

Review of Australian Green Power Schemes - 2002

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by

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EXECUTIVE SUMMARY

Green Power schemes enable electricity customers to pay a premium for a certain percentage of their electricity to be generated from renewable sources. They were initiated in order to cover the price differential between conventional and renewable sources of energy and so increase penetration of the latter into electricity markets. The Green Power Accreditation Program was initiated in NSW by the Sustainable Energy Development Authority (SEDA) in April 1997. Its aim is to ensure that products offered by energy suppliers comply to Green Power guidelines, and thereby increase consumer confidence in the Green Power product. As of June 2001, NSW, Vic, Qld, WA, SA and the ACT all had retailers with accredited Green Power products.

While SEDA and the National Green Power Steering Group have assessed the implementation and progress of Green Power, no external review of its operation and outcomes has yet been undertaken. This issues paper begins such a process by summarizing the responses of stakeholders to questions regarding Green Power in Australia. Stakeholders included electricity retailers, generators, consultants, financial institutions, NGOs, CCP councils, and the Green Power National Steering Group. Note that customer input was obtained through third parties (retailers, NGOs and the Steering Committee) and from a literature review of existing public surveys of customers preferences and values, not directly from customers themselves. Separate assessment of customer viewpoints is planned and discussed later. Although reference is made to overseas schemes, emphasis is on the Australian situation. The questions posed to stakeholders were:

- Is Green Power worth pursuing?
- What issues have arisen?
- How can these issues be dealt with?
- What are the alternatives?

Current status

As of 1st January 2000, retailers have been required to source 60% of their Green Power from new sources (since 1st Jan 1997) or from an increase in generating capacity (also since 1st Jan 1997). This proportion is world's best practice and increased to 70% in June 2001, and will increase again to 80% by June 2002. Since 1997, 120 new Green Power-approved generators have been installed or committed including 67 solar, 10 wind, 20 hydro, 1 wave generator and 30 biomass projects. In NSW this equates to investments of almost \$170 million in generation infrastructure to date. The new renewable energy generation purchased through Green Power has steadily increased each year from 74,964 MWh (June 1998), to 128,986 MWh (June, 1999), to 220,343 MWh (2000), to 285,315 MWh (June, 2001).

Over 96% of Australian customers now have access to Green Power, with 15 retailers providing a Green Power product to 59,626 customers: 57,187 domestic and 2,439 commercial (as at Dec 2001). Note that in the 2000–2001 financial year, although business customers made up only approximately 4% of customer numbers, they contributed almost 50% of sales (AA, 2002). Despite market research in Australia and overseas identifying anywhere from 20 to 37% of the sample

population likely to pay the Green Power premium only a fraction of this number actually do. Currently in Australia less than 1% of eligible customers have signed on to Green Power, and these make up an even smaller percentage of total sales (approx. 0.2%).

Three models of Green Power are or were available: Contribution products, which required a specified financial contribution, such as a fixed amount per quarter or a rounding up of each bill; Capacity products, where a fixed amount per month is linked to a specified amount of renewable energy generated; and Consumption products, where payments are based on a percentage of the customer's quarterly bill. In August 2000, accreditation was removed from contribution based schemes, which had by then raised \$153,800. Some schemes continue to operate independently of Green Power. Consumption-based schemes currently comprise the major portion of Green Power sold and hence are the focus of this paper. Nevertheless, properly targeted and managed contribution-based schemes can fulfill a niche role for small scale local schemes and play a role in increasing community awareness by involving customers who may not feel able to make major contributions. Both contribution- and capacity-based schemes de-couple support for renewable energy from consumption of electricity. Capacity-based schemes have only recently been introduced and it will be interesting to see whether their level of uptake is closer to that of contribution or of consumption-based schemes.

Attitudes to Green Power

In order to assess the views of key stakeholders on how they felt about Green Power after four years of its operation, questionnaires were sent out to retailers, generators, consultants, financial institutions, NGOs, selected councils, and members of the Green Power National Steering Group. A literature survey was also undertaken to place the findings in an international context.

It is important to note that customer input was obtained through third parties (retailers, NGOs and the Steering Committee) and from a literature review of existing public surveys of customers preferences and values, not directly from customers themselves. This is a significant limitation especially when existing and potential customers are arguably most critical to Green Power uptake. There is anecdotal evidence indicating active opposition to Green Power from the more environmentally aware sector of society that is strongly in favour of renewable energy, but sees Green Power as political tokenism. Logistically the opinions of potential customers are not easy to obtain, however such consultations could be one focus of a second stage process dealing with issues arising from this report.

Although until late 2000 Green Power customer numbers had been steadily increasing, since then they dropped slightly then leveled off. This has raised questions about whether Green Power should be continued. All retailers and generators who responded thought Green Power was worth pursuing and that for a retailer to remain competitive in conditions of full retail contestability, a Green Power product was a necessity. A number of explanations were offered for Green Power leveling out. These are either not directly related to Green Power, or can be addressed by retailers. However, although there are a variety of methods available for retailers to increase uptake, whether they do so depends very much on whether Green Power has priority as one of their most profitable options. Thus the fate of

Green Power lies not in whether it is worthwhile, but in whether retailers choose to pursue it.

It has also been asked whether MRET has made Green Power redundant. The following reasons were given for why this is not the case. Green Power is still required for;

- (i) funding more expensive types of renewable energy,
- (ii) providing a market discovery mechanism for the value of renewable energy attributes that is independent of a legislative mandate,
- (iii) providing consumer choice and empowering the community to express their support for genuinely 'green' generation sources, and
- (iv) educating the public regarding global warming and renewable energy.

Most retailers placed strong value on being able to refer to the accreditation process, with its stringent environmental and auditing requirements, as proof of their product being genuine. According to retailers and the Steering Committee the accreditation process is seen by customers as being independent, transparent and non-commercial, and as providing clear and unbiased information. However it seems that because Green Power accreditation is not a simple message, it is often not explained to customers.

It was thought the main reason customers choose Green Power is to make a contribution to help the environment. Other advantages were felt to be:

- (i) the option of a small ongoing cost as opposed to a large upfront cost
- (ii) a simple easy decision path where the level of contribution can be tailored to changing personal circumstances
- (iii) suitability for owner-occupiers of flats/units and for rental accommodation
- (iv) not having to be involved in the engineering aspects of self generation, and
- (v) no maintenance requirements.

Respondents considered cost to be the main reason for not joining and for canceling Green Power, with general agreement that the cost should be borne by all consumers, not by a concerned few, and that government should be doing more to reduce greenhouse gas emissions. Some thought that the polluter-pays principle should be followed, and a levy applied instead to non-renewable forms of electricity, making it more expensive than energy supplied by renewable generation. This has also been suggested by a number of others both overseas and in Australia who argue that the cost of a public good should be borne by all that benefit (Denniss, 2000; Rader and Norgaard, 1996). Nevertheless, it is interesting to note that although Origin had the highest premium (4.66c/kWh), it also had the highest take-up rate (just over 3%) while the cheapest (Energex - 2c/kWh), had a comparable take-up rate to other retailers at 1.12%. This lack of a clear relationship between cost and take-up rate is also evident in the US, suggesting that cost is not the only deciding factor. Thus it is possible that premiums could be increased, thereby providing additional funding for other factors shown to increase uptake, such as effective program design and marketing, as well as providing sufficient funds to meet the additional cost of renewable energy, which is thought by generators to be underestimated.

One of the main attractions for businesses to take up Green Power is, as for electricity retailers themselves, to identify themselves as environmentally responsible in order to increase sales and customer loyalty. However, only a limited number of niche businesses believe that Green Power is currently capable of conveying this message to their customers. Other barriers (OMRG, 2001) are:

- Being locked into a contract with their current power supplier,
- Subletting (and therefore lacking choice in power supplier), and
- Cultural barriers - for example, a perception that issues such as Green Power do not fit with the organisation's mission and goals, or the belief that it's 'someone else's' responsibility to investigate such options.

The level of overall commitment, as well as the quality of customer service, varies between retailers and States/Territories. Retailers that are committed and employ strong customer acquisition and retention strategies have a strong product. Retailers who see Green Power as an important element in a fully contestable retail market are emphasising their products. The main problem for retailers was that the price premium was insufficient to cover trading, administrative, auditing and advertising costs. For some retailers this is regulated by Government, others set it themselves, based on their perception of the customer's ability to pay. Some retailers cited acquisition costs of approximately \$100 per customer. In addition, variable customer numbers increased risk and limited long term planning. State specific problems included limited local renewable projects, the accreditation guidelines and other business focuses.

The main suggestions for government to increase Green Power uptake were;

- Removal of GST on Green Power
- Government purchase
- Comprehensive and effective State and Federal government legislation and
- Tax concessions/subsidies targeted at reducing the cost of renewable energy and therefore Green Power.
- General promotion of RE through education campaigns.

The Green Power market

The market for Green Power was thought to be customers who:

- Tend to be home owners as opposed to renters
- Tend to commit to the highest Green Power price option (100% Green Power).
- Comprise older people (+55), and young families
- Have a genuine concern for environmental issues
- Want either to provide the renewable energy industry with financial assistance and reduce greenhouse gas emissions or to protect the environment and 'do the right thing'
- Tend to be much more energy efficient than average.

