

12 July 2018

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The Energy Security Board

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## Submission on the Retail Technical Working Group | Emissions Requirement, Retail Load- Issues Paper

Thank you for providing the opportunity to comment on the Retail Load Paper.

### 1. Specification of wholesale purchases and treatment of losses

- **Which definition of wholesale purchases and which treatment of losses is most appropriate for the Guarantee - energy at the TNI or energy at the Node?**

No comment

- **How should differences between generation volumes and retail volumes be addressed?**

The differences relating to electricity as losses also need to be applied to emissions as a concentration. That is that the emissions have not changed but the concentration of GHG emissions tonnes CO<sub>2</sub>-e/MWh increase through the transmission and distribution process. The role of energy storage systems must also be addressed in the same way.

Fundamentally the NEG is only using the facility scope 1 emissions as the starting point to track electricity from particular sources with their emissions through to Large end use customers and to retailers who sell to most commercial, industrial and residential end use consumers. **At this point these are Scope 2 emissions.**

### 2. Treatment of non-market embedded generation

- **How should non-market embedded generation be included in the Guarantee emissions mechanism?**

Electricity produced and consumed behind the meter should not be factored into the NEG, only net exports.

In regard to using the NGERs process to determine these emissions, many of these would not meet the NGERs threshold. Also NGERs does not deal with any trading of electricity with emissions through energy markets. If the document is intending to describe an NGER like approach to determining the scope 1 emissions at the point of generation, then this should have been stated.

- **How should its metering data and emissions be verified?**

No comment

- **Should embedded generation meter readings be sent to AEMO?**

No comment

- **Should embedded generation be incorporated into the emissions registry process or handled separately at the time of compliance?**

If net exports of electricity are sold into the market, then they should be incorporated into the NEG Emissions Registry. Separate handling is just creating risk of more double counting.

### 3. Estimation of rooftop solar PV

- **How should rooftop solar PV be included in the Guarantee emissions mechanism?**

It is essential that only net exports of solar PV are considered to be part of the NEG. Otherwise it would be stealing and double counting of the zero scope 2 component that the owner/occupier has claimed

- **How should it be estimated or measured and what audit/verification is required?**

If there is no current robust mechanism to measure and account for net exports of rooftop solar PV then the estimation would be the only option until advanced metering and transmission of data to retailers becomes widespread.

- **Should rooftop solar PV be incorporated into the emissions registry process or handled separately at the time of compliance?**

If net exports of rooftop solar PV electricity are sold into the market, then they should be incorporated into the NEG Emissions Registry. There are software packages to bundle multiple small net exporters into one contract framework or program. Separate handling is just risk for more double counting.

### 4. Treatment of batteries

- **How should grid-scale batteries be treated in the emissions registry?**

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 be regarded as renewable electricity.

At the early stages of operation an estimate may be required, Installation metering data will be able to build more refined assessment of battery facility losses over time.

This data will need to be supported by an NGER Method for data collection.

- **How should net battery consumption at a household level be measured if at all?**

For electricity produced and consumed behind the meter there should be no consideration as none of this should be stolen for the NEG.

For net exports of Solar PV, renewables in will still equal renewables out and the net exports would be slightly lower. No need to measure.

If household batteries are installed with no PV panels (uncommon) then the input/output loss rates of the battery type should be used to increase the emissions intensity of the electricity in question.

- **What changes might be required to the estimation of solar generation if batteries are also present behind the meter?**

As previous:

For electricity produced and consumed behind the meter there should be no consideration as none of this should be stolen for the NEG.

For net exports of Solar PV, renewables in will still equal renewables out and the net exports would be slightly lower. No need to measure.

## 5. Metering data revisions

No comment

## 6. Alignment of NGERs and generation volumes

- **What changes can be made to NGERs reporting requirements to simplify the operation of the Guarantee?**

What a stupid question!

The issue is not about simplifying the NEG, it is about what would need to be done to reform NGERs so that it could support the NEG to function.

The fundamental change, is not about the measurement of scope 1 emissions, it is about how emissions with electricity are traded through the middle markets, retailers and large end users (plus this change should apply to all end users) NGER Methods need to be created to support *market-to-end-user* Scope 2 emissions. This is a fundamental and necessary change to how the NGER framework has worked to date.

***Why have there been no serious and credible discussions of the change from physical GHG accounting that NGER uses to the contractual GHG accounting upon which the NEG is based?***

***The issue has been raised in consultation since February, and the NEG still has no credible set of amendments drafted for the NGER Technical Guidelines or the NGER Determination. Why not?***

***It is as if there is a turf war to keep sensible and credible***

## ***GHG accounting out of the operation of the NEG.***

As previously stated in consultation submissions, the current NGER Framework allocates average grid emissions to all customers in a communistic way undermining and indeed preventing market choices for electricity products of differing GHG intensity, including renewable electricity. Outside of any legal framework, the Federal Government encourages the 100% double counting of renewable electricity and zero scope 2 emissions. There is no legal set of rules to allocate renewables or any other type of electricity to end user markets.

However the NEG has created the possibility for a full reform of the allocation of electricity products of differing GHG intensity to end user markets. Instead of a communist allocation of grid mix electricity to all, there is a real opportunity to properly establish a market based approach for end use emissions by extending the contractual GHG emissions to all electricity end users including GreenPower customers.

The current NEG proposal will track electricity with emissions to large customers. Having done that, does the Department really think that it would be appropriate and acceptable to continue with average grid mix reporting and claims? Would it make any sense having two completely unintegrated GHG accounting systems for electricity in retail markets?

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 renewable customers would be resolved. 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 or in a Direct PPA 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.

## 7. GreenPower and related schemes

There has been no acknowledgement of issues raised about the lack of a legal foundation for GreenPower and retail renewable energy products. No solutions have been provided to related issues and solutions raised in 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.

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.

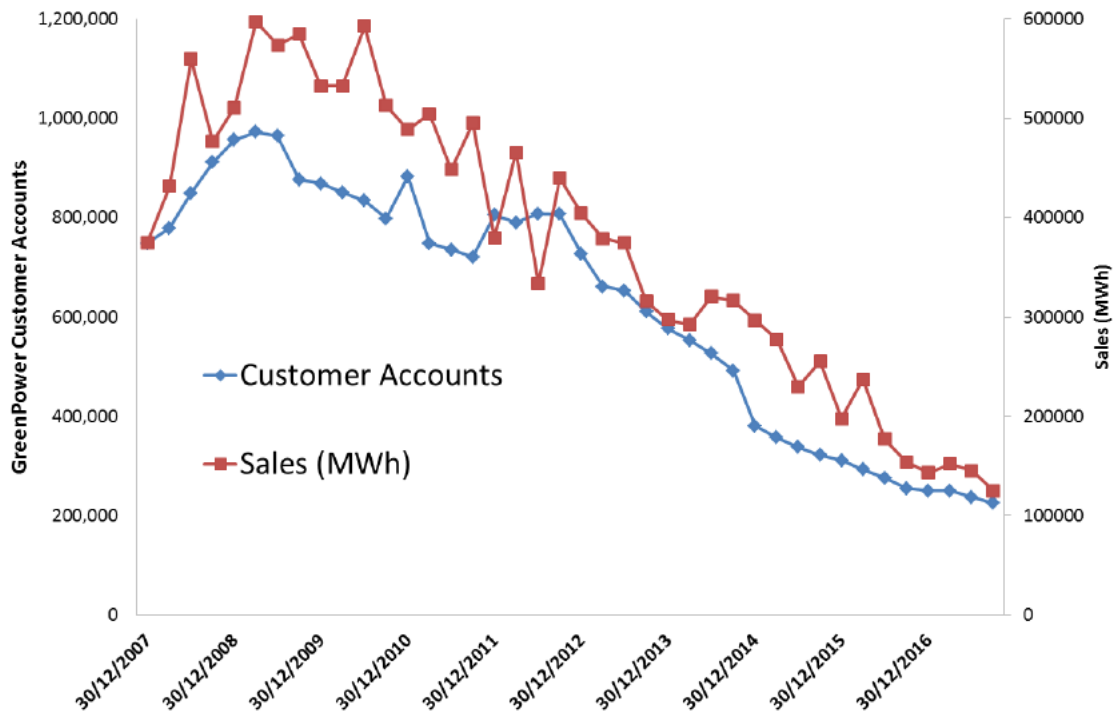
If we include the rise of electric vehicles into the mix, the situation is set to become even more of a wild west renewables claims market unless there is real reform. Also, consider the rise of batteries up to the 100 MW Tesla battery, where there are claims that these store renewables (rather than 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.

**Accredited GreenPower Customers and Sales (Quarterly)**  
Commercial and Residential Combined, to December 2017



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 REC 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. Rules around allocation 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, yet 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 NEG being based on the allocation of electricity with emissions to the market, fix the double counting and ensure that the greenhouse allocation framework be extended to all end use customers and on site generator-users.

## **ADDITIONALITY**

Additionality could be addressed if possible but it is more than likely that additionality will be both unachievable and un-necessary. Currently, the NEG constraint itself may not even be additional to what business as usual will deliver, so any reliance on GreenPower being additional to the NEG and business as usual is unrealistic.

Any approach for GreenPower to be reliant on finding additionality to caps on emissions intensity, not using tradeable allowances, or on Large Scale Certificates which have no legal attributes, is destined for continued double counting and failure. These concepts are fundamentally opposite to the idea of electricity products being traded in markets in relation to their emissions intensity.

## **ADDITIONALITY IS ALWAYS UNDERMINED**

The additionality of GreenPower and other renewable energy mechanisms has been undermined by the Federal Government on many occasions.

It was undermined when the 45,000 GWh Renewable Energy Target was split into the Large and Small Scale schemes.

