5 September 2022

Tim Kelly

National GreenPower Accreditation Program
NSW Office of Energy and Climate Change
Locked Bag 5022
Parramatta, NSW 2124

greenpower.admin@planning.nsw.gov.au

RE: CONSULTATION: REVIEW OF THE GREENPOWER PROGRAM

Thank you for providing the opportunity to provide feedback the GreenPower Review 2022.

There has been limited opportunity for customer engagement on the GreenPower Program for over the last 12 years. A GreenPower Review in 2010 which raised concern on the key issues including the lack of legal foundation for the allocation of 'renewables use' and 'zero emissions' claimed by GreenPower customers was not addressed. I am re-attaching my 2010 submission as ATTACHMENT 1 so that stakeholders can see that these issues and achievable solutions were all identified twelve years ago. In the 2015 GreenPower Review the concern on those same key issues was not addressed.

In 2022 the Consultation Discussion Paper in the second paragraph of the introduction asserted that: *"The program's strict accreditation and auditing framework mitigates the risk of double-counting of environmental claims and greenwashing".*

This statement is not correct because every MWh of renewable electricity claimed as GreenPower, has already been fully allocated to the grid under the legislated NGER Determination and non-legislated National Greenhouse Accounts (NGA) Factors. This allocation is used across Australia by Corporations and in the emissions printed on the electricity bills of ordinary household customers. GreenPower is a second allocation based on a Large Scale Certificate that has no attributes in law what so ever.

GreenPower administration removed the previous consultation records and submissions from their website (despite a commitment to the NSW Ombudsman to maintain these public records) The problem of a lack of a market based legislated accounting framework to underpin GreenPower has been there from the start and concerns began to be raised from 2005 onwards if not before.

GreenPower as a market based product is a great idea and I have been a 100% GreenPower customer since 2006. However, in its current form it is false and there must be reforms to stop the systemic deception of GreenPower customers and double counting. Rebranding the Program again won't fix the lack of legal foundation and won't help to establish pricing fairness.

Addressing the Questions

How GreenPower works

GreenPower does not actually work because Australia has not adopted market based accounting for renewables and scope 2 emissions accounting. The GreenPower Steering Group, Department of Climate Change, Energy, Environment and Water and the Clean Energy Regulator all support market based concepts that are without legal foundation and double counted.

GreenPower has become a framework where approximately 60% of the voluntary effort of a customer is allocated to NGER Reporting Corporations as reduced emissions and a greening grid, with the rest allocated across remaining grid customers.

GreenPower should currently be classed as a donation as the paying customer is not being allocated any renewable electricity, above that which is allocated to all customers.

It is false to refer to "each LGC representing one Mega Watt hour of renewable electricity" because the Renewable Energy (Electricity) Act has not established LGCs or any renewable Energy Certificates in this way. GreenPower is built on this falsehood.

The Relevant Legislation page on the GreenPower Website is also misleading where it makes significant references to legislation whilst avoiding the key issues that:

- LGCs have no legal attributes and are not suitable for voluntary renewable markets
- GreenPower is legally unsupported for end users to make 'renewable electricity use' claims and zero 'electricity emission claims'
- GreenPower is 100% double counted and that this should be disclosed to consumers to ensure compliance with the Australian Consumer Law.

There are solutions that have been covered by the Greenhouse Gas Protocol Scope 2 Guidance (2015) and the eight Quality Criteria described on Table 7 of these guidelines should serve as a checklist for reform in Australia.

3 Market context

Consultation Question

1. ***Do you agree with the above market changes being the main drivers impacting GreenPower sales, public perception and its future role? Are there any other key drivers not included here?***

   Q1 Response

A key driver into the decline of GreenPower since 2009 was the COAG Complementarity Principles which were developed by Governments based on a logic that one the Government sets an emissions reduction Target with emissions trading, individual action is futile and emission reduction schemes like GreenPower are inefficient. The alternative view that voluntary action would make it easier to reduce emissions through time was rejected by the Federal Department. GreenPower customers declined when Governments stopped promoting GreenPower, and when buying renewables did not mean that customers could escape the carbon price. It really didn't start to recover until recent years until after electricity prices dropped more generally.

In 2022 with a new electricity pricing crisis, GreenPower customers are paying for the high price of fossil fuels and for renewable electricity as an additional penalty. There is a real risk of voluntary renewables stalling again.

GreenPower customers are also paying for 145% renewable electricity in LRET and SRES certificates which is not fair and not disclosed. All customers (other than for Energy Intensive Trade Exposed - exempt corporate activities) are charged for the mandatory large scale and small scale renewables. All of these renewables have been allocated to the grid by DCCEEW, meaning that the big corporate entities get reduced emissions for their reputational, product and service based claims without paying for it. However, for GreenPower customers that are actually paying for voluntary renewables, they are charged for these mandatory renewables twice. This is unfair and should not have happened. The matter should have been addressed for the large scale mandatory renewables in 2010, but because the issue was ignored, the small scale renewables ended up being overcharged to GreenPower customers in exactly the same way.

Because the fundamentals are missing and GreenPower is double counted, the pricing structures are also unfair. Double counting means that whilst one party is free riding, they are not doing enough to reduce their own emissions whilst the other party is paying for something that they do not receive.

So the Market Factors include:

- Lack of legal foundation for claims
- Systemic double counting causing a lack of confidence
- GreenPower is double counted
- Pricing unfairness
- Tainted business decisions
- Competing with mandatory renewables for a target that has already been met (un-necessary supply constraint).
- Restriction of new renewables from pre 1997 renewable generation infrastructure (unnecessary supply constraint)
- Unfair competition with carbon offset electricity

An example of the tainted business decisions comes about because of the use of location based emission factors that are still widely used and are mandatory under NGER reporting.

With all renewables diluting the location based state grid factors, the apparent emissions avoidance when buying GreenPower has decreased. In South Australia the state location emissions factor has diminished by more than 70%. Comparing renewables against a state grid factor that includes those same renewables is a ridiculous comparison, yet this is the business as usual comparison made, even in policy analyses commissioned by Governments.

This false comparison has led to the situation where carbon offset electricity appears to be more cost effective in reducing emissions compared with buying renewable electricity. Renewables cannot compete because they have lost to themselves.

4 Short-term changes for 2023

4.1 LGC vintage requirement - limiting the validity of certificates

The GHG Protocol Scope 2 Guidance has suggested that the validity of certificates be for the shortest time possible.

Consumers are seeking renewable energy use at zero emissions and require assurance for their purchase. There is a need to prevent market hoarding distortions as far as possible so GreenPower customers can buy renewables at the lowest cost.

4.3. Incorporating the RET in GreenPower products

4.3.1. Options for recognising the RET

Consultation Question

4. Does Option A sufficiently address the demand from stakeholders to recognise the RET for 100% renewable electricity claims? If not, why?

5. What are the advantages of Option B? Would fixing the recognised RET percentage be a good solution to deal with the annual changes to the RPP?

6. The above proposal is a solution that can be quickly implemented. Should GreenPower consider a different approach in its long-term program design?

Q4 Response

<u>OPTION A: new 100% renewable energy logo</u>

Option A is ineffectual and would mean that GreenPower continues to be a false product in law.

Offering a 100% renewable option above mandatory levels is like being charged for twenty eggs when buying a dozen eggs. Such an approach is unconscionable and won't accelerate the transition to renewable electricity. It would keep granting big Corporates and all non-renewable customers a free ride, discouraging and retarding climate action across the economy.

Q5 Response

<u>OPTION B: include the RET in all GreenPower percentages</u>

Option B is supported but also requires the proper establishment of a legislated market based renewables accounting framework to be established in Australia to define 100% renewables use in law.

The large scale renewables should not be charged twice and whilst small scale renewables are being allocated to the grid, GreenPower customers should not be charged for those twice either.

Q6 Response

Reforms aligning with Option B were recommended to the NGPSG in GreenPower Rules consultations since from 2020.

4.3.3 Minimum GreenPower percentage

Consultation Question

7. Which minimum percentage do you think is the most appropriate if Option B noted in 4.3.2 is chosen, and why?

Q7 Response

Whilst concepts for less than 100% renewable products were suggested in 2010 and in 2015, the focus now should be on making renewables that are cheaper to produce, even with firming, cheaper to buy.