Other surveys (Artcraft Research, 1999) have found that members of environmental groups are only a little more likely to contribute to a voluntary scheme than the rest of the community (58% vs 55%), mainly because they believe that the cost should be shared by the whole community.

Although businesses are more difficult to enlist than residential customers, they are worthwhile targeting for a number of reasons (Wiser *et al.*, 1999):

1. they often purchase large amounts of power so that the per-kWh customer acquisition costs are lower than in the residential market
2. they generally purchase through long term contracts and so reduce risk for the retailer
3. they may provide an opportunity for free advertising of either Green Power in general or of a particular brand.

Telemarketing is considered to be the most effective promotion method, especially when supported by mail-outs. The use of community role models, with both personal and professional credibility, may reduce the need for complex messages, and so could be particularly effective in promoting Green Power. Governments are not considered trustworthy sources of information and the general community is more likely to trust information from scientists or environmental advocates (ABS, 1998). Other environmentally-based campaigns, such as recycling, have managed significant penetration into the household through education of school children who then take the message home to their parents.

Opinions varied regarding the level of detail required in a Green Power marketing campaign. Some advised keeping the message simple and easy to remember, while others stress the importance of having more detailed information available. A combination of the two approaches is also possible, with simple joining-up procedures supported by more detailed information on the Green Power product, global warming and the role of renewables, why renewables cost more and a list of local installations. To encourage retention, customers should be provided with regular feedback, means for business to promote their involvement, and customer rewards.

Customer aggregation is a recent development in Australia and refers to the collection of customers into large pools of buyers acting as a single purchasing entity. Advantages for customers include being able to negotiate more favourable terms from retailers, and members may also have reduced transaction costs. Advantages for retailers include reduced marketing and acquisition costs, and the possibility of long term contracts and reduced risk. Although a number of buyer pools have indicated an intention to purchase Green Power, there is no information at present on take-up.

Retail contestability

At this stage it is uncertain which States/Territories will introduce Full Retail Contestability, and when they will do so. There were significant differences in the perceived usefulness of Green Power to attract and retain customers in a contestable market. Some retailers thought it would have little impact on their choice and that, with most retailers offering Green Power products, differentiation would be difficult. Other retailers thought that promotion of a green image was important and that

Green Power was an ideal way to do this. US research (Farhar and Coburn, 1999) found that 90% of customers would choose a retailer that provides more renewable energy resources, although they would not necessarily sign on to Green Power, and that Green Power customers are significantly more loyal to their utility company than are other customers. Nevertheless, in California after more than two years of competition, only 2.2% of all eligible customers had switched suppliers. However, of these, virtually all residential customers and many commercial customers had chosen Green Power.

Implications of MRET

Initially at least, MRET is expected to increase the cost of Green Power because retailers will be using the cheaper forms of renewable energy to meet their MRET obligations. Although it appears likely that there will initially be an excess of MRET compliant capacity, much of this will not be Green Power compliant. Additional effects for retailers include an extra level of reporting and auditing complication, and the possibility that retail marketing of Green Power and MRET will be combined. It was thought unlikely that 'double-dipping' would occur because all renewable energy certificates (RECs) used for Green Power must be surrendered to SEDA and so cannot be used to fulfill MRET requirements.

Some customers are expected to drop out of Green Power programs on the basis that renewables are being supported through MRET. NGO's felt that some retailers were planning to introduce a cheaper non-accredited form of renewable energy (NARE) in direct competition with Green Power to meet MRET obligations by financing renewable generation that does not satisfy Green Power auditing requirements or guidelines. It is unclear whether NARE would aid development of Australia's renewable energy industry and it may attract customers away from Green Power. Another possible outcome of MRET is for customers to purchase RECs in order to support renewable energy deployment independently of their own consumption. Taking RECs out of circulation will increase the total amount of renewable energy needed each year. For some customers, REC purchase may replace their Green Power purchases, for others it would be additional.

Alternatives to Green Power

Possible alternatives to Green Power suggested were:

- (i) Solar water heaters and residential renewable energy power systems
- (ii) Contribution-based products
- (iii) Non-accredited renewable energy
- (iv) Local renewable cooperatives
- (v) An across the board levy based on the carbon intensity of energy used
- (vi) A Green Energy market that is not focussed on the retailer
- (vii) Portfolio-based MRET
- (viii) Customers paying a flat monthly rate to have PV panels installed on their roofs

- (ix) Private shareholders participation where shares in a renewable energy plant are sold in blocks
- (x) Solar stock exchange where customers buy electricity from privately owned PV systems linked to the grid and pay rates corresponding to the production costs.

Many of these schemes could quite effectively co-exist with Green Power and so provide additional support for renewable energy by increasing customer choice and by operating in market segments where Green Power is less effective.

Recommendations

1. This review has highlighted a number of issues that need to be addressed. Active and direct involvement of the Green Power Project Manager, currently SEDA, may be necessary to facilitate a forum of retailers to emphasise and develop these issues and responses to them. Another critical aspect that must be addressed is the need for direct input from both existing and potential customers. The latter are particularly important because it is only through addressing their concerns that customer numbers will increase. One possibility is a public forum specifically for potential and existing customers that could be either attended in person or via electronic or standard mail. Although this could be convened by SEDA, they may be seen as too involved in the existing process. In this case the ACRE Energy Policy Group may be appropriate.
2. Retailers should place much more emphasis on explaining accreditation to customers. Accreditation can be used to reassure customers that their extra money is resulting in establishment of new renewable energy plant of net environmental benefit. This encourages participation by helping to overcome concerns that Green Power contributions may simply provide financial support to retailers. Customer faith in Green Power is critical and lack of it certainly contributes to low uptake. Both the Government and the electricity industry have low credibility so help should be enlisted from community based organisations and individuals that have consumer confidence.
3. Contribution-based schemes could be re-evaluated in terms of fulfilling a niche market, especially if contributions are tax deductible. Giving retailers the option of accrediting such schemes if they choose to may provide funding for small local projects, and help increase community awareness through education and by involving customers who may not feel able to make major contributions. Both contribution- and capacity-based schemes allow support for renewable energy to be de-coupled from consumption of electricity. This may be important for customers who wish to be energy efficient and reduce their consumption, yet are keen to see an increase in renewable energy deployment.
4. Given that in both Australia and the United States there is no correlation between premium and take-up rate, consideration could be given to increasing the premium. This would provide more resources for development of a credible high quality Green Power product and for effective marketing, both of which have been shown to be correlated with uptake. It would also address the concern voiced by both retailers and generators that the premium was insufficient to meet the additional cost of renewable energy, especially if MRET increases it further. Where Government sets the retailer's Green Power premium, it should consider the merits of permitting reasonable increases. Nevertheless, where retailers view Green Power as an important product in competitive markets, additional promotional costs could well be wrapped into overall marketing budgets. Obviously it would be preferable for the price of fossil fuel based electricity to be increased instead, to reflect environmental impacts.
5. Government should provide additional support for renewable energy, including through education. Education should concentrate on the seriousness of global

warming, its impacts, that it is caused by existing electricity supply, and renewable energy's role as a solution. The collateral employment and development benefits of renewable energy should also be promoted. Government should play an active role in building the profile of Green Power, especially generic and longer term promotion. Direct support for renewable energy could be through a variety of avenues including removal of the GST on Green Power, government purchase, comprehensive and effective State and Federal government legislation aimed at increasing renewable energy use, and tax concessions/subsidies targeted at reducing the cost of renewable energy and therefore also Green Power.

6. Retailers should make themselves familiar with the wealth of information available regarding the characteristics of Green Power customers (residential and business), methods for conveying the Green Power message, the type of information that should be conveyed, and general strategies that aid both acquisition and retention. Much of this information is summarised in this report and could stimulate both customer desire to support renewable energy, and the wish to do so through a Green Power product.

7. If Green Power is to capitalise on full retail contestability, the market must be explicitly designed to not only facilitate high levels of switching, but to encourage take-up of Green Power products. For example, provision of credits by Australian State/Territory governments similar to those offered in Pennsylvania and California. If FRC is implemented, it is possible that promotion of Green Power could be useful in both attracting and retaining customers by generating a socially and environmentally responsible public image, simply because some retailers do not see it as valuable and therefore will differentiate themselves from those that do.

8. If non accredited renewable energy is introduced by retailers, then this should be done in such a way that it increases the total amount of renewable energy generation rather than simply helping retailers meet their MRET requirements at the expense of Green Power. The public should be sufficiently informed to be able to differentiate between the Green Power and NARE products, especially regarding the type of generation, whether it is new or existing, and whether it is being used to meet the retailer's MRET requirements. The option of direct purchase of RECs should also be promoted. This will increase renewable energy generation in a manner that allows customers to support the specific generator of their choice and to de-couple electricity consumption from their support for renewables.

Acknowledgements

This project was supported by the ACRE Energy Policy Group. Input from AEPG members is also gratefully acknowledged.

We are particularly grateful for the information provided by electricity retailers, generators, consultants, NGOs, city councils, members of the Green Power National Steering Group, and individuals who participated through the Greenleap email list.

1. Background

Green Power schemes have now been operating in Australia for the past four years. Most electricity retailers offer a Green Power product. While the NSW Sustainable Energy Development Authority and the National Green Power Steering Group have assessed its implementation and progress, no external review of its operation and outcomes has yet been undertaken.

This discussion paper is the final stage in a three stage process. Initially questionnaires were sent to electricity retailers, generators, consultants/financial institutions, NGOs, CCP councils, and the Green Power National Steering Group.

An issues paper that summarised the initial responses of stakeholders was then prepared and circulated for comment. Although reference was made to overseas schemes, emphasis was on the Australian situation. It summarised stakeholder responses to:

- Is Green Power worth pursuing?
- What issues have arisen?
- How can these issues be dealt with?
- What are the alternatives?

This final discussion paper was then prepared, based on feedback from all stakeholders.

2. Introduction

Green Power schemes enable electricity customers to pay a premium for a certain percentage of their electricity to be generated from renewable sources. They were initiated in order to cover the price differential between conventional and renewable sources of energy and so increase penetration of the latter into electricity markets. This was based on the market model that if consumers really want Green Power they'll pay for it. The Green Power Accreditation Program was initiated in NSW by the Sustainable Energy Development Authority (SEDA) in April 1997. Its aim is to ensure compliance of products offered by energy suppliers to Green Power guidelines (see below), and so increase consumer confidence in the Green Power product.

Other States and Territories have since initiated Green Power schemes under the National Green Power Accreditation Program, which is overseen by the National Green Power Accreditation Steering Group (NGPASG). As of June 2001, NSW, Vic, Qld, WA, SA and the ACT all had retailers with accredited Green Power products in their franchise area. Most retailers also offer Green Power Products to non-franchise and business customers outside their franchise zones. See Appendix A for a full listing of all electricity retail license holders in each State/Territory including those that sell Green Power.

The Green Power Project Manager, currently SEDA, is appointed by the NGPASG and is responsible for administration of the Green Power Program. Management responsibilities include accreditation of Products, approval of Green Power generators, execution of contracts with Green Power retailers, co-ordination of stakeholder consultation, and collation and provision of reports, annual audits and related information.

National compliance with Green Power Guidelines (according to the National Green Power Accreditation Document Version 2, November 2001 – available from <http://www.greenpower.com.au>) is independently audited according to financial and technical criteria. Financial criteria include ring-fencing, a separate independent audit, a publicly available audited financial statement, and demonstration that all purchases are made at current reasonable market rates. Technical criteria include generator type, a minimum proportion of new generation (since 1st Jan 1997), and that generation shall be of net environmental benefit. The 1999/2000 financial year audit was performed by Environmental Resources Management Australia Pty Ltd who found that all retailers complied with Green Power Guidelines.

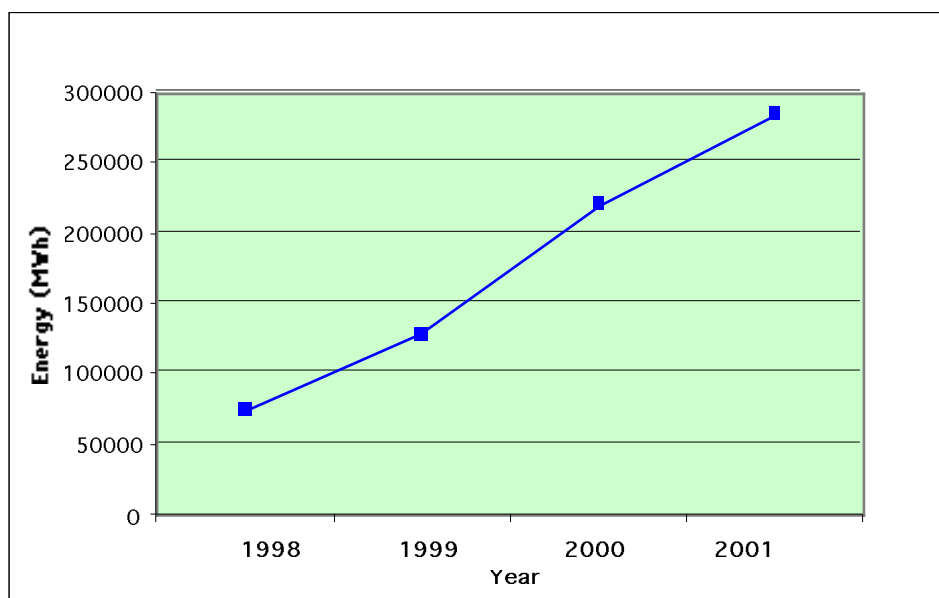
In addition to the Annual Audit, Quarterly Reports are publicly released giving details of customer numbers, MWh of energy produced from new and old renewable generation, and types of generation used according to both State/Territory and retailer. These are all freely available from <http://www.greenpower.com.au>, and were used to compile some of the background information in this paper. Until February 2002, monthly reports were also required, however in order to reduce the workload for retailers, the Steering Committee decided to cancel this requirement on the condition that all information normally present in the these reports now be collated in the quarterly reports.

3. Current Status

National sales from 1st July 2000 to June 31st 2001 were 462,158 MWh (excluding Pulse Energy June data as no figures were received for this quarter). NSW was the greatest contributor (239,162 MWh, 51.7%), followed by Qld (136,067 MWh, 29.4%), Vic (54,879 MWh, 11.9%), ACT (20,009 MWh, 4.3%), then WA (4,042 MWh, 0.9%).

In the first, second, third and fourth quarters of 2001, a total of 106,135 MWh, 136,185 MWh, 98,580 MWh, and 114,028 MWh were sold respectively. After taking into account varying contribution levels for each Green Power product, the latter is equivalent to over 67,000 domestic households based on the average NSW domestic consumption.

The new renewable energy generation purchased has steadily increased each year from 74,964 MWh (June 1998), to 128,989 MWh (June, 1999), to 220,343 MWh (2000), to 285,315 MWh (June, 2001), as shown in Graph 3.1.

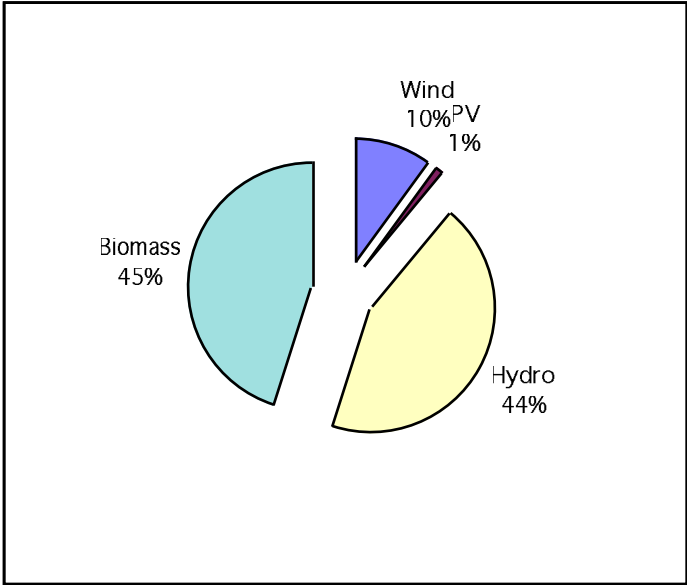


Graph 3.1 New Renewable Energy Generation Purchased

Three models of Green Power are or were available: Contribution products, which required a specified contribution, such as a fixed amount per quarter or a rounding up of each bill; Capacity products, where a fixed amount per month is linked to a specified amount of renewable energy generated - however it is not necessarily related to the customer's consumption; and Consumption products, where payments are based on a percentage of the customer's quarterly bill. Note that because capacity products base payment on the amount of renewable energy generated, they are often combined with consumption products during analysis - for example in SEDA's evaluation of total customer numbers. In August 2000, accreditation was removed from contribution based schemes. This is discussed further in Section 6.

As of 1st January 2000, retailers have been required to source 60% of their Green Power from new sources (since 1st Jan 1997) or from an increase in generating capacity (also since 1st Jan 1997). This proportion is world's best practice and increased to 70% in June 2001, and will increase again to 80% by June 2002. Overseas programs have far lower percentage requirements for new generation, such as the Green-e program in the USA (at 5% new for 1st year, and maximum 25%), Germany's 3 accreditation programs (<25%) and the Future Energy scheme in the UK requiring "significant new generation" (UR, 2001).

Green Power sold during the 1999/2000 financial year in Australia was compliant with this target, at 60.9%, and Green Power schemes have resulted in over 200 MW of new installed capacity from 1997 to 2000. An additional 150MW is committed to come on line over the next few years. Since 1997, 120 new Green Power-approved generators have been installed or committed including 67 solar, 10 wind, 20 hydro, 1 wave generator and 30 biomass (i.e. landfill, sewage, agricultural wastes) projects. As of Sept 31st 2001, solar systems contributed 0.17%, wind turbines 10.17%, biomass 45.46%, and hydro-electric 44.2% of electricity purchased, as shown in Graph 3.5. In NSW this equates to investments of almost \$170 million in generation infrastructure to date.



Graph 3.5. Percentage contribution to Green Power by different energy sources by Sept 2001.

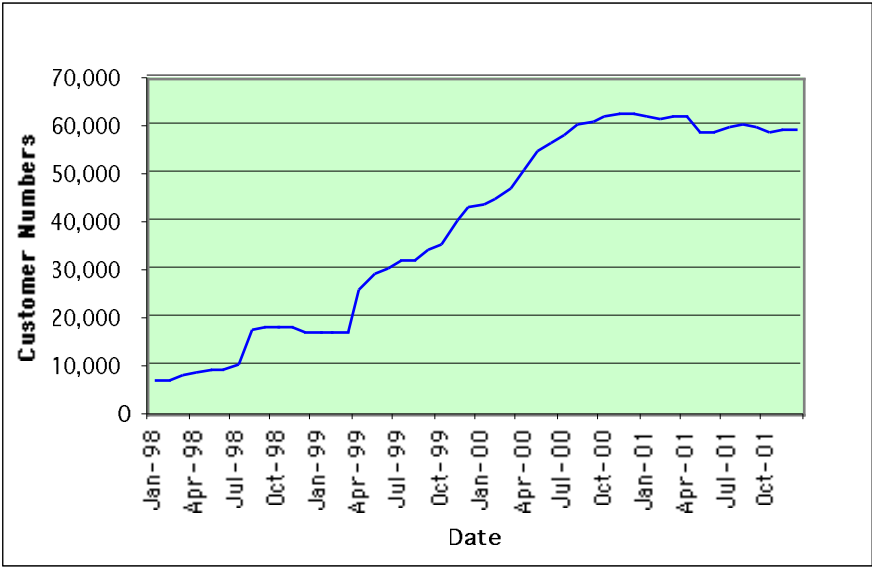
Over 96% of Australian customers now have access to Green Power, with 15 retailers providing a Green Power product to 59,626 customers: 57,187 domestic and 2,439 commercial (as at Dec 2001). Note that in the 2000–2001 financial year, although business customers made up only approximately 4% of customer numbers, they contributed almost 50% of sales (AA, 2002). For a list of retailers that currently offer Green Power, and details of individual schemes, see Appendix B (note that

these are in a continual state of flux and so may not be accurate at the time of reading). Green Power customer numbers have been steadily increasing until late 2000 and have leveled off since then - Graph 3.2. Residential numbers have declined slightly while commercial numbers have increased - Graphs 3.3 and 3.4. There is no single explanation for residential numbers no longer increasing. Not only do different stakeholders each suggest a variety of reasons, but the reasons often differ between stakeholders - this is further discussed in Section 5.

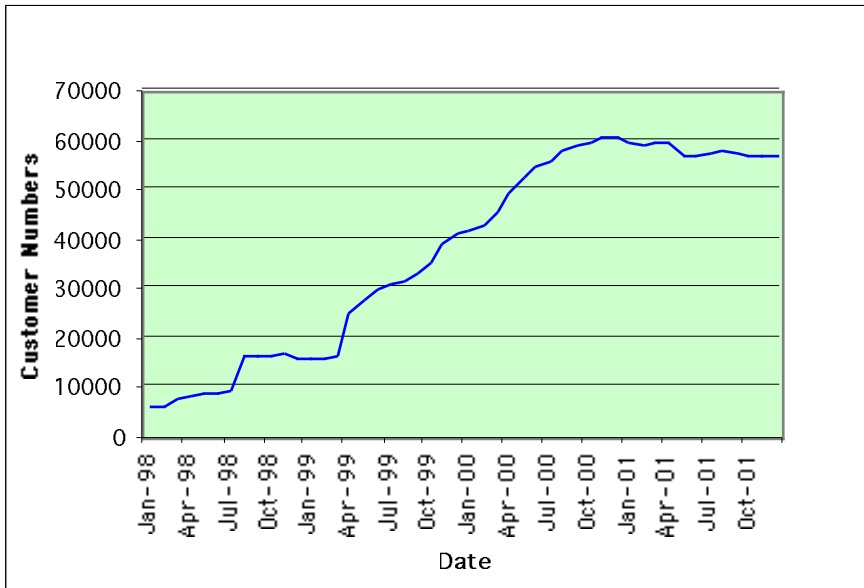
It is apparent that while the residential numbers show fairly steady growth (until 2001), the business customer numbers are much more volatile. The sudden drop in commercial customers for October 1999 occurred because Great Southern Energy didn't report that month. From their September and November figures, this would have contributed another 660-680 customers.

Despite market research in Australia and overseas identifying anywhere from 20 to 37% of the sample population likely to pay the Green Power premium (Artcraft Research, 1999; Buckland and Vincent (2000); Wiser *et al.*, 2000; Serchuck, 2001), only a fraction of this number actually do. Currently in Australia less than 1% of eligible customers have signed on to Green Power, and these make up an even smaller percentage of total sales (approx. 0.2%).

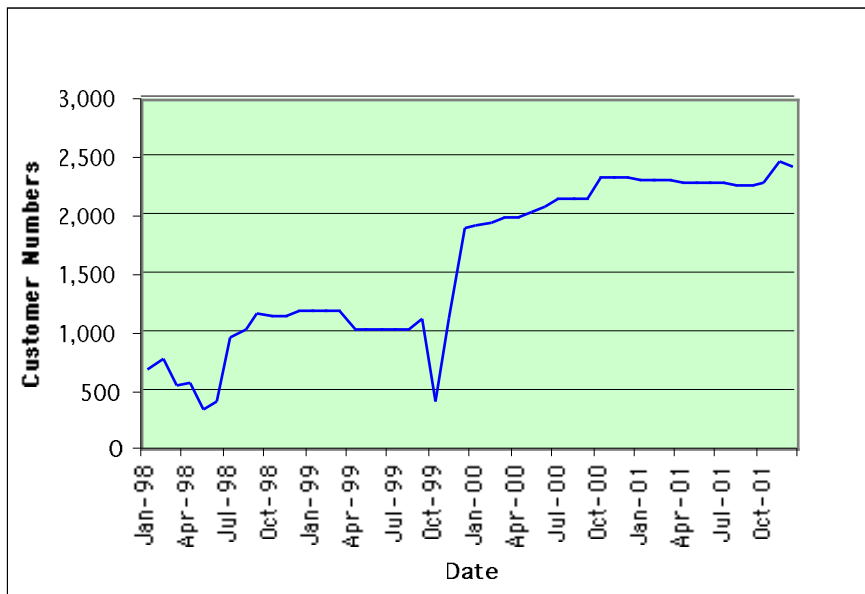
The main causes of sudden increases or drops in Green Power numbers (eg. June 2001) were termination of the contribution based schemes and billing data errors from retailers. The main cause of the latter is correction of double counting of relocated customers who have re-signed up for Green Power schemes but not had their original Green Power listing deleted. Another cause of drops for specific retailers occurs when aggressive marketing campaigns that result in sudden increases are not followed by customer retention strategies.



Graph 3.2 Consumption-Based Green Power Customer Numbers - Total



Graph 3.3 Consumption-Based Green Power Customer Numbers – Residential



Graph 3.4 Consumption-Based Green Power Customer Numbers – Commercial

4. Methodology

In order to assess the views of key stakeholders regarding Green Power after four years of operation, questionnaires were sent out and a literature survey undertaken to place the findings in an international context. Different questionnaires (Appendix C) were sent out to retailers, generators, consultants/financial institutions, NGOs, selected councils, and members of the Green Power National Steering Group – see Appendix D for a complete listing of recipients. Phone interviews were offered as an alternative to the written questionnaire. The retailer’s questionnaire was sent to all 15 retailers currently registered under Green Power schemes. The generator’s questionnaire was sent to 14 generators and consultants/financial institutions from a contact list supplied by the Renewable Energy Generators Association, and also to Pacific Hydro Ltd. The NGO’s questionnaire was sent to 9 NGOs thought to have an interest in Green Power. The council’s questionnaire was sent to 10 councils participating in the Cities for Climate Protection Program who are also purchasing Green Power. The Green Power National Steering Group questionnaire was sent to a 10 person contact list supplied by SEDA.

After approximately two weeks, a follow-up email was sent to non-respondents. After another week the remaining non-respondent retailers, and members of the National Steering Group were telephoned at least three times.

In total, 36 questionnaires were returned, from 12 retailers (80%), 4 generators (44%), 1 consultant, 2 NGOs (22%), 5 councils (50%), and 9 members of the National Steering Group (90%), (percent return rate is in brackets). An additional 3 questionnaires were received through the Greenleap email list (Table 1).

The following retailers returned questionnaires; Actew-AGL, Advance, AGL, AIEnergy, CitiPower, Energex, Energy Australia, Ergon, Great Southern, Northpower, Origin, Western Power.

It is important to note that customer input was obtained through third parties (retailers, NGOs and the Steering Committee) and from a literature review of existing public surveys of customers preferences and values, not directly from customers themselves. This is a significant limitation especially when existing and potential customers are arguably most critical to Green Power uptake. Logistically this is not an easy problem to solve and customer consultations could be one focus of a second stage process dealing with issues arising from this report.

The following Sections summarise and briefly discuss issues raised by various respondents, and is divided roughly according to the questionnaire layouts.

Table 1

	Received Questionnaires	Returned Questionnaires	Return Rate
Retailers	15	12	80%
Generators/consultants	14	5	44%
NGOs	9	2	22%
Councils	10	5	50%
Steering Group	10	9	90%

5. Is Green Power worth pursuing?

Although until late 2000 Green Power customer numbers had been steadily increasing, since then they dropped slightly then leveled off. This has raised questions about whether Green Power should be continued. All retailers and generators who responded thought Green Power worth pursuing. It was suggested that a proven market for Green Power, independent of MRET, exists and that for a retailer to remain competitive in conditions of full retail contestability, a Green Power product is a necessity – note that since providing input to this review, Energy Australia are no longer taking on new Green Power customers. One retailer predicted the Green Power market could grow from current levels of 460 GWh/yr to approximately 1500 GWh/yr by 2010 (just less than one sixth of the 2010 MRET target of 9500 GWh).

A number of explanations have been offered for Green Power leveling out including

- (i) That initial growth occurred because the most interested and environmentally aware customers signed up fairly quickly – more aggressive marketing is required for the second wave of mainstream uptake,
- (ii) Customer churn that occurs when customers move house has not been countered with effective retention and re-acquisition strategies,
- (iii) That GST has reduced discretionary income,
- (iv) That little emphasis has been placed on global warming and environmental concerns in the mainstream media – for example during the last Federal election,
- (v) Where electricity is a media issue, emphasis has been on security of supply (South Australia and Victoria), and
- (vi) That retailers have scaled back their marketing efforts. The latter has been partly because with the introduction of MRET and full retail contestability, retailers have had reduced resources to promote marginal products such as Green Power, and partly because they are developing new products of uncertain relationship to Green Power.

All of these are either not directly related to Green Power (points iii, iv, and v) or can be addressed by retailers (points i, ii, and vi). However, although there are a variety of methods available for retailers to increase uptake, whether they do so depends very much on whether Green Power has priority in terms of maximising profits. Thus the fate of Green Power lies not in whether it is worthwhile, but in whether retailers choose to pursue it.

It has also been asked whether MRET has made Green Power redundant. The following reasons were given for why this is not the case. Green Power is still required for:

- (i) funding more expensive types of renewable energy,
- (ii) providing a market discovery mechanism for the value of renewable energy attributes that is independent of a legislative mandate,

- (iii) providing consumer choice and empowering the community to express their support for genuinely 'green' generation sources, and
- (iv) educating the public regarding global warming and renewable energy.

Because MRET does not require retailer promotion of a distinct Green product, it is unlikely to increase community knowledge and commitment to using renewable energy. However it was also pointed out that the potential for Green Power to provide significant education is limited by the difficulty of delivering a complex message to a diverse consumer base with only limited interest in this one issue amongst a sea of others.

It was also thought that MRET does provide some educational benefits, only to a different audience, that of the business and commercial sector. In this case both MRET and Green Power promote capacity building and provide valuable working experience in implementation and operation.

Note that the perception of Green Power being 'greener' than MRET was not universal. One respondent thought that MRET will not induce as much biomass generation as originally expected, while the demand for wind would be greater.

For an expansion of the impact of MRET on Green Power, see Section 14.

6. Contribution-based schemes

Contribution-based schemes allow customers to support renewable energy by paying fixed amounts un-related to their level of consumption. This can be through a fixed monthly amount or by rounding up electricity bills. They ran only in NSW and were all terminated (in terms of no longer being accredited) by August 2000. Note that Citipower ran a contribution-type scheme that, for accreditation purposes, was treated as a consumption based scheme because the then Victorian State Government would not allow any tariffs above the Maximum Uniform Tariff. Accredited by SEDA in March 1997 it was converted to the current EcoPower scheme in Dec 2000. Customers could purchase EcoPower 'EcoUnit' 350 kWh blocks at an initial premium of \$10 which later increased to \$12.50.

The Great Southern Energy 'Earthsaver' fund lost accreditation in late 1999 with 17 customers, and a fund balance of \$680. Customers could contribute \$40 annually or could nominate a maximum contribution per billing period.

The Integral Energy 'Community Green Power' lost accreditation on the 31st August 2000 with 11,419 customers (after peaking at 15,320 in June 1999) and raised a total of \$131,620. Customers could elect to contribute \$2, \$5, \$10 or \$20 per two month billing cycle, or could round up their energy bills to the next dollar. Money raised was used to provide photovoltaic generators to local community facilities, such as local schools.

The Australian Inland Energy 'Solar future' lost accreditation in June 2000 with 9 customers, and raised \$21,500. Customers could contribute an annual fee of \$40 with higher contribution levels available.

Questionnaire respondents expressed little opposition to stopping accreditation of contribution-based schemes because it was thought they artificially inflated customer numbers while contributing little to total energy produced. It was also thought that having two types of schemes introduced additional complications for both retailers and customers - better to keep things simple with only one scheme. The low level of revenue generated also limits the resources and time that can be spent on attracting and retaining customers.

However, it does seem that the funds raised were not insignificant – in total \$153,800. The Integral Energy fund was clearly most successful, possibly because funds were directed to schools and a greater range of options were available for customers. It is possible that, properly targeted and managed, contribution-based schemes could fulfill a niche role for small scale local schemes and play a role in increasing community awareness by involving customers who may not feel able to make major contributions. In addition, contribution based schemes allow support for renewable energy to be de-coupled from consumption of electricity. This may be important for customers who wish to be energy efficient and reduce their consumption, yet are keen to see an increase in renewable energy deployment. Note that it is also possible that the recently introduced capacity-based schemes will provide such a de-coupling mechanism.

Should contribution-based schemes be pursued, it would be wise to require retailers to clearly indicate the level of support provided to renewables. Otherwise customers may be under the impression that they are providing more support than they really are thus undermining more meaningful consumption-based Green Power schemes.

As has occurred in the US, it may be possible for contributions to be tax deductible if the retailer establishes a non-profit entity to administer the program (Swezey and Bird, 2001). This could result in significant contributions, although they may be concentrated towards the end of the financial year.

At the time of writing Integral Energy was continuing its contribution-based scheme under the new name Solar for Schools with a little over 12,000 customers. The Great Southern Energy scheme is still operating, although it is not being advertised to attract new customers pending the outcome of Country Energy's Green Power scheme. The Australian Inland Energy scheme had ceased operation.

7. Customer faith in Green Power

As identified earlier, customer input was obtained through third parties (retailers, NGOs and the Steering Committee) and from a literature review of existing public surveys of customers preferences and values, not directly from customers themselves. This is especially relevant in that customers that would join but don't because they lack faith in Green Power are the least well represented. There is strong anecdotal evidence indicating active opposition to Green Power from the more environmentally aware sector of society that is strongly in favour of renewable energy but sees Green Power as political tokenism. There is also concern regarding retailer's understanding of environmental issues and therefore the credibility of their product. This can range from receiving too much paper in the mail to the sources of Green Power, especially biomass. Thus the following information should be viewed in this context.

When asked whether customers had faith in Green Power – did they believe their money was going towards genuine renewable energy projects? – the consensus view was that in general existing customers did, however there was a level of skepticism that needed to be addressed, especially for potential customers. Most retailers placed strong value on being able to refer to the accreditation process, with its stringent environmental and auditing requirements, as proof of their product being genuine. According to retailers and the Steering Committee the accreditation process is seen by customers (who know about it) as being independent, transparent and non-commercial, and as providing clear and unbiased information. Not only does it ensure the premium is directed towards genuine renewable energy projects, but that the majority (a percentage that is increased each year) goes towards new generation. Accreditation also facilitates consumer comparison of different electricity products in conditions of full retail contestability. The critical nature of accreditation for participation in Green Power was also identified by OMRG (2001) for the business sector. They also found that SEDA, SEAV and other members of the Steering Committee were seen as appropriate accreditation organisations. However it seems that because Green Power accreditation is not a simple message, it is often not included by retailers in material other than information booklets, ie. it is offered only on a 'need to know' basis. This has resulted in at least one retailer that considers accreditation unimportant because customers don't know about it, a somewhat circular argument.

Given the value customers place on accreditation, members of the Steering Committee thought retailers should place much more emphasis on explaining it to customers. Especially in the current climate of concern over native forest products being used to generate 'renewable' energy. However, both retailers and independent observers thought the Green Power National Steering Group should also take some responsibility for promoting accreditation. According to one Steering Group member, anecdotal research indicates that most people hesitate joining because they don't trust their retailer - yet many do not ask for information. This was also found by an Artcraft Research survey of Victorian residential customers in June 1999 where 50% of respondents agreed with the statement that "I would not pay extra for Green Power because I'm not sure my electricity supplier would spend it all on developing Green Power sources." (Artcraft Research, 1999). In the US, Capage (2001) found that legitimacy was more important than price for most customers. One member of the Steering Committee thought that since customers often have their own criteria for

judging renewable energy projects, retailers should recognise the value in making such information more readily available.

One possible explanation for retailers' lack of interest in promoting accreditation is that they may be about to introduce a "light green" alternative to Green Power (see Section 14.1). This would be cheaper because it would not have to comply with the same rigorous auditing procedures with regard to financial, technical and environmental criteria. It would therefore not be accredited and so promotion of accreditation may reduce customer interest.

8. Attractions and problems with Green Power from the customer's perspective

As identified earlier, customer input was obtained through third parties (retailers, NGOs and the Steering Committee) and from a literature review of existing public surveys of customers preferences and values, not directly from customers' themselves. Thus the following information should be viewed in this context.

8.1 Attractions

The survey results indicate that making a contribution to help the environment seems to be the main reason customers choose Green Power, although individual reasons vary. General environmental concern was considered more important than a specific concern for global warming or support for renewable energy in itself. Being part of a larger scheme where individual contributions are seen to be significant in the big picture was also important.

When compared to other options, such as individual purchase of photovoltaics or solar water heaters, the advantages of Green Power were felt to be:

- (vi) the option of a small ongoing cost as opposed to a large upfront cost,
- (vii) a simple easy decision path where the level of contribution can be tailored to changing personal circumstances,
- (viii) suitability for owner-occupiers of flats/units and for rental accommodation,
- (ix) not having to be involved in the engineering aspects of self generation, and
- (x) no maintenance requirements.

8.2 Problems

Cost was considered the main reason for not joining and for canceling Green Power, especially when GST was added. There was general agreement amongst all groups surveyed that the cost should be borne by all consumers not by a concerned few. This was also found in the Artcraft Research survey where 65% agreed with the statement that "The cost of introducing environmentally-friendly sources of electricity should be shared by all customers, not only those prepared to pay a voluntary supplement" (Artcraft Research, 1999). There was also a general consensus that government should be doing more to reduce greenhouse gas emissions. Many thought that the polluter-pays principle should be followed, and a levy applied instead to non-renewable forms of electricity, making it more expensive than energy supplied by renewable generation.

It is interesting to note that, although Origin had the highest premium (4.66c/kWh), it also had the highest take-up rate (just over 3%) along with Actew AGL (3.05%). Both these retailers use telemarketing. The cheapest (Energex - 2c/kWh), had a comparable take-up rate to other retailers at 1.12%, and does not use telemarketing. Thus it appears that although cost is a significant limiting factor, it can be overcome to a degree. In fact, one member of the Steering Committee suggested that retailers should raise prices to improve margins thereby generating additional revenue for promotion. As outlined above, legitimacy of the Green Power product was also

considered a very important factor, and distrust of retailers due to the absence of information regarding accreditation results in loss of potential customers.

This is consistent with a number of studies in the US that found the quality and credibility of the product, together with how well it is marketed, more important than price in determining take-up rate (Holt, 1999; Wiser *et al.*, 2000, 2001).

It is important to note that customers are not well represented in the survey reported here. Thus the perception of cost being the most important constraining factor is derived predominantly from retailers. Given the above experiences in the US, together with no clear relationship between price and participation rate in Australia, it is possible that premiums could be increased. Customers that can't afford the increased premium could opt for a lower percentage of renewable energy (eg. from 100% to 75%), and aggressive marketing of energy efficiency measures would allow customers to avoid increased costs.

This would make Green Power schemes more viable by providing additional funding for purchase of renewable energy and for effective program design and marketing. Increasing the premium is not possible for some retailers (those in QLD and WA) as it is set by Government, while others set it themselves based on their perception of the customer's ability to pay. Governments that set the retailer's Green Power premium could consider the merits of permitting higher premiums to allow development of a better product and increased marketing. Alternatively, or in addition, government support for generic marketing should be considered.

In addition to cost there are a number of other customer concerns that need to be addressed. These are outlined in Section 12.2.10 in the context of what retailers should include in a Green Power marketing campaign.

8.3 Attractions and problems for businesses

One of the main attractions for businesses to take up Green Power is, as for electricity retailers themselves, to identify themselves as environmentally responsible in order to increase sales and customer loyalty. However, only a limited number of niche businesses (generally those selling environmentally related products) believe that Green Power is capable of conveying this message to their customers - mainly because of the low take-up rates and level of awareness in the community (OMRG, 2001). Those surveyed felt that this could be addressed by increasing the numbers of Green Power customers, promotion of Green Power as a generic brand, and also by facilitating customer recognition of participating businesses.

According to OMRG (2001), other barriers were:

- Being locked into a contract with their current power supplier,
- Subletting (and therefore lacking choice in power supplier), and
- Cultural barriers - for example, a perception that issues such as Green Power do not fit with the organisation's mission and goals, or the belief that it's 'someone else's' responsibility to investigate such options.

9. Retailer commitment to Green Power

Non-retailers were asked whether they thought retailers were committed to Green Power, whether customer service staff were well trained, and whether Green Power was advertised effectively, explained well, and easy to join.

The level of overall commitment seemed to vary between retailers and States/Territories. Retailers that are committed and employ strong customer acquisition and retention strategies have a strong product. Neither of the Northern Territory retailers, nor the Tasmanian retailer have a Green Power product, while retailers in Victoria for example see it as an essential component of their business - predominantly for marketing reasons. This emphasis on marketing is especially true of management, although those who are directly responsible for promoting Green Power seem more personally committed. As outlined below, retailers are currently focussing on full retail contestability (FRC) and for some, because Green Power is a small marginal product, it receives only limited attention and a small budget allocation. Others who see marketing of Green Power as one way of attracting customers are emphasising it as part of their overall FRC strategy (and could fund much of its promotion from central PR funds).

It was thought that the quality of customer service staff also varied between retailers, possibly according to company commitment and enthusiasm of the product manager. Customer service staff often have a high turnover (some survey respondents thought that backpackers might be being used) and so constant retraining is required. It is difficult to judge the quality of service staff with any degree of accuracy because retailers are unlikely to admit to poor service and others, such as Steering Committee members, generally hear only from customers that are dissatisfied. The CCP councils were generally satisfied with the level of service, although noted the same problems with staff turnover. One had five different account managers over the six months required to negotiate a purchase variation.

The quality of Green Power advertising, explanation, and ease of joining also seemed to vary between retailers and between States/Territories. Feedback on the quality of marketing did not show a clear trend and so it is difficult to identify individual retailers with most room for improvement. In some cases promotion seemed to focus more on letting customers know they had a Green Power product (good for marketing) rather than in convincing customers to join. The general consensus was that retailers should do significantly more to explain details (especially regarding accreditation), make it more attractive, and easier to join.

It was also pointed out that some retailers focus on their own branding and advertise without using the Green Power logo, despite being contractually obliged to do so.

10. Attractions and problems with Green Power from the retailer's perspective

10.1 Attractions

The main attraction of Green Power for retailers is its use as a marketing tool for self promotion. They can be seen to be 'doing the right thing' by contributing to a better environment and can align themselves with environmentally concerned customers. One retailer stressed the importance of the strict reporting requirements in convincing skeptical customers they were offering a 'genuine' product. It was also suggested that Green Power may provide valuable marketing data identifying environmentally aware customers for other products and services.

10.2 General Problems

(i) Cost

The main problem for retailers was the price premium being insufficient to cover trading, administrative, auditing and advertising costs. Retailers cited acquisition costs of approximately \$100 per customer which corresponds well with costs in the US of US\$53/customer (Burke, 2001). Lack of profitability reduced the resources available for administration/promotion which in turn reduced uptake, resulting in reduced profitability. Inevitably Green Power is the responsibility of one busy person who may have limited support from senior management. In these circumstances it is often difficult to explain the Green Power concept to consumers who simply want what electricity provides (heat, power etc.), not a product that costs more. However to put this in context, promotional programs for other products/services may cost considerably more. A number of retailers offer financial incentives for customers to buy reverse cycle air conditioners - AGL offer a loan with up to 24 months interest free, and Origin offer reduced winter tariffs. Such strategies not only create up front costs for retailers but also result in increased load during high cost summer peaks. In addition, focussing on the \$100 per customer acquisition cost does not acknowledge either the marketing value of an environmentally responsible product, nor the avoided transmission and distribution costs provided by distributed renewable generation.

(ii) Variable customer numbers

Retailers face increased risk in long term planning because of variable customer numbers – retailers must commit to long term contracts while customers can leave at any time. Some retailers (Energy Australia) are addressing this through provision of reduced premiums for three year contracts. Specification of minimum usage provisions would provide additional security.

Another source of variability in numbers occurs when customers change their address and are not automatically re-signed back onto Green Power. This problem may become worse when full retail competition allows customers to change retailers as well (although it may also be reduced because customers will not have to change retailers when they move). Thus it is important that steps are taken to make it easier for customers to re-sign when they move either address or retailer. If changing address but staying with the same retailer, a simple customer number system would suffice. If changing retailers, the simplest system is to have Green Power as readily available as possible (ie. tick a box style as outlined in Section 12.2.10).

(iii) Accreditation and administration

The complexity of accreditation reporting and associated administrative burdens was also highlighted as a problem, especially when combined with the different MRET and NSW licence requirements, although as cited above, it was acknowledged that the accreditation requirements add credibility. It was also thought that the recently released accreditation guidelines (National Green Power Accreditation Document Version 2, November 2001) provided more flexibility. For example, the old accreditation guidelines did not allow separation (or decoupling) of Green Power rights from the physical electricity. According to the revised accreditation guidelines, Green Power can now be bought and sold independently to the physical electricity (as occurs for RECS) providing retailers with more generation options.

(iv) Excess generation

According to one retailer, Green Power's strict requirements limiting a retailer's ability to roll forward surplus green energy into the following year is a significant problem, and makes it very difficult to put a sound business case to senior management. This issue is being addressed in the revised Draft Accreditation Guidelines section (3.2.6) (DAG, 2001):

“Where retailers have excess purchases pertaining to ‘new’ Green Power generation for a defined settlement period, retailers will be able to carry over a percentage of excess new Green Power purchases (10% for 2001/2002, 5% thereafter) from the previous 1-year settlement period to the next settlement period only, for meeting ‘new’ generation demand.”

However, this problem can be at least partially overcome by retailers using excess Green Power purchases to meet MRET requirements that can be banked – note that a small financial penalty applies if the Green Power premium is greater than the MRET penalty.

(v) Uncertainty over penalties

According to one retailer, uncertainty over penalties for not meeting ‘percentage new’, and ‘bought vs sold’ requirements was a problem. According to the accreditation guidelines, retailers are given a two month period to rectify any shortfalls, and ultimately accreditation may be withdrawn if compliance is not satisfied. It seems retailers may prefer a system similar to that used to penalise failure to meet MRET requirements, where a clear financial penalty applies. Should such a mechanism be established, the Green Power Manager could, for instance, use the penalty to buy compensating amounts of Green Power.

(vi) SEDA specific

Inflexibility and policy changes “on the run” by SEDA in administration of accreditation rules was another issue raised by one retailer. In response, SEDA maintains that inflexibility in terms of requirements and compliance is critical to maintain the program's credibility, integrity, and high standards. In addition, flexibility is in fact achieved through making policy changes “on the run” in order to evolve and remain relevant according to changes in the marketplace and related impacts on the different participants of the program i.e. a ‘work-in-progress’ in consultation with stakeholders prior to changes taking effect.

Other problems were the level of new generation required (although this is currently being met by all retailers), that “not all states have a SEDA”, and hence that other State and Territory Governments don't provide as much support as is offered in NSW. One retailer said that the “[National Green Power] Steering Committee can be a bit slow sometimes”.

One retailer thought that possibly government should not be the accreditation body, instead it should be privately run. However, this could cause problems with objective independence, in that accreditation organisations may be tempted towards leniency to generate more business. The alternative to this would be a government regulated monopoly, however this may lack any advantages of privatisation.

Survey respondents suggested that one way of increasing general company support for the Green Power product would be to establish a cross-functional team that meets regularly, comprising for instance marketing, sales, customer care, PR, advertising, events and legal personnel.

10.3 State-specific problems raised by retailers

Northern Territory - A significant barrier to establishment of Green Power was lack of access to local renewable energy resources that could be provided at a reasonable premium. This should no longer be a problem now that Green Power sales and generation can be decoupled under the new accreditation guidelines.

South Australia - Green Power is being introduced when public concern is focussed on prices and reliability of conventional energy, problems that green power does not address.

Tasmania - some criteria of the national Green Power accreditation scheme for eligibility run counter to Tasmanian Government policy. Specifically, exclusion of native forest waste from Green Power implies that the Regional Forest Agreements are not sufficient to sustainably manage forests. According to the Tasmanian member of the National Green Power Steering Committee, "It has been a very difficult task to get some parties to agree to Tasmania joining the national scheme and without that consensus the Government has not agreed that Tasmania should join the scheme. The way around this impasse would be to take Government out of the equation."

11. Issues between retailers and generators regarding Green Power

The main issue that has arisen between retailers and generators from the generator's point of view was that some retailers seem to have under-priced Green Power. Differentiating between Green Power and MRET was also an issue, although this was not seen as an ongoing concern as procedures were now set in place.

Renewable energy projects are typically long term and so generators seek long term (5 to 20 years typically) commitment from retailers. In contrast, retailer's sales profiles are short to medium term (1-3 years being the typical maturity). They suggested that retailers should instead be allowed to report to SEDA on a three or five year moving average.

An issue specific to Western Power was that it needed to ensure it did not treat its own generators more favourably than others.

12. Suggestions for retailers or government departments to improve uptake

12.1 Government

Of all questions, this received the strongest responses. They targeted mainly government actions to support public education and the renewable energy industry. There was a general belief that government should play a much stronger role in public education campaigns through the general media. Comparisons were made to the Don Burke advertisements with the exception that they should concentrate less on promoting current government actions and more on the seriousness of global warming, its impacts, and renewable energy's role as a solution. Education on why renewable energy costs more than conventional energy was also thought important.

In addition to education, it was thought that support for the renewable energy industry should be through:

- removal of the GST on Green Power
- government purchase
- comprehensive and effective State and Federal government legislation and
- tax concessions/subsidies targeted at reducing the cost of renewable energy and therefore Green Power.

As well as directly increasing Green Power uptake by reducing price, government actions could indirectly encourage uptake by endorsing global warming as a serious issue and renewables as one part of the solution. An Australian Bureau of Statistics survey (ABS, 1998) identified a perception in the community that the Federal Government is not concerned about global warming because of its international stance on increased emissions targets and lack of appropriate legislation. This perception led to the conclusion that leadership on the issue of climate change needs to come first and foremost from government, secondly from industry and business, and thirdly from the general community. The report stated that there is "a strong desire in the community and among stakeholders for leadership by legislation and some sense that, without legislation to enforce change, (a) the issue can't be that serious and (b) people won't change unless they are made to" (ABS, 1998).

As outlined in Section 8.2, Governments that set the retailer's Green Power premium could consider the merits of permitting higher premiums to allow development of a better product and increased marketing.

12.2 Retailer Marketing Methods

A wide variety of methods is currently used to attract customers to Green Power. These include advertising at community events, sponsorships, commercials in local and regional television, newspapers, and radio, advertorials, editorials, web page, direct mail-outs, telemarketing, bill inserts, customer magazines, messages on the electricity bill, cross promotion through brochures and incoming calls, messages on hold, bus shelters, billboards, posters, stickers, and certificates (residential and business).

A great deal of research has been undertaken in Australia and overseas regarding the most effective ways to promote Green Power. It is difficult to compare the effectiveness of the above methods in Australia because they may have been used to different extents by different retailers, and because Green Power has been available for different times in different States/ Territories.

Undoubtedly, detailed analysis correlating different marketing methods, price, and take-up rates would be very valuable to increasing penetration of Green Power into the market. Unfortunately, the information required for such analysis has been obtained at some cost by various retailers that are understandably unwilling to release it. The following is a best attempt to summarise those strategies and information that are publicly available either from this study's questionnaires or from the literature. Retailers must make up their own minds regarding what particular strategy best suits their operations.

12.2.1 Characteristics of potential and current Green Power customers

Many respondents suggested that retailers should attempt to get a better idea of what motivates both existing and potential Green Power customers, and ensure that their program is designed with those motivations in mind. Many surveys have been carried out on the characteristics of Green Power users, only some of which are publicly available. Relevant results of a number of surveys are in point form below. Note they are not always consistent (eg. across age groups). More detailed information is available on those surveys presented at the Sixth National Green Power Marketing Conference held in Portland, Oregon on July 30 - August 1, 2001 (see http://www.eren.doe.gov/greenpower/conference/gpmconf01_pres.html).

Respondents to the questionnaire used in this study supplied the following description. Green Power customers:

- Tend to be home owners as opposed to renters
- Tend to commit to the highest Green Power price option (100% Green Power).
- Two main groups are receptive, older (+55 – thinking of their grandchildren), and young families (thinking of their children).
- Have a genuine concern for environmental issues and have indicated that environmental initiatives, such as tree planting days and tours of renewable energy generators were steps in the right direction.
- Appear to be in two distinct groups: one that wants to provide the renewable energy industry with financial assistance and reduce greenhouse gas emissions; the other that responds more to a general desire to protect the environment and 'do the right thing'.
- Tend to be much more energy efficient than average.

In June 1999, Artcraft Research (1999) surveyed Victorian residential customers and found the following: People who say they would be likely to contribute to a Green Power scheme (57% of those surveyed) are more likely to be:

- Younger (64% among under 40s)
- Female (60%)

- From larger households (66% in households with five or more members)
- People with young families (69% in households with at least one child under 5 years).
- Members of environmental groups are little more likely to contribute to a voluntary scheme than the rest of the community (58% vs 55%), mainly because they believe that the cost should be shared by the whole community.

In the US, Capage (2001) surveyed 1200 Green Power customers and 400 standard customers and found that the former tend to be liberal (63.2%) not conservative (23.1%), and have a higher level of education.

Again in the US, Carrol (2001) divided Green Power customers into lifestyle description categories; Ecologist 60%, Fitness 47%, Home and garden 42%, Outdoors 29%. They also found that education was a stronger indicator than either age or income.

12.2.2 Residential customers

Research conducted by Energy Efficiency Victoria (EEV, 1998) segmented the community four ways:

- (i) the pro-environment group who, as far as possible, make purchasing and other decisions on environmental grounds;
- (ii) the environmentally conscious group who, while taking the environment into consideration, put more emphasis on cost, quality, convenience etc.
- (iii) the latent pro-environment group who profess vague concerns for the environment but do not generally display this concern when making decisions; and
- (iv) the currently unreachable group who express little or no concern for the environment.

In the context of Green Power, it is likely that most gains are to be made with pro-environment and environmentally conscious groups. In April 1999, the Australian Greenhouse Office commissioned research into community attitudes regarding greenhouse issues that culminated in the report "Community Awareness Research" (CAR, 1999). According to this report, prevalent within these target groups are younger people, young families, medium to high income earners, people with higher levels of education, and people from an English speaking background (CAR, 1999).

Although information should be presented to the entire community, targeting "early adopters" and "style leaders" may be beneficial. Early adopters are those that respond quickly and readily and, according to the CAR report, are likely to be well educated, professional or white collar workers, and in relationships or in families with children. Successful recruitment of style leaders or role models increases the likelihood of greenhouse friendly activity becoming aspirational (CAR, 1999).

12.2.3 Businesses and Large Customers

Although businesses are more difficult to enlist than residential customers, they are worthwhile targeting for a number of reasons. Firstly, they often purchase large amounts of power and so, as has been found in the US, the per-kWh customer acquisition costs are lower than in the residential market (Wiser *et al.*, 1999). As mentioned earlier, in the 2000–2001 financial year, although business customers made up only approximately 4% of customer numbers, they contributed almost 50% of sales (AA, 2002). Secondly, they generally purchase through long term contracts and so reduce risk for the retailer. Thirdly, they may provide an opportunity for free advertising of either Green Power in general or of a particular brand (Wiser *et al.*, 2000).

A recent positive development is the decision by the Victorian State Government to purchase 5% Green Power. It has been rolled into the first contract negotiation for centrally purchased electricity, and will be built into other contracts as they are renewed. Current demand will require about 20GWh/year to be supplied by CitiPower from the Toora wind farm when complete.

Because business customers join Green Power for different reasons to residential customers, they must be targeted in a different way. This has been covered in detail in a report commissioned by SEAV and prepared by the Open Mind Research Group (OMRG, 2001). Also available is a presentation by Carrol (2001) that, in summary, found the reasons for businesses to be involved in Green Power are:

- (a) that environmental stewardship is part of the corporate philosophy,
- (b) because of the personal belief of the top manager, and
- (c) it is experiencing poor environmental PR.

They also advised retailers to identify the company's decision maker and start as high up as possible, to expect to make 4-5 contacts because of the numerous layers of bureaucracy, and to stay in close contact after sign-up so as to not only aid retention but to learn more about that customer in order to target others more effectively.

12.2.4 Community role models

The use of community role models, with both personal and professional credibility, may reduce the need for complex messages, and so could be particularly effective in promoting Green Power. According to an Australian Bureau of Statistics survey (ABS, 1998), the government is not considered a trustworthy source of information and the general community was more likely to trust information from scientists or environmental advocates. It is likely that popular figures from completely unrelated fields such as sports, music and television programs (especially 'lifestyle' programs) may also be effective. Such 'personalities' have already been used to good effect for anti-homophobia (national), and anti-nuclear waste disposal (South Australia), campaigns. Community leaders, local councils, community service related organisations (eg. libraries) and members of local social groups (eg. Rotary) should also be engaged because they already have many of the right community relationships (Carrol, 2001). An advisory group of high profile respected citizens could be established to champion Green Power. Organisations likely to purchase Green Power, such as organic industries, ecotourism companies, and ethical investment firms, can also be very effective advocates and their expertise provides

validation of the environmental issues and program benefits. However, more conservative and mainstream organisations should also be targeted to avoid being seen as too alternative (OMRG, 2001). It should be possible to include a bill insert letter under Green Power letterhead (eg. SEDA) referring to a trusted group or person acting as a referee for Green Power.

12.2.5 Children

Another interesting possibility lies in conveying the message through children by appealing to people's sense of responsibility for the future. In 1997 and 2000, EPA surveys identified "concern for future generations" as the main reason for concern for the environment (EPA, 1997; 2000). Other environmentally-based campaigns, such as recycling, have managed significant penetration into the household through education of school children who then take the message home to their parents. Taking a medium to long term view, these school children will in time become householders themselves. Note that such campaigns have the additional advantage of not requiring direct financial contributions.

Contribution-based programs that install renewable energy systems in schools are an ideal vehicle for such an approach. Retailers could provide curriculum materials to educate children regarding the benefits of renewable energy.

12.2.6 Telemarketing

Anecdotal evidence supplied by retailers using telemarketing suggested that it is the most effective method of those mentioned above. According to Carrol (2001) it can be designed as a courtesy call, and allows for more detailed conversations, thus providing an opportunity to fully explain Green Power. It should be conducted in coordination with a bill insert as well as a limited direct mail out.

The two retailers with highest take-up rates (Origin - just over 3%; Actew AGL - 3.05%) both used telemarketing. Origin also had the highest premium (4.66c/kWh). One retailer said that once the details are explained by telemarketing the support is very good - 80% think it is a good idea and 25% of these are willing to pay. According to UR (2001) "surveys suggest that 15% of customers that are provided with the right information about Green Power, for example through telemarketing, do sign up". Unfortunately telemarketing can also be the most expensive and time consuming method. It should also be noted that both Ergon and Western Power used telemarketing but have only 1% and 0.07% take-up respectively.

12.2.7 Dual marketing

In the United States, one retailer (Sacramento Municipal Utility District – SMUD) markedly increased uptake by dual marketing their Green Power product with another product, Jamba Juice, which was identified as being popular with their target group (Burke, 2001). Thus marketing costs could be shared between two companies. Other obvious products to dual market with Green Power are those that reduce electricity consumption. Discounts on more expensive products or even a free compact fluorescent light globe could provide significant incentive.

12.2.8 The Australian Building Greenhouse Rating Scheme

This scheme is an example of an innovative approach for existing buildings that encourages electricity consumers to blend energy efficiency and Green Power to achieve maximum promotional benefit (ie highest star rating) while still achieving net financial savings. Since the marginal cost of Green Power is greater than standard electricity, the cost-effectiveness of energy efficiency measures is increased. Note that new buildings must achieve the star rating through energy efficiency measures only.

12.2.9 Green Power recognition

Some survey respondents felt that it would be beneficial to raise the profile of Green Power as a general category of electricity and a distinct option for consumers through a nationwide campaign. This could be performed co-operatively between all retailers in order to spread costs. However, previous attempts at this have failed due to the difficulties of competitors agreeing to co-operate on such a task. Recognition of Green Power as a general category would also be helped if there was only one brand nationwide called Green Power, not many different brands. This approach may of course be inappropriate in conditions of full retail contestability.

12.2.10 Marketing content

There are conflicting opinions regarding the level of detail required in a Green Power marketing campaign. Some advised keeping the message simple and easy to remember, while others stress the importance of having more detailed information available. A combination of the two approaches is also possible:

The basic structure of the Green Power product should be simple: a single product, 25/50/75/100% options, easy to join, and simple to calculate the financial impact of joining. The importance of offering different levels of financial commitment was highlighted by Farhar (1999) who identified distinct stratification in customers' willingness to pay more for a higher quality product (eg. greater renewable content). Offering only a single level of commitment may therefore significantly reduce the number of participants.

On all electricity bills the customer could be asked "would you like to switch to Green Power and avoid XXX kg of greenhouse gas pollution?". The customer should be able to simply tick a box. This type of easy sign-up option should also be available on electricity phone-billing services. Mandatory fuel mix and pollutant disclosure information which would support such an approach, is already in force in parts of the United States (Wiser *et al.*, 1999), and is being considered in Australia (SEDA, 2001).

More detailed information should also be readily available from a variety of sources including customer service staff, electricity bills and the retailer's home page. According to Carrol (2001) detailed specific information is important and should be objective rather than promotional. This information should cover areas such as:

(i) *Accreditation*: What accreditation is and how it differentiates Green Power from other forms of renewable energy. See Section 7 for an expansion on why this is important to both current and potential customers. According to AS (2001), the following accreditation materials and documents are provided by SEDA and other National Steering Group members:

- The Green Power Product Logo for use by Retailers on any promotional materials;
- The Green Power Customer Logo for use by customers who meet certain requirements;
- The Green Power Generator Logo for use by approved Green Power generators on-site;
- Annual audit reports covering all Accredited Green Power Products;
- Quarterly and monthly status reports covering all Accredited Green Power Products;
- Production of a range of promotional material for distribution to target audiences.
- National Steering Group members also coordinate information and education campaigns in their respective states, that may include:
 - Print, electronic and outdoor advertisements;
 - Joint promotional events with Retailers in both urban and regional centres;
 - Promotion through public meetings and seminars;
 - Presentation of relevant information, including the regular status reports and links to Retailer sites, on the National Green Power internet site;
 - Ongoing media relations activities and other public relations activities as appropriate. This material is made available to all Australian Green Power retailers.

(ii) *The Green Power system:* How it works, where the renewable energy paid for by the customer comes from and how it gets to the customer's home. Apparently there is still some talk of "how do they get the green electrons to my home?", and "where will they fit the 'green' generators in my back yard?".

(iii) *Global warming:* What it is, how it is caused, its personal and financial impacts, and renewable energy's role as a solution. It is important to emphasise the link between the individual's electricity consumption and global warming. According to a survey by Serchuk (2001) in the United States, 85% of respondents thought that individuals should take action to preserve the environment, however only 25% thought that their energy use at home had serious environmental consequences. The Renewable Energy Action Agenda (REAA, 2000), also emphasised that this information is essential to generate general community support for the renewable energy industry. