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**RE: ESB NEG Market Customer Load for the Emissions Reduction Requirement**

Thank you for proving the opportunity to comment on the Market Customer Load Paper.

## 1. Comments on the Executive Summary

There is no regard to a proper method to track the Green House Gas (GHG) emissions associated with the load through the market to end use consumers.

The reference to the market load inputs being 'most aligned with the mechanics of the Renewable Energy Target' does not properly identify that the comment relates to the electricity component. In relation to accounting for GHG emissions in this load, the Renewable Energy (Electricity) Act makes no mention of emissions and Large Scale Certificates created under the Act have no attributes and do not incorporate any emissions or zero emissions value.

There is little appreciation or acknowledgement on how the NGER Technical Guidelines and NGER Determination operate demonstrated in this paper and proposals.

Under the NGER Framework, scope 1 emissions are created at the facility of generation. The scope 1 emissions reporting requirements of NGER collect this data but it stops at the operational boundary of the facility. The data obviously does not incorporate transmission losses, network losses, energy storage losses, nor does it divide and track scope 1 emissions through the market. By NGER definition, this is impossible.

The NEG however requires contractually based GHG accounting of Scope 2 emissions that would need to be calculated by the NEG Emissions Registry through methods that are yet to be created or even proposed. This is a major issue which could be overcome but only by getting the right people in the room to develop the solutions. To date, the COAG ESB and Federal Government do not appear to have involved the right people that understand GHG accounting and the reforms that are required. This is surprising because it is well known that NGER Reforms are long overdue.

The NGER framework is already in desperate need of reform. Claims of renewable electricity use have become farcical, as there is currently no legal mechanism to allocate any kind of electricity or any kind of emissions to any end user. The only legal mechanism that does exist is for NGER liable organisations to report their scope 2 emissions based on the physical accounting approach, but this is not applicable to the wider market and does not clarify such things as use of renewable

electricity use nor any way for customers to legally claim zero scope 2 emissions when buying GreenPower.

The current NGER Technical Guidelines state that

> ***"****All emissions attributable to a state territory or grid's electricity consumption are allocated amongst individual consumers in proportion to their relative level of consumption. In effect, the likelihood of a particular generator supplying a particular consumer is assumed to reflect each generator's relative level of supply to the grid.* ***The reason for this approach is that within an electricity grid it is impossible to physically trace or control the actual physical source of electricity received by each customer".***

This reasoning has always been a fallacy, designed to stifle any reform. It is easy to prove that it is a fallacy because the everyday electricity bills of most customers are charged in exactly this way, by specific companies using input and household metering systems in conjunction with electricity contracts to allocate ownership of payment liability.

Now, after successive governments have blocked and stifled sensible discussions on transitioning to contractual accounting for GHG emissions, the NEG Framework is proposed which does exactly that, all the way to large end use customers and to retailers.

For the NGER Framework to be the legislative instrument and to provide the necessary method for the NGER contractual accounting to work, the physical accounting approach to allocating scope 2 GHG emissions needs to be scrapped and replaced with a method for contractual GHG accounting.

It would also be extremely unwise to keep the physical approach for end use customers whilst introducing a new unintegrated GHG allocation mechanism to apply to large end use customers and retailers. This would cause yet more counting in a broken framework that is already riddled with double, triple and in some cases quadruple counting of emissions reductions and use of renewable electricity (refer to my submission on the Detailed Design elements more explanation if necessary).

## 2. Overview of High-Level Design

The high level design needs to adequately address both the electricity flows and the accounting of the GHG emissions as they are managed through the transmission system, electricity storage facilities, networks, through the contractual processes and allocations to the large end use customers and retailers (plus this should extend to all end use customers.

Currently, the high level design completely fails to address the GHG accounting methods that will be required.

The approach to support GreenPower through the NEG is a prime example of failing to deal with the GHG accounting methods that are required. The paper seems to make some suggestion that it could assure additionality in a NEG framework where even the emissions constraint proposed is unlikely to exceed business as usual in the market. For GreenPower to be reformed and to succeed, first there is a need to properly establish contractual accounting for electricity products sold to end users.

# 3. Definition of volumes

### 3.1 Pool purchases and pool generation

The section fails to comprehend the changes that will be required in the NGER Technical Guidelines and Determination. There needs to be a new method proposed to enable scope 2 emissions to the large end users and retailers to be calculated, based on the scope 1 emissions data from facilities, adjustments for transmission, distribution and electricity storage losses and providing the data to the market. Only then can there be apportioning of emissions in relation to electricity contracts.

