeness principles and emissions sources**

Although section 4.1.1 of the Discussion Paper does not list all sources in table 4.1, it is consistent with the National Greenhouse Gas Inventory and hence international protocol. However, for NGERS reporting purposes, the table does not clarify a lot as the issue of 'completeness' sits one level deeper in the detail. It would be helpful, over time, to develop a new table listing products that are being used in the listed production processes and to provide a definition of 'completeness' with respect to such a table. Minor emissions that can be excluded, such as the gas barbecue at an industrial facility, could also be listed.

Additional sources from product uses are detailed below.

## Treatment of missing data

The Discussion Paper details the issues related to the treatment of missing data accurately. To quote:

*“The current method states that emissions must be calculated during the down time based on the average daily emissions estimated for the year.*

*Stakeholders have identified that the accuracy of missing data estimates can be improved by the utilisation of more complex methods. For example, the electricity generation industry has significantly more detailed methods, including relating to coal and gas flow-rates, coal and gas analysis, auxiliary fuels and power metering. The adoption of more detailed industry methods would likely improve the accuracy of estimates during the down time.*

*The Determination could be amended to reference missing data protocols developed by industry. The industry guidelines would need to be shown to be more accurate than the existing method and would outline, in detail, methods available for the estimation of the various inputs during the temporary unavailability of a method”.*

The NGF has used consultants to deal specifically with the issues related to data gaps and NGF members collectively are in the process of developing generation industry-specific guidelines on the treatment of missing data as well as a number of other issues.

As such, it would greatly assist generators, and other industry, if more thorough or more effective methods for dealing with missing data would be permitted. For instance, the NGF would table its guidelines currently being developed for approval by DCCEE/GEDO and apply the methodologies outlined to missing data.

However, it should also be noted that in a number of instances it would not be possible for such guidance material to allow for all eventualities and reporters should have the discretion of offering alternative facility-specific techniques for resolution of data gaps and submit substantiating details with their reports.

## Explicit minimum reporting rule for emissions estimates below minimum detection limits

NGF members report few, if any, measurements below a minimum detection limit (MDL). In other words, in almost all circumstances, measuring equipment is employed that is capable of yielding results above the MDL. This is certainly the case for Method 2 reporting. However, MDL issues may arise when greater on-line instrumentation is used in the future, such as for Method 4 reporting.

Although NGF members have no strong views on the approach for dealing with MDL issues, from a scientific perspective, the rational approach would be to report that a parameter falls below a MDL and to quote the MDL for the parameter. Arbitrarily reporting a specific value, such as zero or 50% of MDL, although convenient, would not be correct or honest and it should not be up to individual businesses to make such value judgements.

If necessary, DCCEE/GEDO could apply its own internal rules for dealing with such MDL data issues. It may be possible to consider developing MDL limits which are practical and that can be reasonably complied with. However, the use of MDL or some fraction of MDL values has already shown to cause unwarranted confusion and concern in the interpretation of National Pollutants Inventory data and such pitfalls should be avoided.

Should DCCEE/GEDO insist that the onus of reporting of parameters below a MDL remains with the reporting corporation, then the corporation should be allowed to choose a method best suited to its needs.

### **Disaggregation of fuel classifications**

NGF members support the disaggregation of black coal types but notes that the value of such action only relates to Method 1 reporting.

Care needs to be taken in disaggregating minor fuel types as this would add to further reporting burden on business without adding significant overall value. In this respect, it may make sense to report acetylene separately instead of reporting under 'other gaseous fuels' but NGF members continue to fail to see the point of reporting of hydrogen used for generator cooling (not combusted) and this issue requires effective resolution.

The clarification of energy commodities, such as compressed air, being only reported where they are acquired from outside a facility boundary, is very welcome and endorsed.

### **Treatment of bias tolerances, repeatability and reproducibility limits**

NGF members welcome the discussion on bias, repeatability and reproducibility but note that it may do little to remove the vagueness in the (Measurement) Determination with respect to bias testing. Bias testing is often expensive, at times not particularly practical and in some cases it could be dangerous.

The suggested direction for establishing a maximum tolerable bias (MTB) is welcomed as it assists in determining a measured parameter assumed to be 'free of bias'. The use of AS4264.4 in determining bias is sensible, but, as noted, the standard does not set quantitative limits, nor does it deal with the correction of results, as this is outside the scope of the standard.

Also, there continues to be a lack of clarity about the frequency of testing for bias.

With respect to bias testing, NGF members follow the NGERS Technical Guidelines and apply significant rigour to bias testing for new plant items. Further, NGF consultants have produced an approach to bias testing that will be incorporated into the NGF NGERS guidelines and could form the basis for any further discussions with DCCEE/GEDO as required.

Repeatability and reproducibility issues will also be addressed in the NGF guidelines under development. An issue of particular significance is the issue of reproducibility for carbon in coal and ash and again NGF will incorporate its consultant's advice on this issue in the NGF guidelines. However, it should be noted that different standards detail different reproducibility tolerances, adding to the overall concerns about poor inter-laboratory reproducibility for carbon determinations. This is clearly a major NGERS issue for both reporting corporations and DCCEE/GEDO and it remains essentially unresolved.

At present, all parties concerned are awaiting the outcome from Proficiency Testing Australia's round-robin 26 with respect to coal analysis before advancing this issue further. However, the NGF would like to flag to DCCEE/GEDO that confidence in reporting carbon in coal and ash remains low and that further action may be needed. As flagged, NGF members would like to see a more thorough review of standards used for sampling and analysis of fuels, potentially culminating in some guidance material for reporting corporations.

