

Australian Government
Clean Energy Regulator

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NGER Scheme – 2022 Proposed Amendments Discussion Paper

The Australian Energy Council ('AEC') welcomes the opportunity to make a submission to the National Greenhouse and Energy Reporting Scheme – 2022 Proposed Amendments ('Discussion Paper').

The Energy Council is the industry body representing 20 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

The AEC wishes to provide some brief comments supporting the proposed changes to the *methodology for calculation of Scope 2 emission factors and biomethane*.

Methodology for Calculation of Scope 2 Emission Factors – Average Grid Intensity Over Time

The Clean Energy Regulator ('CER') has, until now, relied on a three-year moving average to determine scope 2 emission factors. Combined with the time taken for data collection, this would mean that emissions factors would include generation that occurred five years previously. However, the age of the data was not problematic in a context of a relatively stable generation fleet, where the averaging smoothed out variances from hydro generation (which would see its supply fluctuate depending on the level of annual rainfall).

Australia's electricity system is now undergoing a major transition towards renewable generation, which is resulting in a rapidly declining emissions intensity. Aged data therefore unreasonably exaggerates scope 2 emissions. It is important that the emissions intensity factor reflects the decarbonisation of Australia's electricity supply, and given how rapidly this transition is occurring, adopting a yearly average is necessary. The benefit of fresh data far exceeds the error introduced by single year variations.

A one-year average is a considerable improvement but will still incorporate a data collection lag of up to three years. It may be worth considering a forward-looking emission factor that uses an estimate of the current grid intensity rather than waiting for historical NGER values. This has the downside of relying on forecasting judgement, but this would likely be also outweighed by the benefit of currency.

The AEC draws the CER's attention to the Australian Energy Market Operator's application of [Forward-Looking Transmission Loss Factors](#) that makes actual financial adjustments to generators' settlements based on their judgment of the way future generators' outputs will affect network losses. The National Electricity Market originally began with backward looking loss factors – analogous to existing emissions factors approaches – but moved to the forward-looking approach because the advantage of fresher information outweighed the disadvantage of greater judgment.

Methodology for Calculation of Scope 2 Emission Factors – Grid Averaging

The AEC suggests the CER investigate whether greater sophistication can be introduced into scope 2 emissions factors by moving away from simple average grid intensities. Not only is the electricity system becoming less emissions intensive on average over time, it is also moving rapidly to one

characterised by dramatic hour on hour changes in emissions intensity depending on the output of variable renewable energy.

Conceptually, the *marginal* emissions intensity of electricity in fact falls to zero during negative electricity spot prices. These negative prices indicate spilling of surplus renewable energy. A marginal increase in electricity demand at such times therefore results in less spill and no increase in scope 1 emissions. A load operated to consume electricity only at such times should therefore theoretically have no scope 2 emissions.

Ideally, the methodology should evolve to permit the application of *actual* consumed electricity emissions intensities. Using actuals will allow businesses, especially C&I businesses, that align their electricity usage with periods of high renewable generation to have this reflected in the NGER scheme. This should incentivise businesses to reduce their carbon footprint by operating in sympathy with variations in renewable energy.

In that vein, a [recent article](#) examined how technologies critical to the energy transition, such as batteries, are not having their carbon abatement value fairly reflected in the current accounting rules. As batteries tend to charge during periods of high renewable generation, the energy used to charge is lower in emissions than the annual energy system average, and, if showing evidence of price sensitivity as discussed above, might even be able to reasonably apply a *marginal* intensity.

The AEC recognises these are complex issues and possibly beyond the scope of what the CER intended in this Discussion Paper. In that case, the AEC recommends the CER commit to a new process to investigate more sophisticated and granular options to scope 2 electricity emissions intensities.

Biomethane

The AEC recently published two research papers that considered decarbonisation opportunities relating to [stationary energy](#) and [dispatchability](#). In these papers, it was noted that biomethane is a 'direct zero-carbon substitute for natural gas' and will likely play a role in substituting gas, which is currently used in some industries that require high temperature heat combustion. As biomethane finds a new use into the gas network, it is important it is recognised as having a zero-carbon dioxide emission factor, given it is sourced from the digestion of organic matter (e.g. agricultural waste).

The proposed amendments to the Method 1 calculation for biomethane appropriately allocate a value of zero to the carbon dioxide component of the emission factor. The proposed amendments for the Method 2 calculation for biomethane also identify the relevant measurement standards to be applied to determine the energy content and gas composition of biomethane. However, there does not appear to be any proposed amendments in the calculation steps for Method 2, which is what generators that use biomethane rely on. If this is correct, the CER should for clarity include an additional step in Method 2 that specifies a value of zero will be applied to the calculated carbon dioxide emissions from the combustion of biomethane.

Any questions about this submission should be addressed to Rhys Thomas, by email to Rhys.Thomas@energycouncil.com.au or by telephone on (03) 9205 3111.

Yours sincerely,



Ben Skinner

GM Policy, Australian Energy Council