The main barriers are the artificial pricing escalations applied by government policies, to the actual price of renewables.

For this reason, GreenPower should take the leap and assure only 100% renewable products, with fair pricing and a legal definition of what contributes to 100%.

5. GreenPower in 2025

5.1 Program Mission

Consultation Questions

8. Should GreenPower's mission expand to include all forms of renewable energy, for example hydrogen, and is the role of GreenPower the same across different energy carriers?

9 Is there anything else that you think should be part of GreenPower's mission statement?

Current - GreenPower Mission Statement

> **To drive investment in renewable energy in Australia, with a view to decreasing greenhouse gas emissions from energy use, by increasing awareness of, and ensuring consumer confidence in, environmentally sound renewable energy products.**

Q 8 Response

GreenPower is a product sold to customers. The entire mission should be about ensuring that GreenPower is real in law (to allocate renewable electricity use and zero emissions to customers), fairly priced and not double counted. It is the customers that are reducing emissions and driving investment, not GreenPower Accreditation. The GreenPower role should be to support customers in what they are seeking to achieve.

Current and New Roles

The important Objectives have been given a high score of 5 and the rest were largely noise.

#	Objective	Score
4	Provide access to renewable energy products that:	5
5a	• are 100% renewable	5
5c	• are transparent, independently audited and assured	5
5d	• are affordable	5
5e	• are aligned with best practice carbon accounting frameworks	5
5f	• enable consumers to reduce and avoid energy-related emissions	5
6	Advocate for consistent and best practice renewable energy and carbon accounting	5
8	Other: • Assure that pricing structures are fair • Assure that accounting has a legal foundation (for example, through market-based Scope 2 accounting reform to the NGER Determination and alignment of this to the GHG Protocol Scope 2 Guidance) • Assure that the voluntary efforts of GreenPower customers are not being double counted and used by other parties to gain a free ride. • Enable access to purchase GreenPower from pre-1997 renewable infrastructure that otherwise meets GreenPower quality standards.	 5 5 5

5.3.1. The importance of additionality

Consultation Question

12. Should GreenPower focus on maximum additionality, electricity carbon accounting, or should both types of products be supported?

Q12 Response

Additionality is what government presented as an issue when it is Allocation that is more important.

Additionality is largely unobtainable as it requires Government policy to be achieved.

- In 2010. The Government claimed all voluntary renewables as part of the 20% target so they were additional to the GWh target but not the percentage target
- During the carbon pricing years, voluntary renewables were never established to achieve national additionality above what would be delivered from carbon pricing.
- In 2014 the Government reduced the GWh target to just achieve what it called a real 20% which included all voluntary renewables. All of the additional gains from voluntary renewables were extinguished.

- In 2022 the Climate Bill has included all voluntary efforts including from accredited renewable electricity, small scale and household renewable electricity and carbon offsets as part of Austra;lia's Nationally Determined Contributions (NDCs), not as additional to the NDCs.

There is little point in GreenPower focussing on additionality when this aspect is already compromised for the foreseeable future.

The focus should now be on ensuring that renewables are legally allocated to customers and not double counted. This should be through a single framework under the federal jurisdiction that applies to all customers.

5.3.2. Actions to increase additionality

LGC vintage requirement - limiting the validity of certificates

Consultation Question

13 Should a vintage requirement for GreenPower certificates be considered in the long-term design of GreenPower, and why?

The concept of using the derivative LGC as a separate commodity is the cause of renewables being charged as a penalty cost rather than as a different product.

Because LGCs don't incorporate 'use of renewables' or 'zero electricity emissions' their current role as assurance is false

Generator age limitation

Consultation Question

13 Should GreenPower consider a generator age limit approach? If so, why?

Q 13 Response

No.

New renewables are created from old infrastructure.

A true market lets customers make the choices rather than federal and state governments restricting supply and choice.

Certification of new projects only

Consultation Question

14 Should GreenPower restrict participating generators to new projects only? And if yes, why?

15 How well would this option deliver on the GreenPower mission and objectives? Does this differ for households, small and large businesses?

Q14 Response

No

A customer focus would concentrate on making renewable electricity available to customers at a fair price. GreenPower customers are not investors, they are consumers.

5.4 Actions to increase demand

5.4.1 Partner promotion strategy

Consultation Question

17. ***Which organisations would be most suited to partner with GreenPower to drive awareness and uptake of GreenPower, and why?***

18. ***Would you support GreenPower increasing program fees so that the program manager can increase its marketing and promotional activities?***

Q17 Response

GreenPower may not be promoted because of the lack of integrity and legitimacy in the scheme design. Many retailers rely on the promotion by the GreenPower Program and Clean Energy Regulator's advice on LGCs in describing what GreenPower is, rather than providing information directly. In this way, any concerns regarding Australia's consumer law and disclosure seem to be avoided.

Q18 Response

Not supported.

Rebranding does not fix the legal and accounting issues or the pricing structure that need to be fixed in collaboration with DCCEEW.

5.4.2 Should GreenPower providers be able to sell other green products?

Consultation Questions

19. ***Should retailers be blocked from joining GreenPower if they sell green products that are not linked to renewable energy generation?***

20. ***What other changes to the program could provide the same level of clarity for consumers?***

Q19 Response

No, GreenPower should fix GreenPower.

Q20 response

The reforms required for GreenPower to operate with integrity include:

Market-based accounting should be integrated into Australia's Climate Change Accounting Law, which is the National Greenhouse and Energy Reporting (NGER) Framework via the NGER Determination.

- Market based accounting should be established via the legislated NGER Framework and apply for all renewable electricity customers.
- The framework should align with the GHG Protocol Scope 2 guidance, including the eight Quality Criteria shown in Table 7.
- Those not buying renewable electricity should be reporting their electricity emissions using the Residual Grid Mix Factor for all public claims.
- State average Scope 2 emission factors should be discontinued in favour of market based accounting.

5.4.3. Marketing guidelines and compliance

Consultation Questions

21. Should GreenPower set strict requirements for how providers promote GreenPower and onboard GreenPower customers, i.e. how easy it is to get GreenPower?

- Australia's consumer law requires adequate disclosure of product attributes. Currently, consumers are not being adequately informed about GreenPower, LGCs and the attributes that they do not have.

5.5 Actions to improve consumer choice

Consultation Questions

22. Are there any other customer segments that are unable to access GreenPower?

23. How can GreenPower support more flexibility for small energy users to purchase small quantities of GreenPower, such as for embedded network customers?

Q22 Response

GreenPower is unfairly priced and largely unaffordable for most customers.

5.6 Generator accreditation

Consultation Questions

24. Should GreenPower reduce its accreditation requirements, or make them stricter; and what do you think is the benefit of either approach?

25. What are the most important aspects that GreenPower should consider in its generator assessment?

Q 24 Response

Some environmental approval processes are not sufficiently protecting the environment or are associated with other forms of double counting.

GreenPower should preclude

- Wood waste projects associated with native forests
- Solar Projects that have cause land clearing
- Pumped hydro projects that harm native vegetation or groundwater ecosystems
- Any GreenPower creation from renewables use that has already been claimed on site, behind the meter.

5.7 Additional options GreenPower could pursue

5.7.1Retailer star rating system for renewables and emissions

Consultation Questions

26. Do you see value in an official environmental rating for electricity retailers, and in GreenPower developing this rating?

27. How could this be made administratively efficient and commercially attractive for retailers that perform well environmentally?

Q 26 Response

No

Consultation Questions

28. What would the minimum fund size need to be to provide material incentives for industry participation in auctions?

29. How could the fund's emissions reductions be allocated to investors or GreenPower customers'

Q 27 Response

All attention should be on fundamental market based reforms to support end user renewables.

5.7.2 Scope 2 emissions fund

Q 28 Response

Absolutely reject.

GreenPower customers are trying to buy renewable electricity. They are not investors.

Project developers can attract investment for projects based on demand for their products.

GreenPower can increase this demand by advocating for legislated market based reforms.

Q 29 Response

Paying a fair price for renewable electricity is the focus of consumer needs.

5.7.3 Real-time 24/7 load-matching

Consultation Questions

28. How important is 24/7 renewable electricity coverage to businesses in Australia? Are companies prepared to pay more than normal GreenPower for a 24 / 7 load-matched product accredited by GreenPower?

Q28 Response

Real time load matching something that could be the focus of an individual Power Purchase Agreement but should not be a determining factor of GreenPower accreditation. There is a risk when different logics are applied to claim renewables use. Time of day concepts could only work if the idea of renewable electricity certificates was abandoned

1. Did we forget anything?

Consultation Questions

31 In your experience with GreenPower, is there anything else that could be done to improve the efficacy and effectiveness of the program?

Q 31 Response

The key areas where the GreenPower Program should focus attention on are:

- It is acknowledged that the GreenPower Steering Group does not write Federal Government Policy. However, there is a need to disclose to consumers that GreenPower lacks a legal foundation to allocate 'renewables use' and 'zero electricity emissions' to customers. GreenPower is also 100% double counted and charges its 100% renewable customers for 145% renewable electricity.
- It would be irresponsible for GreenPower to try to ignore these glaring policy failures for another 7 years.

APPENDIX 1

2010 GreenPower Review Submission

Not the best work but could almost have been written yesterday and is worth noting just to highlight more than a decade of delay of market based reforms

Submission to the National GreenPower Steering Group on the National GreenPower Accreditation Program: Program Rules Version 6, January 2010

Tim Kelly 22 February, 2010

Private Citizen and a 100% GreenPower Contributor

Dear National GreenPower Steering Group,

I am pleased to provide the following comments and suggestions on the 2010 Program Rules.

GreenPower is currently a Donation Scheme and not a Product Scheme

The 2010 Program Rules continue to promote GreenPower as products that an individual or business can buy, when in fact under Australia's renewable energy and greenhouse accounting laws and supporting documents, no such mechanisms exist. Contributors to GreenPower do not receive any attributes above standard electricity. The '*reduced emissions'* and *'use'* attributes associated with additional renewable energy caused by GreenPower contributors are allocated to all electricity customers in proportion of their electricity use and not the GreenPower supporter. Until or unless this underlying accounting problem is fixed, GreenPower will continue to operate as a donation mechanism only.

In February, the UK Office of the Gas and Electricity Markets (OFGEM)(2010) released its Certified Green Energy Scheme. Under the Frequently Asked Question 8, "*Is it possible to get '100% Green Electricity' through the Scheme*?" OFGEM describes that under the scheme:

> *"Your supplier may have contracted with renewable generators to buy volumes of electricity that match that your use. However, the electricity coming out of your socket is the same, and is not altered by moving to a green tariff.* ***Similarly, the carbon emissions that physically result from your electricity use will not be reduced by switching tariffs – they will just be notionally reassigned to other customers. Ofgem therefore thinks that claims stating a customer will consume 100% renewable electricity, through a green tariff, are misleading***.

Both countries use the physical allocation approach for Scope 2 emissions yet OFGEM have gone a step further than GreenPower in explaining that the legal allocation of attributes "reduced

emissions" and "consuming renewable energy" are not allocated to persons supporting their Green Energy Scheme.

Whilst the marketing approach in the UK could still be improved, it is more open and transparent compared with the Australian situation promoted via the GreenPower website with its key message *"Switch to GreenPower and reduce your greenhouse gas emissions today"* (GreenPower, 2010).

Comment - In relation to the fundamental shortcoming in the GreenPower Scheme that the concept is not supported by law, the GreenPower Steering Group should ensure that the Program Rules and Website disclose to customers describe the workings of the GreenPower Scheme under Law in full and without green spin and various contradictory messages.

There is a solution to the GreenPower Accounting problem

I have described an alternative model (see Attachment 1), to allocate scope 2 emissions, renewable energy use and related costs to end use electricity customers and believe that such an approach will be necessary for GreenPower to continue in a low carbon economy.

The GreenPower Steering Committee (including its observer representation from the Federal Government) may consider the need for accounting reform against the alternative disclosure that the GreenPower Program works only as a donation mechanism.

In brief, the Kelly Model for assigning Scope 2 emissions involves:

- Netting the non fuel burning renewables out of the State Grid factors
- Legally allocating the attributes of "*zero scope 2 emissions"* and "*use of renewable energy*" with Renewable Energy Certificates.
- Separation of renewable energy and fossil fuel components in customer billing with a zero scope 2 emissions factor for the renewable component and an average fossil fuel scope 2 grid factor for the standard electricity component from non renewable sources.
- Minimum renewable power percentages (RPP) to be shown on customer bills and charged accordingly.
- Any additional voluntary renewable energy shown above the RPP and charged accordingly
- Defining 100% Renewable Energy Consumption as the RPP + the balance to equal 100% (with transmission losses taken into account the same way that is currently done for standard electricity).
- Establishing a principle of no double counting of scope 2 emissions.

Section 3.11 Treatment of System Losses - Defining 100% Renewable Energy Contribution

The new 2010 Program Rules whilst making mention of system losses, fail GreenPower supporters in not defining a common understanding of what entails a 100% renewable energy contribution.

Under the Kelly Model of allocating renewable energy, reduced emissions and costs to end use customers, the transmission losses for GreenPower contributors would be addressed in exactly the same way that standard electricity is managed now. That is for end use consumers to pay for the electricity and/or renewable electricity lost in transmission (typically adding a cost to cover around 7% of the electricity volume sent out that is lost in transmission). It must also be accepted that around 7% of renewable energy certificates must be surrendered as transmission losses for GreenPower contributors if the scheme is to have overall credibility.

With the transmission losses dealt with, then a 100% renewable energy contribution for GreenPower supporters would comprise of the Renewable Power Percentage (as it applies differently to customers that do or do not have RET exemptions) plus the balance to make up 100%.

Without defining how GreenPower should deal with system, GreenPower supporters will remain in confusion, disagreement and exposed to changing costs.

Comment - The GreenPower Steering Committee should consider the scale of financial uncertainty for larger GreenPower contributors caused by not defining the treatment of system losses when contributing to GreenPower.

Section 3.4 Minimum Percentage Requirement of Accredited GreenPower in Blended Products

The minimum 10% (approximate) GreenPower content in contribution types is really too small. Such token contributions make the numbers of GreenPower customers look impressive at first glance but when it is considered that around 10% is a small proportion of an electricity account, then the nearly one million GreenPower customers really becomes an over-statement. Many retailers offer 10% GreenPower at no extra cost and lure customers into believing that they are making a difference, yet the difference is trivial. The requirements under the program rules actually encourage green tokenism.

Suggestion - The voluntary contribution be described in meaningful blocks above the minimum RPP requirement as follows:

Minimum GreenPower = RPP + a 25% voluntary contribution.

50% GreenPower = RPP + a 50% voluntary contribution

75% GreenPower = RPP + a 75% voluntary contribution

100% GreenPower = RPP + the balance voluntary contribution to achieve100%

In addition, the Annual GreenPower Performance Report should disclose the numbers of each type of renewable energy contributor (25%, 50%, 75% or 100%).

Section 4 -GreenPower Product Marketing Criteria

As previously described, GreenPower is a donation scheme and the word "products" should not be used for contributors donating to renewable energy generation that is allocated to all consumers in proportion of use. The analysis of whether such actions are considered to somehow offset personal impacts on climate change should be left to the individual householder or business once they have been provided with the facts on how GreenPower works in law.

Section 4.4 -Provision of Information to Customers

Comment – Unless the accounting system is reformed, the GreenPower Program Rules should guide retailers in providing information to electricity consumers showing that their personal greenhouse gas emissions have not been reduced and that they have not consumed renewable energy in a legal sense when contributing to GreenPower (As per the UK approach). The guide could show how the generation has served to reduce emissions of all electricity consumers.

Comments relating to the NGPSG Charter

In relation to the NGPSG Charter Mission:

> *Delivering effective strategic management of the National GreenPower Accreditation Program through widespread collaboration with all relevant stakeholders on accreditation and policy issues to guarantee program integrity, consistency and credibility.*

Comment: There is a problem with the fundamental integrity of the GreenPower program caused by the program not being compatible with the National Greenhouse and Energy Reporting System and this matter does need to be addressed.

Comment: GreenPower contributors are relevant stakeholders yet there are no formal mechanisms under the GreenPower Charter to ensure representation of those that pay for the GreenPower scheme. The Steering Group should provide an avenue for householders and businesses to have genuine interactive representation on GreenPower issues as they apply to electricity customers.

Transparency could also be improved by making consultation submissions on GreenPower documents publicly available on the GreenPower website where these are not nominated as confidential.

The NGPSG has a charter responsibility to address and resolve strategic and policy issues as they arise. Matters as fundamental as the double counting of every MWh of renewable energy under the GreenPower Program and the GreenPower website marketing that tells contributors that they can reduce their personal emissions when this is not possible under Law, are significant strategic and policy issues that must be resolved.

The Kelly Model of assigning

Scope 2 greenhouse gas emissions, renewable energy use and related costs to electricity customers

Tim Kelly

University of Adelaide

School of Geographical and Environmental Studies

Version 2 – ***22 February, 2010***

The Kelly model of assigning Scope 2 Greenhouse Gas emissions renewable energy use and related costs to electricity customers

Abstract

In Australia, North American States, the United Kingdom and other parts of the world, greenhouse gas emissions associated with the use of electricity (caused by the creation of electricity from various sources including fossil fuel burning) are currently allocated amongst all electricity customers in proportion of their use of electricity. Known as the Physical Accounting Methodology, emission factors are prepared for state or other defined grid boundaries that take into account electricity generation from all sources, including renewable energy and the total amount of electricity sent out into each grid. Customer Scope 2 greenhouse gas emissions are simply determined by the amount of energy consumed by each customer multiplied by the grid scope 2 emissions factor.

In Australia, there is no other method that is accepted under the National Greenhouse and Energy Reporting Act(2007a), or its related documents such as the NGER Technical Guidelines (2008), or the NGA Factors Accounts (2009b).

As a consequence of the physical accounting approach, programs such as the GreenPower Accreditation Scheme and the voluntary surrender of Renewable Energy Certificates to the Australian Government are simply donation schemes. Current schemes are not true mechanisms for customers to buy or use renewable electricity, and do not reduce customer emissions. Additional problems come into play with mandatory renewable energy schemes and carbon costs that are being and will be increasingly be passed through to customers who are led to believe that they have purchased renewable energy free of emissions.

The Kelly Model of allocating scope 2 emissions, renewable energy and costs to customers provides a better way which takes into account the level of customer contribution for renewable energy. The Kelly model provides foundation for the fair allocation pass through costs of a future emissions trading scheme or tax, and the current minimum Renewable Energy Percentage required under the Renewable Energy (Electricity) Act (2000).

The Kelly Model has been developed as an accounting solution for three areas of allocation uncertainty (renewable energy, reduced emissions and related pass through costs) and can serve to integrate greenhouse legislation, renewable energy legislation and cost fairness. Householders and businesses customers would for the first time be able to truly buy renewable energy, and legally receive its attributes of '*use*' and '*lower or avoided emissions'*, avoid carbon costs and make claims with legal confidence.

Contents

1. Introduction 11
2. Australia's renewable energy accounting 11
   2.1. National Greenhouse and Energy Reporting (NGER) 11
   2.2. Renewable Energy accounting July 1, 2008 – Present [January 2010] 12
      2.2.1. The NGER Technical Guidelines 12
   2.3. Renewable Energy accounting and the Mandatory Renewable Energy Target (RET) and Expanded RET. 13
      2.3.1. Renewable Energy Certificates 13
3. The GreenPower Program and NGER Law 13
4. Renewable Energy and the Carbon Pollution Reduction Scheme (CPRS) 13
   4.1. Effectiveness of Voluntary Renewable Energy under the CPRS 14
   4.2. Comparative Costs of Renewable Energy to retail customers under the CPRS 14
5. Assigning Scope 2 Greenhouse Gas Emissions to electricity customers- 14
   5.1. Current Policy (Pg 306 NGER Technical Guidelines (2008) & Pg 310 (2009). 15
   5.2. A Better Option - The Kelly Model of Assigning Scope 2 Greenhouse Gas Emissions to electricity customers. 15
      5.2.1. Scope 2 Greenhouse Gas Emissions and Renewable Energy allocation under the Kelly Model 15
      5.2.2. Scope 3 Greenhouse Gas Emissions and Renewable Energy allocation under the Kelly Model 16
   5.3. Renewable Factors 17
   5.4. Assigning Emissions to Customers 17
   5.5. Allocating Carbon and RET pass through costs under the Kelly Model 18
   5.6. Future extensions to the Kelly Model - Progressive shift towards an accounting system that supports contract accounting as well as a default grid mix that excludes both renewables and contracted low emissions energy. 18
6. Conclusion 19
7. Appendix 1 21
   7.1. No Change should not be an Option 21
      7.1.1. VCMA Discussion Paper 21
      7.1.2. Retirement of Australian Emission Units without fixing the underlying problems 21
      7.1.3. Surrender of Australian Emission Permits. 21
      7.1.4. Future recognition of GreenPower under the proposed CPRS 23
   7.2. Awareness of the problems associated with renewable energy accounting in Australia 25
   References 27

Introduction

The concept of voluntary purchasing of renewable energy has been promoted by State Governments under the voluntary GreenPower scheme. The take-up by households and businesses has been considerable. In September 2009, the GreenPower Quarterly Report (Department of Industry & Investment NSW, 2009) showed that there were approximately 984,024 household and business customers contributing to renewable energy via the GreenPower accreditation program. GreenPower sales for an additional 1,979 GWh which represented almost 25% of additional renewable electricity above mandated levels of the 8100 GWh legally required in 2009. Further voluntary contributions to renewable energy are also achieved through the voluntary surrender of Renewable Energy Certificates directly to the Office of the Renewable Energy Regulator , separate to the GreenPower Scheme. In total, the Voluntary Surrender of RECs from both the GreenPower and ORER direct schemes amounted to 2,400 GWh in Calendar Year 2008 (Commonwealth of Australia, 2009b).

There are however growing concerns about the integrity of renewable energy frameworks due to an absence of transparency around key aspects of renewable energy policies such as when different voluntary actions by individuals and even states are additional to mandatory targets or merely contribute to achieving mandatory targets, or whether they cause more or less renewable energy.

Australia's renewable energy accounting

To understand renewable energy accounting, there is a need to define aspects and units that are or should be counted including:

1. Electricity produced from renewable energy sources (MWh)
2. Use of renewable energy that has been produced from renewable energy sources (MWh).
3. Life cycle emissions associated with producing renewable energy (Tonnes CO_2-e)
4. Low or Avoided emissions associated with producing and/or consuming renewable energy compared with other sources (low or avoided tonnes CO_2-e)
5. Legal ownership of 'use' and 'avoided emissions' associated with renewable energy.

National Greenhouse and Energy Reporting (NGER)

The *National Greenhouse and Energy Reporting (NGER) Act 2007* was initiated through the Council of Australian Governments in 2006 and established under Commonwealth Law in 2007. The Department of Climate Change identifies that the NGER Act establishes a national system for reporting greenhouse gas emissions, energy consumption and production by corporations from 1 July 2008.

The NGER Explanatory Memorandum (Commonwealth of Australia, 2007b) covered four specific objectives in more detail, including :

- To provide a single, cooperative, streamlined reporting system for greenhouse and energy data across all jurisdictions…..;
- To provide for the removal of current, and avoidance of future, duplicative reporting requirements;

- To provide greenhouse and energy data that are nationally consistent, robust and comparable across jurisdictions to inform decision making on greenhouse and energy policy and actions by government and business; and….

There is a significant distinction to be clarified as to whether the NGER Act and its supporting Regulations and Determination, and NGA Factors Accounts actually underpin Australia's greenhouse accounting including for individuals and household electricity consumers. It has been implied by the Department of Climate Change (2010) that the NGER Act applies to liable Corporations, in which case there is no accounting system for householders, non NGER liable businesses and household electricity and renewable energy customers. It is however arguable that a National accounting system does exist but is not followed for allocating emissions and renewable energy to GreenPower contributors.

Renewable Energy accounting July 1, 2008 – Present [January 2010]

The NGER Technical Guidelines

The *National Greenhouse and Energy Reporting Determination* (2008) was issued as a document that designated methods and criteria for calculating greenhouse gas emissions and energy data under the *National Greenhouse and Energy Reporting Act (2000)*. The first Determination was made on 25 June 2008 and was applicable for the 2008-09 reporting year.

The National Greenhouse and Energy Reporting (Measurement) Technical Guidelines (2008) provided guidance for reporting in line with the NGER Determination, and both of these documents supported the implementation of the NGER Act.

The significant impact of the NGER Technical guidelines with respect to renewable energy was that the documents locked in the physical approach to accounting for renewable energy under the NGER Legislation framework. From this point on, all electricity purchased from state electricity grids was standard grid electricity regardless of what it was called.

The Guidelines under Section 7.2 describe that:

> *"The state-based emission factor calculates an average emission factor for all electricity consumed from the grid in a given state, territory or electricity grid. 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".*

Note that:

- the wording applies to individual consumers and does not in any way distinguish between NGER liable corporations or non NGER liable businesses or households; and
- the wording not only covers the emissions but by implication (and by interdependency), also picks up the aspect of consumption;

So the use aspect and reduced emissions associated with renewable energy were legally assigned to all grid customers and "*No other method is supported*".

Renewable Energy accounting and the Mandatory Renewable Energy Target (RET) and Expanded RET.

Renewable Energy Certificates

Compliance under the RET is based on a currency of Renewable Energy Certificates (RECs) which are proof of generation certificates. As previously described, the attributes of RECs are not actually defined in the legislation however, the Act does describe how they are created in Division 4 Sub division A, Section 18, describing that "*(1) The nominated person for an accredited power station may create a certificate for each whole MWh of electricity generated by the power station during a year that is in excess of the power station's 1997 eligible renewable power baseline."*

The Act allows for solar hot water heaters (SWH) and more recently, heat pumps to create RECs, and from 2010 to 2020 the Act also allows Waste Coal Mine Gas (WCMG) generators to create RECs irrespective that such electricity is from non-renewable fossil fuel sources. Adjustments to the annual levels of renewable energy have therefore been made to increase the target to allow for WCMG until 2020 such that the true renewable component is preserved.

The GreenPower Program and NGER Law

GreenPower is fundamentally based on the voluntary surrender of RECs in contracts that are linked to electricity consumption or in block products without electricity.

With the treatment of renewable energy under NGER Law, the GreenPower accreditation program can only be a donation scheme rather than a procurement scheme because customers receive no attributes in addition to any standard electricity.

As a result of current marketing, GreenPower and reduced emissions are typically double counted with the first count being the allocation to all customers under NGERS and the second count being the belief of GreenPower customers that they are consuming renewable energy in a contract sense and reducing their personal emissions.

Renewable Energy and the Carbon Pollution Reduction Scheme (CPRS)

Under the proposed Carbon Pollution Reduction Scheme (Commonwealth of Australia, 2009a), the pre existing problems of renewable energy will continue, and more problems are introduced for the GreenPower Scheme.

Effectiveness of Voluntary Renewable Energy under the CPRS

Due to the way the CPRS being based on a cap and trade concept, voluntary renewable energy use would no longer automatically reduce Australia's emissions, but would instead free up permits that would be used by other emitters. The Australian Government (November 2009a) recognised the problem of the CPRS on the effectiveness of voluntary action and in response proposed changes to recognise GreenPower sales above 2009 levels (possibly by reducing Australia's National Cap on emissions).

Initially this recognition was only to be made for GreenPower sales above 2009 levels and was subsequently changed to recognise all GreenPower sales, including those of nearly one million 2009 voluntary GreenPower customers.

It should be noted however that the method to recognise GreenPower has not been finalised. Recognition may be undertaken after 5 years (in 2016) and as pointed out by Fear and Dennis (2009), the Government has stated that it will not change the 2020 target range in any way.

Comparative Costs of Renewable Energy to retail customers under the CPRS

For most customers, the current absence of a fair pass through cost guideline by the Federal Government lends itself to the charging of renewable energy to GreenPower contributors twice. Under the current approach customers first buy a standard electricity product and secondly pay a green surcharge (or strictly speaking, a donation component) towards GreenPower.

In charging for a standard electricity product first, renewable energy customers already pay mandatory RET and in the future would pay for CPRS charges. They then pay for the renewable energy donation on top of the mandatory charge charge.

Standard electricity customers will be allocated the benefits of the additional GreenPower sent into the grid yet won't be charged for the benefits. Standard customers will avoid the carbon costs that are being paid for by GreenPower customers.

Unfairness is introduced because the charges allocated to GreenPower customers include costs for attributes that they have already paid to avoid. As carbon and RET costs increase, so too does the retail price to renewable energy customers so that the voluntary renewable energy market mechanism is not truly cost reflective.

Assigning Scope 2 Greenhouse Gas Emissions to electricity customers-

Compared with current renewable energy and greenhouse accounting policies, there is a better model that can deal with assigning scope 2 emissions to electricity customers in a way that reflects customer purchasing choices, and way to facilitate fair pass through costs for renewable energy and future carbon penalties.

Current Policy (Pg 306 NGER Technical Guidelines (2008) & Pg 310 (2009).

"***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*".**

Known as the *Physical Accounting Approach*, this includes all renewables in the grid and prohibits the concept of buying renewable energy for use and reduced emissions from the grid. The approach also prevents the transporting of low emissions and recovered energy within network facilities where there is use of the National grid.

A Better Option - The Kelly Model of Assigning Scope 2 Greenhouse Gas Emissions to electricity customers.

Scope 2 Greenhouse Gas Emissions and Renewable Energy allocation under the Kelly Model

The Kelly model of assigning Scope 2 greenhouse gas emissions provides an integrated solution that deals with fairly allocating renewable energy use, reduced emissions and related costs for standard and renewable energy customers. The Kelly Model can be implemented via changes to the NGER system and National RET legislation giving customers real products that are underpinned by law.

Just as consumers acknowledge their obligations to pay specific retailers for their electricity contracts despite not being able to distinguish between electrons fed into the grid, it is entirely feasible for Australia's accounting frameworks and consumers to accept GreenPower '*use'* and '*emissions allocations'* based on a contractual approach rather than the physical accounting methodology.

The Kelly model involves:

- Netting the non fuel burning renewables out of the State Grid factors
- Legally allocating the attributes of "*zero scope 2 emissions"* and "*use of renewable energy*" with Renewable Energy Certificates.
- Separation of renewable energy and fossil fuel components in customer billing with a zero scope 2 emissions factor for the renewable component and an average fossil fuel scope 2 grid factor for the standard electricity component from non-renewable sources.
- Minimum renewable power percentages (RPP) to be shown on customer bills and charged accordingly
- Any additional voluntary renewable energy shown above the RPP and charged accordingly
- Defining 100% Renewable Energy Consumption as the RPP + the balance to equal 100% (with transmission losses taken into account the same way that is currently done for standard electricity)
- Establishing a principle of no double counting of scope 2 emissions.

In separating renewable energy accounting from the emissions factor that covers the mix of fuel burning sources of electricity, the Kelly Model integrates a '*No double counting principle'*, such that no two consumers would claim reduced scope 2 emissions for the same MWh of renewable energy produced. This principle can serve as the essential checking mechanism to ensure the integrity of the accounting system.

The GreenPower program excludes most fuel burning renewables and those that it does include (from biogas and landfill gas) are typically assigned a zero CO_2 value anyway.

If the Kelly Model were adopted, customers buying GreenPower or GreenPower RECs would receive entitlement for the '*use of renewables'* and '*reduced scope 2 emissions'* for renewable purchases.

The concept is '*cost reflective'* as GreenPower customers would not pay for future Carbon Pollution Reduction Scheme or carbon tax costs, and those not paying for renewable energy would no longer receive lower emissions benefits including the GreenPower paid for by others. States that sell renewable energy across borders would no longer claim lower electricity use emissions from the renewable energy that has been exported as RECs.

The concept would work best for renewable energy in bundled contracts and would support GreenPower market products to exclude carbon costs. Customers would make up the difference between their minimum renewable component required by law and 100% but not pay for more than 100%.

Under the proposed Carbon Pollution Reduction Scheme or a carbon tax, Corporations are not required to reduce scope 2 emissions or have permits for scope 2 emissions so there would be no direct impact on mandatory costs. There would be a small correction to their reported scope 2 emissions, as they would no longer receive a scope 2 free ride from GreenPower customers.

For customers that buy RECs for voluntary surrender or in GreenPower *Block Products* (that don't include the electricity), then they could claim use of renewable energy and reduced emissions, but would not achieve any cost advantages that would be possible with bundled contracts. In essence, The Kelly Model provides a fuel switching concept rather than an offset. Even so, when purchases and voluntary surrender of GreenPower and/or RECs without electricity could still continue.

Scope 3 Greenhouse Gas Emissions and Renewable Energy allocation under the Kelly Model

Scope 3 Greenhouse gas emissions relating to energy use should deal with life cycle greenhouse gas emissions mostly associated with the construction of renewable energy infrastructure and transmission losses between the source of renewable energy and the consumer.

There may also be additional emissions in managing the intermittency of renewable energy sources as a form of "greenhouse interest". Acknowledging that all sources of energy contributing to energy grids are intermittent, at times when renewable energy sources are *under generating*, fossil fuel sources are used to keep the electricity grids working. At other times when renewable energy systems are *generating excess*, the grid is paid back and less fossil fuel is used. Averaged over a year, the renewable energy sources have contributed electricity and reduced emissions. There is however a degree of inefficiency caused when fossil fuel generation sources may be run at greater spinning capacity to cover periods where renewable generation is less certain, and this could be covered by a scope 3 emissions component.

Under the Kelly Model, the NGA Factors would need to address other indirect emission components (Scope 3) covering:

1. Life cycle construction and disposal emissions for renewable energy infrastructure
2. An average transmission percentage loss appropriate to the Australian state.
3. A renewables greenhouse interest to cover the emissions caused by fossil fuels operating a higher spinning capacity compared with a grid with no renewables (known as firming up). For renewable energy, some emissions can result, taking into account that coal can back up renewables, gas generation is suited to backing up wind sources. An assessment should also consider that renewables can also back up renewables, for example, Hydro can back up wind) and at times renewables can back up fossil fuels.

Given that current scope 3 emission factors published by the Department of Climate Change do not include life cycle emissions for constructing and disposing of power generation plants, this scope 3 component should only be added to renewables when it is applied equally to fossil fuel infrastructure.

Transmission losses could be addressed by defining consumer renewable energy use in a way that takes into account electricity that is lost in transmission. This value is already nominally applied at around 7% in determining scope 3 emissions for current standard electricity and is no different for renewables. Just as when customers pay for electricity as read at their meter, they are actually charged for electricity that is also lost in transmission, renewable energy provided to a customer should be charged and assigned so that the customer has covered the transmission losses. An emissions factor for transmission losses would not therefore be required.

Renewable Factors

The Renewable Factor covering scope 2 emissions ($EF_{R\ Scope\ 2}$) for non fuel burning and zero value fuel burning renewables such as from landfill and biogas would have a value of zero. The Renewable Factor covering Scope 3 emissions ($EF_{R\ Scope\ 3}$) should cover the life cycle components when introduced for all energy sources, and for any firming up as described in section 0.

Assigning Emissions to Customers

A customer that buys standard electricity is paying for a minimum renewable amount and the rest is electricity from the burning of fossil fuels (and pre 1997 renewables). The minimum renewable amount is more than the Renewable Power Percentage (RPP) for normal customers and less for EITE industries partially exempt from the mandatory Renewable Energy Target.

Under the Kelly Model, the minimum renewable component would be assigned zero scope 2 emissions, whilst the remaining fossil fuel and old hydro mix would be assigned emissions at the State grid factor for fossil fuels ($EF_{standard}$).

If a customer then seeks to buy 100% renewable electricity this should comprise of the minimum mandatory requirement and the balance to equal 100% (including sufficient renewable energy purchased by the retailer to cover transmission losses as is done currently with all electricity).

The following table shows how greenhouse gas emissions would be applied to customer bills under cost reflective accounting.

Table 1: Customer billing methodology (scope 2)

Type of customer	1. Renewable emissions	2. Standard emissions	3. Billing emissions
Standard customer	Minimum kWh $_{renewable}$ x EF_R (Always Zero)	Balance kWh $_{standard}$ x EF $_{standard}$	Sum of Columns 1+2
Partial GreenPower Customer	Minimum kWh $_{renewable}$ x EF_R + Voluntary % kWh $_{renewable}$ x EF_R (Always Zero)	Balance kWh $_{standard}$ x EF $_{standard}$	Sum of Columns 1+2
100% GreenPower Customer	Minimum kWh $_{renewable}$ x EF_R + Balance kWh $_{renewable}$ x EF_R (Always Zero)	None	Sum of Columns 1+2

In this way, the renewable energy *use* and *reduced or avoided emissions* allocated to customers would be consistent with the level of customer contribution for renewable electricity.

Allocating Carbon and RET pass through costs under the Kelly Model

A 100% renewable contributor for GreenPower in a bundled contract should not attract carbon costs. (It is acknowledged that they would pay increasing costs for firming up electricity should intermittent renewables grow faster than baseload renewables and other firming up renewables).

Mandatory RET costs would be covered by the mandatory renewable component of their purchase. The voluntary renewable balance should not attract any further mandatory RET costs.

Customers buying RECs only would not be able to avoid mandatory RET and carbon costs in separate contracts. This constraint will however encourage a greater take up of genuine bundled renewable energy contracts to power households, businesses and industry.

Future extensions to the Kelly Model - Progressive shift towards an accounting system that supports contract accounting as well as a default grid mix that excludes both renewables and contracted low emissions energy.

In the longer term, pricing and benefits should reflect the true level of market choice made by customers. The quick fix is to remove non fuel burning renewables from the State Grid emission factor and apply the Kelly model of assigning renewable energy and reduced emissions from renewables.

As Australia transitions towards a market based low carbon economy, further opt-out decisions should be encouraged to support choices to be made by customers for lower emission sources such as electricity from natural gas.

The Kelly Model can be extended to other forms of specific low emissions energy whilst preserving the '*No double counting principle'* for scope 2. Each time a low emissions electricity contract is created in the retail market, the emissions and MWh associated with this source would need to be excluded from the state grid pool so that the standard grid factor is adjusted appropriately.

Unlike voluntary renewables that would be offered to all customers, opt-out contracts for other lower emission sources could be limited to contracts of significant size, until there is confidence by energy producers and retailers in the reporting framework to extend the option. An initial threshold could be set at 25,000 MWh per year for contracts to be documented via the NGERs reporting framework. This would provide an additional mechanism to record lower emission contracts and to to adjust the remaining standard pool emissions factor.

Conclusion

Australia's renewable energy accounting has been outlined in terms of law and emerging climate policies. This paper exposes a disconnect between renewable energy accounting and Australia's National Greenhouse and Energy Reporting Act (2007) which leads on to the GreenPower accreditation scheme to be false and misleading in its marketing material.

Australia's renewable energy and greenhouse accounting laws, policies and schemes do not actually work to support the concept of GreenPower and this has led to a double counting of attributes. What has emerged, as in some other parts of the world are a set of rules and accounting frameworks that are ignored due to an unwillingness to communicate and enforce current unworkable rules.

As many individuals, businesses and Governments support choice for customers to be able to pick renewable energy as their winning option, then there is an imperative to implement reforms so that such actions deliver the benefits to the customer and are additional.

Within Australia's economy, The Kelly Model offers a better accounting option that segregates the renewable energy low emissions benefits from the State grid factors for standard electricity. If adopted, this approach would support a cost reflective accounting such that customers that pay for renewable energy actually receive legal entitlement to renewable energy '*use'* and '*reduced emissions*' attributes, and would be protected against paying for greater than 100% renewable energy and future CPRS carbon costs.

Whilst some have suggested that the impact of segregating renewable energy from the state grid factors would be small, it is important to understand that GreenPower benefits of 'use' and 'reduced emissions' are fully double counted in marketing and for approximately 1 million current GreenPower customers, causing a serious disregard for the Trade Practices Act 1974. Furthermore, the future success of climate change action is likely to require the combined efforts of both voluntary action and mandatory carbon constraints on greenhouse polluting activities to deliver changes that are required. The voluntary market sector cannot fully develop when there is knowledge of widespread double counting, inadequate disclosure to customers and policy contradictions that cause some actions to be futile.

States and the Federal Government represented on the GreenPower Steering Committee do have an opportunity to encourage reforms that would fix the basic rules and accounting systems for GreenPower (both within the economy for customers and at the National level) so that a future low carbon economy will reach its full potential, regardless of Australia's national greenhouse targets and which mandatory constraint mechanism is adopted.

Appendix 1

No Change should not be an Option

In this section, the consequences of no change to the current accounting system are outlined.

If *No Change* is adopted, to prevent double counting and breaches of the Trade Practices Act (1974), all consumers and stakeholders should be advised that renewable energy such as GreenPower and Renewable Energy Certificates surrendered to the Office of the Renewable Energy regulator, work only as donations to reduce the emissions of all electricity users. Infrastructure cannot be powered with renewable energy from the grid and no infrastructure can be claimed to be low emission or carbon neutral based on renewable contracts via the electricity transmission grid without double counting the avoided emission benefits.

GreenPower should only be marketed as a mechanism where businesses and individuals can donate to renewable energy generation.

VCMA Discussion Paper

Interestingly, the Voluntary Carbon Markets Association of Australia (VCMA) (Shuey, 2009) have presented a Discussion Paper noting both issues associated with accounting, and failure to integrate renewable energy options into Australia's National Carbon Offset Standard. Shuey presents various options relating to whether renewable energy could be an offset or fuel switching mechanism under the CPRS and NCOS, based around the use of state grid factors and discounts.

Rather than fixing the accounting problem however, the VCMA have instead identified the "*Issue of GreenPower "double-counting"",* and stated that "*It is therefore perhaps a matter for the department of Climate Change to consider*".

The VCMA do not appear to appreciate any need for an accounting system to underpin any solution to GreenPower and renewable energy trading, whether the schemes will ultimately work as fuel switch products, offsets or even just as a donation as it is now. Without a single accounting framework that covers emissions benefits as they affect both individual customers and Australia's total emissions, it is easily argued that renewable energy schemes are not valid.

Retirement of Australian Emission Units without fixing the underlying problems

There is a variation on the do nothing option which involves the Government retirement of Australian Emission Units under the proposed Carbon Pollution Reduction Scheme. On face value this option has been presented as solving GreenPower additionality issues yet it does nothing to fix the underlying accounting and double counting problems and instead, if introduced in the wrong way, the proposal could make the situation far worse.

Surrender of Australian Emission Permits.

Significant public discussion on the treatment of GreenPower under the Proposed Carbon Pollution Reduction Scheme has been taking place. This is because of the nature of cap and trade mechanisms that without further intervention, such mechanisms transfer any permits that have been freed up by voluntary

action to be re-allocated by the market for other users resulting in no net reduction of emissions in the economy. Under Cap and Trade approaches, it is only the allocation of permits by the government that can change the volume of total emissions that are released.

The Australian Government has responded to concerns by announcing that the Government will take GreenPower sales into account when setting the Scheme Cap.(Australian Government, 2009a).

It is however important to recognise that this recognition is a second accounting issue related to Australia's total emissions and although it is important, it is a different matter from the accounting of renewable energy within the economy and the allocation of benefits to consumers. One level of accounting deals with National scope 1 emissions and the other deals with customer scope 2 emissions. The two levels of accounting should not be confused. Reforms at one level do not automatically translate to integrity at another level. As this paper is focussed on addressing the Scope 2 emissions aspect, any Government proposal to acknowledge GreenPower with the surrender of Australian Emissions Permits sales, stills falls under this section of '*No Change*' to Accounting".

Futility of using Emissions Permits as offsets under the proposed CPRS

It is also plausible that should the Government seek to acknowledge GreenPower sales in the wrong way, the situation could be made worse causing GreenPower efforts to be futile.

Under a pure cap and trade scheme that covered all of Australia's emissions it would be possible to use the concept of retiring permits as a way to reduce Australia's emissions. The proposed CPRS however includes the following features that fatally compromise such a concept:

- ***No true Scheme Cap*** – The voluntary surrender of permits could not work until there is a cap on emissions in place and no such cap will come into force until 2016. The Government whilst announcing its intention to define a scheme cap for the 2012-13 during in 2010 has also announced that it will be complemented by a price cap operating from 2013-13 to 2015-16. The price cap establishes a potential unlimited supply of emission permits and therefore extinguishes any credibility of the scheme cap that is to be announced.

- ***Voluntary surrender of permits could not work until Australia is operating at the Cap –*** Even if a firm scheme cap was created, experience with cap and trade schemes, particularly with water allocations from rivers, has shown that there are no tangible benefits during periods where the economy is operating below a cap. Using the River Murray as an example, during the current dry conditions of the lower Murray where an irrigator decides not to use water from the river, there is no change as there is not enough water in the river for all allocations to be used. The system is operating below the level of the cap due to other reasons. Similarly if Australia's emissions from covered sectors are less than the scheme cap, the voluntary retirement of permits would make no difference as there would already be

a surplus of permits.

Should covered sectors be operating above the *Scheme Cap* using unlimited permits under the price cap mechanism, then there would no longer be any integrity of the voluntary permits surrender mechanism.

The only situation where the voluntary permits surrender would work is under conditions of a fixed cap where the economy is also causing emissions at or close to the S*cheme Cap*.

- **Creating scarcity cancels freeing up permits.** – In response to criticism about the impact of the proposed CPRS on voluntary actions, the Minister for Climate Change and Water (Wong 2009) has reasoned that:

  > "*The role of traditional voluntary action is to build capacity to reduce emissions, reducing scarcity and lowering permit prices so that the Government can lower the cap in future years*".

  This approach may have merit in the absence of a voluntary permit surrender option, yet is completely contradicted where the voluntary surrender approach is used, as pointed out by Kelly and Brook (2009);

  - *"The concept of voluntary surrender of AEUs (CPRS permits) presented as lowering the cap to reduce emissions, but this will increase scarcity and increase permit prices whilst not improving Australia's capacity to reduce emissions making the situation less feasible for the Government to lower the cap in future years".*

  With cap and trade, greenhouse benefits can only make a difference via the economic system, and when these contradictory approaches are deployed within the system, benefits are cancelled. The voluntary surrender of permits (creating scarcity without building low emissions capacity) cancels out the benefits of traditional voluntary action such as energy efficiency and avoidance (reducing permit scarcity whilst building tangible low emissions capacity), such that the ability for the Government to lower caps in future years is cancelled tonne for tonne.

- **There is a place for tightening the scheme cap to acknowledge tangible voluntary action.**

  A small number of individual voluntary action types (including from GreenPower) could potentially be recognised by the Government and the scheme cap tightened to acknowledge such actions. Where this approach is undertaken, the tightening of the scheme cap removes the permits that would be freed up by the voluntary action such that there is a neutral impact on permit availability/ scarcity in the economy and therefore a neutral impact on the situation for Government to make decisions about lowering the Cap in future years.

Future recognition of GreenPower under the proposed CPRS

Keeping in mind that the Government has committed to taking GreenPower into account at a National level under its proposed CPRS, let us consider how this could be done well, or badly.

National Recognition of GreenPower – Done well

National Recognition of voluntary GreenPower sales would best be achieved on an annual basis where Australia's cap on emissions would be tightened annually to reflect sales. No new permits would be issued, there would be a necessary reduction in Australia's Kyoto units and there would also be reforms to fix the underlying renewable energy accounting issues (such as implementing the Kelly Model of renewable energy as it applies to customers within Australia's economy.

There would be open and transparent disclosure of accounting at the national level and at the customer level.

National Recognition of GreenPower – Done badly

Some of the public discussion has suggested that if GreenPower is recognised nationally, there is no further need for accounting at the customer scope 2 level. To understand the shortcomings of this approach it is also necessary to consider entanglement of policies that propose to use Australian Emission Permits as both a permit and an offset.

The worst possible approach to acknowledging GreenPower sales under an emissions Trading scheme would be to complicate the activity by issuing an emissions permit to partner with every tonne of CO2-e saved from the use of GreenPower, or referring to the National Cap tightening as justification of a customer benefit.

The Option not only has the highest risk of self cancellation, but would tangle a National Scope 1 benefit with the Customer Scope 2 Emission saving. Just as in managing three phase power the phases should not be crossed, so to in assigning electricity related emissions to customers, Scope 2 emissions should not be confused or entangled with Government Scope 1 interventions made at a National level.

If there is *No Change*, the emissions benefits of renewable energy are already allocated to all customers in proportion of use under NGERS Law and customer billing. If the retirement of an AEU is then used to justify a GreenPower customer benefit, then double benefits would be allocated to customers in Australia's economy. One of the benefits is founded in reduced emissions whilst the other becomes an unrelated handout of permits to a second party. Cap reductions must maintain an association with only one party or else the result becomes a self-cancelling benefit across two parties (as discussed under section 0) being all customers and the GreenPower customers.

The proposed *Cap Tightening Policy* is therefore *No Action* in terms of fixing renewable energy accounting for customers and indeed poses significant new risks.

Awareness of the problems associated with renewable energy accounting in Australia

The issues associated with renewable energy accounting in Australia are surprisingly absent in mainstream policy debate, yet they are a growing number of businesses and individuals that are concerned and seek reform. Most concerns have been raised in public submissions to the Australian Government in relation to NGER and other climate change related consultation. State and Federal Government websites however show little acknowledgement of such concerns and continue to promote GreenPower as a product that can reduce customer, household or personal greenhouse gas emissions.

The following section is provided to show which organisations have raised some concerns on renewable energy double counting, or the inability to report reduced scope 2 emissions when purchasing GreenPower.

- **National Australia Bank**
  In its submission (2009), on the Discussion Paper for a National Carbon Offset Standard the National Australia Bank raised the issue of renewable energy accounting and clarified three distinct points:

  (i) the current design of the CPRS leaves room for additional abatement without placing undue burden on covered sectors;
  (ii) the extent of any double counting is marginal, given the small percentage of total power consumption that is Green Power; and
  (iii) it can be addressed by removing Green Power purchases from the emissions factor calculations and /or retiring AAUs/AEUs. (See Section 0 for comment on AAU Retirement Option)

- **Local Government Association** (2009)

  The Local Government Association (LGA) in South Australia has raised the GreenPower accounting issues in their submission on the National Carbon Offset Standard.

  The LGA identifies that "The beneficiaries of this reduced state based emission factor are, in turn, all users of the electricity in that state, with the largest relative emissions benefit going to the largest grid power consumers in that state". The submission goes on to state that "In reality, only one user can claim the benefit, and it is strongly considered that in order to ensure the integrity of the Green power market into the future, the issue of double counting needs to addressed as a matter of urgent priority".

- **Local Government – City of Holdfast Bay. Report to Engineering and Environment Committee** (Gregory, 2009)**.**

  In this Report, Gregory identifies the problems of GreenPower double counting, failure of NGERs to recognise renewable energy for customers, and uncertainty of GreenPower under the proposed CPRS. The report recommends the reallocation of $15,000 in funding approved for GreenPower to be allocated to alternative strategies.

- **Water Services Association of Australia (WSAA)** (2009)

  In its submission to the Senate Select Committee on Climate Change (2009), regarding the CPRS – Exposure Draft Legislation, the Water Services Association of Australia called for the adoption of a carbon neutrality definition for use in Australia's government accredited voluntary programs, *"and which accounts for [the] purchase of renewable energy*". WSAA described renewable energy accounting situation as follows

  > *"As the legislation stands there is no incentive for large energy intensive projects such as desalination to procure renewable energy. This is a perverse position as far as WSAA Members are concerned and the community and stakeholders will struggle to understand the logic of this position".*

- **VCMA** (Shuey, 2009) (See Section 0).

Victorian EPA – The Victorian EPA has indicated that it did not count its GreenPower contributions towards achieving its carbon neutral targets in 2008-09, changing its approach used in previous years (Carbon and Environment Daily, 2010).

References

AUSTRALIAN GOVERNMENT (2008) National Greenhouse and Energy Reporting (Measurement) Technical Guidelines IN DEPARTMENT OF CLIMATE CHANGE (Ed.). Canberra.

AUSTRALIAN GOVERNMENT (2009a) Details of proposed CPRS changes. IN DEPARTMENT OF CLIMATE CHANGE (Ed.). Canberra.

AUSTRALIAN GOVERNMENT (2009b) National Greenhouse Accounts (NGA) Factors. IN DEPARTMENT OF CLIMATE CHANGE (Ed.). Department of Climate Change,.

CARBON AND ENVIRONMENT DAILY (2010) EPA Victoria use of GreenPower plummets. 28-1-2009 ed., Carbon and Environment Daily.

COMMONWEALTH OF AUSTRALIA (1974) Trade Practices Act. IN COMMONWEALTH OF AUSTRALIA (Ed.). Comlaw Commonwealth of Ausralia,.

COMMONWEALTH OF AUSTRALIA (2000) Renewable Energy (Electricity) Act IN COMMONWEALTH OF AUSTRALIA (Ed.) *Act No. 174 of 2000 as amended.* Amendments up to Act No. 78 of 2009 ed. Comlaw Commonwealth of Ausralia,.

COMMONWEALTH OF AUSTRALIA (2007a) National Greenhouse and Energy Reporting Act IN COMMONWEALTH OF AUSTRALIA (Ed.) *No. 175.* Comlaw Commonwealth of Ausralia,.

COMMONWEALTH OF AUSTRALIA (2007b) Revised Explanatory Memorandum - National Greenhouse and Energy Reporting Bill IN CHANGE, D. O. C. (Ed.). Canberra, Office of Legislative Drafting and Publishing.

COMMONWEALTH OF AUSTRALIA (2008) National Greenhouse and Energy Reporting (Measurement) Determination. IN COMMONWEALTH OF AUSTRALIA (Ed.) *F2009C00576.* Comlaw, Office of Legislative Drafting and Publishing (OLDP),.

COMMONWEALTH OF AUSTRALIA (2009a) Carbon Pollution Reduction Scheme WhitePaper. IN DEPARTMENT OF CLIMATE CHANGE (Ed.). Canberra.

COMMONWEALTH OF AUSTRALIA (2009b) Office of the Renewable Energy Regulator Annual Report 2008. Canberra.

DEPARTMENT OF CLIMATE CHANGE - COMMUNICATIONS (2010) Re: The text about GreenPower on the DCC webpage is wrong [SEC=UNCLASSIFIED:NO CAVEATS]. IN TO MR TIM KELLY (Ed.). Canberra, Department of Climate Change.

DEPARTMENT OF INDUSTRY & INVESTMENT NSW (2009) National GreenPower Accreditation, Program Status Report. Industry and Investment NSW.

FEAR, J. & DENNIS, R. (2009) Zero-sum game? The human dimensions of emissions trading. *The Australia Institute.*

GREENPOWER (2010) GreenPower Home Page.

GREGORY, P. (2009) GreenPower purchase and solar power installation. *Report to Environment and Engineering Committee.* Adelaide, City of Holdfast Bay,.

LOCAL GOVERNMENT ASSOCIATION OF SA (2009) Submission to the National Carbon Offset Standard. Adelaide, SA, Local Government Association of SA,.

NATIONAL AUSTRALIA BANK (2009) Submission to the National Carbon Offset Standard Discussion Paper. Department of Climate Change Website,, Department of Climate Change,.

OFFICE OF THE GAS AND ELECTRICITY MARKETS (OFGEM) (2010) Green Energy Supply Certification Scheme. IN AUTHORITY, G. (Ed.). OFGEM.

SHUEY, P. (2009) GreenPower treatment for carbon footprint calculations - Post release of NCOS and amendments to CPRS. VCPA Website, Voluntary Carbon Markets Association.

WATER SERVICES ASSOCIATION OF AUSTRALIA (2009) Water Industry submission to the Senate Select Committee on Climate Change on the Carbon Pollution Reduction Scheme - Exposure Draft Legislation.