## **Carbon in ash determination**

NGF members welcome the Discussion Paper's treatment of carbon in ash, and in particular with respect to ash sampling as a function of load. As responsible entities, NGF members do conduct sampling depending on plant operational requirements and sampling as a function of load would still be used as necessary if a dependency is suspected.

It would assist NGF members if the (Measurement) Determination just simply specifies that representative ash sampling is required and to allow entities to demonstrate how this requirement has been achieved.

NGF members are concerned about the suggestion that ash sampling frequency is less than desired. All NGF members augment annual or biennial ash sampling with further sampling if operating conditions change significantly. Without changes in operating conditions, there is no evidence to suggest that more frequent sampling is needed, particularly when initial more thorough sampling programs indicate consistency.

A remaining issue is that of ash sample preparation for carbon determination. NGF members report inconsistencies with respect to loss on ignition testing due to sample grinding differences, with no standard for guidance. NGF members consider this to be a minor, but worthwhile, issue for further consideration.

## **Combustion of fuel in explosives**

Some NGF members, who use explosives in the mining environment, have reported the combustion of fuel in explosives as part of diesel fuel use (other purpose) and given the very minor nature of such combustion, NGF members see little value of having to report to yet another category with respect to users of explosives.

## **Treatment of lubricants and greases**

Replacing the term 'waste oil' with 'oil transferred off-site' is sensible and supported by NGF members.

However, NGF members continue to have difficulties with the whole approach taken to the issue of minor emissions from lubricants and greases. The current application of the (Measurement) Determination Division 2.4.5A and Section 2.68 do not make sense and would appear to be without precedent in the 2006 IPCC Guidelines. The only real application of the current section relates to the consumption of lubricants that enter the combustion chamber of internal combustion engines, and accordingly the scope of this Division should be clearly limited to such combustion. Likewise there is no combustion of lubricant in gas turbine engines to which this section seems to equally apply.

The proposal to use flash point plus the identification of the lubricants and greases as the basis for emissions calculations is unnecessary complicated and strongly opposed by NGF members. With respect to oils, all are recycled and accounted for in the waste tracking processes within corporations and within the jurisdictions. These should not be included as either fuel or as an energy source except as required for tracking purposes preferably via the application of Section 2.68 which aggregates non combustion consumption. If necessary the threshold limits could conceivably be adjusted if required.

On a related matter, neither the Determination nor the regulations are clear on the application of the existing Section 2.68 thresholds. It is not possible to establish clearly whether the thresholds apply to the aggregate of each fuel class for a facility (solid, gaseous or liquid) or separately to each individual fuel type. If applied to each fuel individually, then a separate threshold should also be specified below which there would be no requirement to include very minor non combustion fuel types in the Section 2.68 aggregate.

### **Fugitive emissions from coal mines**

NGF members note the exclusive use of Method 1 for the determination of fugitive emissions from coal mines, the wide variation in such emissions, and ongoing ACARP/CSIRO work in developing mine specific fugitive emissions factors. NGF members have not been able to access any of this developing information. However, it is understood that brown coal mines are not covered by the research work. If correct, it would make sense to include fugitive emissions from brown coal mines as separate individual research work would be very expensive for such low level emissions.

### **Hydrogen production (other than from refineries and ammonia production)**

Further to the brief comment previously, NGF members see no value, or point, in reporting power station hydrogen production or use as it is not combusted as an energy source. Accordingly, NGF members seek exclusion for power station hydrogen, used in hydrogen-cooled generators, reporting requirements, as it is a non-NGERS issue.

### **Reporting and use of industrial gases**

The Discussion Paper introduces unnecessary complexity in the reporting of very minor emissions from the use of industrial gases and NGF member desire a very simple approach to such reporting simply based on the stock inventory utilisation with respect to bottled industrial gases. NGF members use small amounts of carbon dioxide for generator purging purposes and small amounts of nitrous oxide in laboratory applications. Differentiating biogenic and non-biogenic forms of carbon dioxide is not possible for bottled gas at the user level and therefore should be undertaken at the supplier level, if at all.

### **Waste water**

Clarification is warranted with respect to waste water treatment facilities. Small domestic waste water treatment facilities at power stations, and elsewhere, should be differentiated from municipal waste water treatment facilities. Further elaboration is necessary of what would be reportable from small waste water treatment facilities, including COD levels.

### **Other NGF issues**

As indicted, the NGF is now compiling guidelines to complement the (Measurement) Determination in areas where both the Determination and NGERS Technical Guidelines are deficient and require further clarification. DCCEE/GEDO is familiar with most of the NGF issues and, indeed, some are clearly addressed in the Discussion Paper.

For information, NGF guidelines are being prepared for:

- Bias, precision and reporting uncertainty
- Coal weigher accuracy
- Carbon in coal and in ash determination
- Treatment of specific data gaps unique to electricity generation
- Minor fuels

- Electrical metering
- Dealing with energy and emissions materiality.

A number of second order issues are also being pursued related to, among others, issues related to operational control and dealing with contractor emissions.

NGF members look forward to further discussing these issues with DCCEE/GEDO as part of the regular interaction sessions.

Should you wish to discuss aspects of this submission further, please contact the NGF Policy Advisor, Dr Harry Schaap by telephone: 03 9499 4249 or 0413 623 043 or by email: [Harry.Schaap@tpg.com.au](mailto:Harry.Schaap@tpg.com.au).

Yours sincerely

A handwritten signature in blue ink, appearing to read 'M. Roberts'.

Malcolm Roberts  
Executive Director