- **3.2 Volumes used in calculation of generator emissions intensities**

The proposed method fails to comprehend the difference between scope 1 and scope 2 emissions, and provides a totally inadequate approach to calculate what would be scope 2 emissions. The method fails to acknowledge that the current NGER method of allocating scope 2 emissions would prohibit the operation of the NEG.

It is the NGER Determination as the legislative instrument (Not the NEG Emissions Registry) that would create requirements around the Registry to operate. Also, there is an existing NGER Emissions Registry and the NEG is proposing a new NEG Emissions Registry. Would these be combined? This matter requires clarification.

- **3.3.2 Metering channels for emissions intensity**

Refer to previous comments relating to ensuring that the GHG accounting and allocation matters are adequately addressed, and that contractual GHG accounting of scope 2 emissions is established to replace the physical allocation of scope 2 emissions.

# 4. Treatment of non-market generation

### 4.1 4.1 Embedded generation

Sound GHG accounting and allocation rules must apply to non market generation such that the end user of the electricity is allocated the scope 2 emissions which come from the local non-market source.

### 4.2 Small-scale solar PV

The paper fails to acknowledge the interests of the households and businesses that, in producing and consuming the renewable electricity, they are also claiming zero scope 2 emissions. I suggest to the COAG ESB that the reason that small scale tradable units (STUs) are not used in GreenPower and or in the National Carbon Offset Standards is because of the established convention that the householders are claiming use of their renewables at zero emissions. Don't mess with that.

**Option 1 is therefore rejected.** It would be incredibly foolish to steal the zero scope 2 emissions from two million households with PV systems.

**Option 2 based exports is potentially supported** but the explanation of how this option is different to Option 3 is not fully explained. Any option must be subject to

arrangements to include the consent of the PV owner in their electricity agreement with a retailer.

**Option 3 based on net exports is supported** subject to arrangements to include the consent of the PV owner in their electricity agreement with a retailer.

### 4.3 Batteries

This section has flippant regard to GHG accounting in relation to battery storage. The current NGER physical accounting approach means that any battery connected to the grid that draws back electricity from the grid, is recharging on standard grid electricity. Being near a wind farm does not make a battery store only renewable electricity.

In the simplest form, batteries will perform at an average input output loss over the range of charge and discharge cycles (which will not be uniform). This loss can be expressed as a percentage loss. There are several important elements of the operation of battery storage facilities for the NEG.

1) The loss of electricity due to the operation of the battery
2) If there were emissions associated with the electricity input to the battery, those emissions become proportionally higher (Same emissions but reduced output)
3) For those in the market that will lay claim to renewable electricity as zero scope 2 emissions, then the battery storage facility must ensure contracts to input only accredited renewable electricity. Only then can the output also be regarded as renewable electricity.

At the early stages of operation, an estimate may be required. Metered data from the installation can in time build a more refined assessment of battery facility losses. This data will need to be supported by a defined NGER Method for data collection in the NGER Technical Guidelines, enacted through the NGER Determination.

The concept of grid-connected batteries to require netting of generation against load **is therefore supported, but only with adequate contractual GHG accounting** to enable batteries to be confirmed as storing renewable electricity or a mix of emissions causing electricity, depending on the contracts.

The proposal for behind the meter batteries collocated with grid-connected generation to be included through the netting of imports and exports at the generator, **is not supported without more detail**. The meter itself for a large grid scale battery will not prevent recharging from the grid. There still needs to be a contractual foundation with netting of imports and exports, particularly where there are high import events.

## 5. Other issues

#### 5.1 AEMO metering revisions

No comment

#### 5.2 GreenPower

No acknowledgement or changes have been made to address previous input into the NEG consultations on reforming GreenPower.

The discussion of GreenPower is off track and first requires a fundamental underpinning of enabling contractual GHG accounting to electricity products sold to end users at differing scope 2 GHG emission intensities.

I remind the COAG ESB and the Federal Government in the following case study that renewable electricity claims Australia have become farcical. Without reform to actually allocate renewable and lower or zero scope 2 emissions to end use customers, any end user can claim anything but there is **no law to underpin any claim.**

**CASE STUDY The farcical situation of renewable energy end user claims in Australia**

Over the past 12 years there have been calls for reform to create a legal, logical and single allocation of renewable energy and reduced emissions to end users. Successive Federal Government departments have steered discussion away from reform. Calls for reform in the 2010 consultation on Scope 2 emissions were rejected. In the period of the COAG complementarity principles, reforms were again blocked. Voluntary renewables collapsed further as customers continued to be charged the carbon pass through costs, and governments deemed the purchasing of renewables as non-complementary. In relation to NGER consultations, the Federal Government Department avoided public acknowledgement of the issues being raised and failed to address concerns raised. It was also reluctant to publish NGER related submissions and quickly deleted old submissions.