It was undermined when the Abbott Government reduced the large scale renewable energy target when it deemed that there were too many renewables including GreenPower. When Seeking clarity on this matter from both the Federal Energy Minister and federal Climate Minister it was confirmed that the additionality to the GWh target of the RET was meaningless because the Government did not regard GreenPower as additional to 20%. It was the 20% that was used as justification to cut the RET. Both ministers provided consistent replies:

...“The RET should represent a real 20 per cent” (Greg Hunt)

...”The Government is now seeking to get the system back into balance” (Ian Macfarlane).

...”We do have to be practical - we didn't sign up to [a] 27 per cent target” (Ian Macfarlane)

...” the target needed to be reviewed because it was based on an estimated amount of electricity that was now out of date” (Ian Macfarlane)

Given that the reduced RET will be full by around 2020 and there will be no further legal requirement for additional renewable electricity, it is impossible for the concept of additionality to the RET to continue. Additional to what? GreenPower may not even be additional to business as usual.

### ONE LEGAL MECHANISM NEEDED FOR ACCREDITED RENEWABLE ELECTRICITY

It is deeply concerning that the Discussion Paper mentions other renewable energy schemes. To reform retail renewable electricity, there is a need for a single accredited methodology, not multiple methodologies that lead to multiple counting.

The voluntary surrender of LGCs to the Clean Energy Regulator is one mechanism that would need to be scrapped on commencement of the NEG as the Guarantee is about a contractual approach to track electricity with its emissions intensity to the large customer or retailer (and should be extended to all end user customer). The *LGC only* approach has been a key feature of the early Renewable PPA claims, but now there is an explosion of PPAs where stakeholders have no idea as to whether LGCs have been surrendered or not.

The whole concept of LGCs should also now be reconsidered as the role of LGCs will cease when the RET is achieved within a year. There is simply no need for LGCs in a new scheme where **the NEG Registry could provide the same assurance of accredited renewable electricity.**

There should be a single mechanism facilitated by NGER amendments in line with contractual accounting so end use customers can buy accredited renewable electricity or choose a lower emissions retailer to buy lower emissions electricity. The EITEs that have no emission constraints can choose to buy higher emissions electricity, but should then be allocated those higher scope 2 emissions for their reporting and claims.

### THE NEG EMISSIONS REGISTRY REQUIRES NGER AS THE LEGISLATIVE MECHANISM TO INCLUDE METHODS THAT SUPPORT THE NEG

As with all of the COAG ESB documents to date, the issue of the legal allocation of emissions to end use customers has been ignored. This is unacceptable. Furthermore, the important matter of the legal instrument that would enable the emissions Register to operate, has also been ignored.

Under the National Greenhouse and Energy Reporting (NGER) Act 2007, there is a National Greenhouse and Energy Reporting Register. The NGER Act clearly states that the NGER Register is not a legislative instrument. What is the legislative instrument however, is the NGER Determination which is updated on an annual basis to incorporate improvements in methods and revised factors.

Unless the Government and COAG ESB are intending to duplicate the entire NGER Framework with a parallel universe that counts the same emissions and sources of electricity, but allocated in an entirely different and contradictory method, the NGER Determination should also be the legislative instrument.

As previously stated in consultation submissions, the current NGER framework allocates average grid emissions to all customers in a communistic way undermining and indeed preventing market choices for electricity products of differing GHG intensity, including renewable electricity. Outside of any legal framework, the Federal Government encourages

the 100% double counting of renewable electricity and zero scope 2 emissions. There is no legal set of rules to allocate renewables or any other type of electricity to end user markets.

However the NEG has created the possibility for a full reform of the allocation of electricity products of differing GHG intensity to end user markets. Instead of a communist allocation of grid mix electricity to all, there is a real opportunity to properly establish a market based approach for end use emissions by extending the contractual GHG emissions to all electricity end users including GreenPower customers.

The current NEG proposal will track electricity with emissions to large customers. Having done that, does the Department really think that it would be appropriate and acceptable to continue with average grid mix reporting and claims? Would it make any sense having two completely unintegrated GHG accounting systems for electricity in retail markets?

### 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. 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?

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.

## Interdependencies with other elements of the Guarantee

- **Definition of volumes – impacts design of Emissions Registry.**

No Comment

- **Potential changes to NGERS required to make Guarantee more workable.**

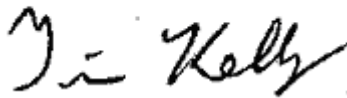
Significant and fundamental changes are required for the NGER Framework including the NGER Technical Guidelines and the NGER Determination (as the legislative instrument).

These changes are not to be directed at making a scheme that does not yet exist “more workable”.

They are required for the National Energy Guarantee to function, to have integrity, to support good governance and prevent total confusion in end user claims.

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

Kind regards

A handwritten signature in black ink that reads "Tim Kelly". The signature is written in a cursive, slightly slanted style.

Tim Kelly

100% GreenPower customer