There is a long and documented history of concerns raised about GreenPower and, without repeating the technical aspects, my submission on the GreenPower Review covers the issues of a system without rules and riddled with double and triple counting. See:

Tim Kelly Submission
http://www.greenpower.gov.au/Business-Centre/Program-Review/~/media/4488FFC5C5B04BACAEA881E393F33BB8.pdf

Tim Kelly Submission - Summary of Recommendations
http://www.greenpower.gov.au/Business-Centre/Program-Review/~/media/6DDD9A53908E49AA9BE6A0AE098154AA.pdf

Now, in 2018, there are new developments with large government PPAs and an explosion of business PPAs. Many of these are claiming to be renewables, or coming from renewables. The trouble is that there is virtually no way to understand whether these claims include surrender of LGCs to ascertain if they are the second or the third count of the same renewable energy. Even if they do include the LGCs, this actually means nothing in terms of entitlement to claim use of renewables and lower emissions as thus convention is not established in law.

The former South Australian State Labor Government in late 2017 and early 2018 has been using the term "coming from renewables" to claim or imply that they are switching to 80% renewable Energy in 2018, and 100 % from 2019 through a PPA with Simec Zen, but they won't say if LGCs will be voluntarily retired. UPDATE This PPA did not include voluntary surrender of Large Scale Certificates and the department now denies that it had claimed that the contract was for 80% renewable electricity or 100% renewable electricity.

The former South Australian Government was also claiming to support a "Green Hydrogen" plant to produce and export hydrogen from South Australia's renewable energy, but did not advise if the planning included accredited renewables as GreenPower or voluntary surrender of LGCs to for the electrolysis, chilling and compressing of the hydrogen.

Adelaide Brighton Cement have announced a renewable PPA but have not responded to clarify whether the PPA arrangements include the surrender of LGCs, and this is despite making contact with the company.

Many many more organisations have made renewable PPA claims since March 2018 and it is impossible to track how many of these included the voluntary surrender of LGCs.

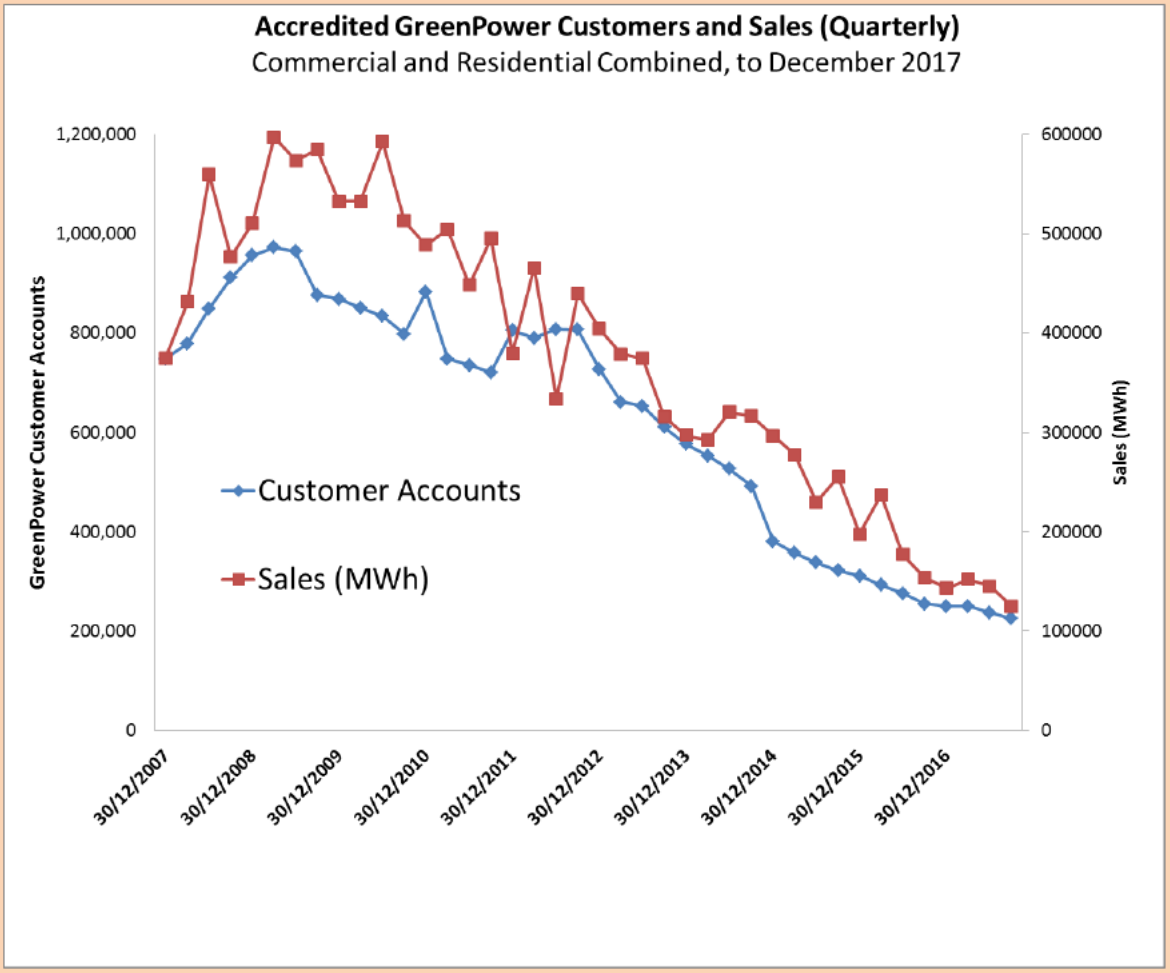
If we include the rise of electric vehicles into the mix, the situation is set to become even more of a wild west renewables claims market unless there is real reform. Also, consider the rise of batteries up to the 100 MW Tesla battery, where there are claims that these store renewables (rather than grid mix power). There are also an ever-growing number of other businesses, universities and communities all making claims on renewables every week, some with retirement of LGCs and many without.

The approach by successive federal governments has been to let things go. It has never been the right time to

address the basic accounting and allocation framework to underpin a low-carbon renewables economy. The Federal Government pulled out of the National GreenPower Steering Group (where it participated with observer status) but maintained both the voluntary surrender approach and GreenPower in non-legal supplementary NGER reporting via the NCOS carbon neutral program for those claiming use of renewables and carbon neutrality.

Most businesses and Governments (local state and possibly federal) have abandoned GreenPower (which assures voluntary surrender of LGCs), in favour of manual LGC surrender or no LGCs at all. The direct voluntary surrender option, which is away from public scrutiny and assurance, has emboldened businesses towards not necessarily retiring the LGCs voluntarily or drifting away from purchasing LGCs altogether.

As for the GreenPower program itself, its collapse continues because customers, including governments, councils and businesses, are fully aware that it is a second count of renewables use and is also priced as a penalty rather than an alternative product. Residential customers do not trust the GreenPower scheme with the cryptic marketing language **with the cryptic marketing language designed to avoid telling customers that it [the renewable energy] is double counted and not supported in law.”**. At a time when the price of producing renewables has dramatically fallen, there has been no price relief for 100% GreenPower customers (like myself). The GreenPower customer numbers and sales have continued to collapse. At this rate, GreenPower will be extinct within 2 years, if not sooner.




Another development is the looming achievement of the RET. The whole concept of voluntary renewables has been based on being additional to the RET. Additionality has already been eroded by RET reviews and reductions but will soon become a meaningless concept when the RET has been achieved. Some market participants already see LGCs and additionality as redundant and are suggesting that the association with a facility makes the difference for renewables use.

From what I understand, the National GreenPower Steering Group have had discussions with the Federal

Government Department following the 2014 RET and GreenPower Reviews, but it does not look like there is much progress and there is certainly no involvement with the public.

**Conclusion**

In summary, the situation is a total mess. There is no legal mechanism to allocate any kind of electricity to any end user. Not in NGER, or in the RET legislation, not as green power or non-renewables. Any person or organisation can make up their own rules and accounting like the ACT Government has done (to claim a percentage of mandatory renewables with the remainder as GreenPower).

The ACCC approach to punish those without LGCs or earlier RECs surrender has now lost its punch, and was all bluff anyway as none of this is covered in legislation. The Federal Government could have legislated a physical accounting approach to legally allocate average emissions to all end users but chose not to do so, probably because this would have killed off voluntary renewables immediately. There is no integrity in the current double and triple counting of end use of renewables and no consistency in claims being made.

There is now a new opportunity through the NEG design, to adopt a contractual accounting and allocation approach that the community, governments and businesses have widely adopted, but which is not yet supported by NGER legislation. It would take a committed effort to work out such an approach that would also deal with the rise of batteries, EVs and losses. In my work with the GHG Protocol, there is no barrier for a nation or state to adopt contractual accounting but I do acknowledge that there are divided views. The Australian situation is different to the US, because our RET is to be reached in just a couple of years. With no further requirements for renewable electricity, additionality to the Renewable Power Percentage becomes meaningless. The allocation of renewable energy to an end use customer (by association) has become the main factor behind renewable PPA claims.

After nearly 8 years since this matter was last considered, now is the time for a genuine approach to build on the NGER Framework to properly allocate electricity related emissions to end users in a way that fully reflects the market choice. The growing flood of renewable energy claims made in complete contradiction to the NGER Framework, with double and triple counting, must stop and GreenPower must be reformed to become the only accreditation approach to assure household renewable energy contracts and business renewable PPAs. The situation will not fix itself. It requires acknowledgement and a dedicated effort from the ESB and the Federal Government.

## ALLOCATION MORE IMPORTANT THAN CHASING ADDITIONALITY

Whilst additionality is an aspiration, it is the allocation of renewables and allocation of lower (zero scope 2) emissions to renewable energy customers that is now far more important.

> **Anarchy** - *a state of disorder due to absence or non-recognition of authority or other controlling systems (Oxford English Dictionary).*

For years, the Federal Government as the *Archon* has been missing in action. Updated rules around allocation of renewable electricity use and reduced emissions if defined under the NEG and through the NGER Determination, will prevent the continuation of the current anarchy of claims that are double counted, triple counted and in some cases counted up to four times over.

**Count 1** NGER allocates GHG emissions from all generation (including renewables) within a state across all customers in that state.

However, the NGER is only legally applied to liable entities under NGER Reporting Obligations

**Count 2** GreenPower and the Voluntary Surrender of LGCs claimed by end use customers and under the national Carbon Offset Standard are 100% double counted and have no foundation in law

The Renewable Energy (Electricity) Act 2000 describes how LGCs are created but do not describe any attributes to be associated with the certificates. They are proof of generation only.

**Count 3** the explosion of Power Purchase Agreements (PPAs) claiming association with renewables is increasingly taking place without the purchase and voluntary surrender of LGCs. The ACCC has stopped enforcing the LGC/GreenPower convention because everyone knows that the convention has no foundation in law

**Count 4** All the renewables generated in one state are claimed across all users in that state under the NGER framework. However, super large energy PPAs such as the ACT Power Purchase Agreements contracting for electricity from interstate (the SA Hornsdale Wind Farm) are 100% double counted - by both jurisdictions.

**Another double count**

It appears that the Federal Government (from correspondence sent to me) has counted all the behind the meter renewables estimate (including from all household generation) to dilute the grid factors in the National Greenhouse Accounts Factors. I am awaiting a secondary confirmation of this development as it is in breach of the NGER Technical guidelines and would have caused all household renewables to be counted twice without the knowledge or consent of two million households.

It is absolutely essential that the under the NEG which is founded on a concept of the allocation of electricity with emissions to the market, double counting is stopped and the greenhouse allocation framework be extended to all end use customers and on site generator-users.

## One reform with a no double counting principle

In any other market with tangible products such as bread and milk, it is blatantly obvious when these products are sold to one customer but given to another, that deceived customers can immediately object and take further action to recover their money from the scam. However, for ‘GHG emissions reductions’ and ‘renewable electricity use’ in electricity markets, the Federal Government has had no regard for such basic principles and has allowed double, triple and even quadruple counting of these attributes by different customers and end users at the same time. Does the Federal Government really want to make this worse through the NEG?

The single reform is for the NGER Determination and NGER Technical guidelines to replace the physical allocation approach for scope 2 emissions to electricity end users with the contractual GHG allocation approach that has been proposed by the COAG ESB to large customers and retailers. This just needs to be extended to all and users to create a single market wide GHG accounting framework that would underpin the electricity transition.

The Revised NGER Determination would then be the legislative instrument to support the NEG Emissions Registry in its operation.

For consumers, the mess of double and triple counting, false and competing claims and insecurity of customers would be resolved and the retail-end user markets would work as follows:

- End use customers large and small that buy high GHG emissions electricity or buy from a high GHG emissions retailer should report and be accountable for high scope 2 GHG emissions
- Customers that choose a lower GHG emissions electricity retailer should be legally allocated those lower scope 2 GHG emissions
- Customers that buy accredited GreenPower should be legally allocated zero scope 2 GHG emissions
- Retailers should be able to compete on the GHG intensity of their products.
- Competition and transparency of the electricity market will be greatly improved compared to the current mess where there is no legislated economy wide GHG or renewables allocation framework for end users. Multiple claims for renewable energy, double and triple counting of avoided emissions and free riding on emissions reduction are completely undermining fair market principles.

If the high level design of the NEG lacks legal rigour, then good governance and compliance will be impossible.

I would be happy to discuss this submission in more detail.

Kind regards

Tim Kelly

100% GreenPower customer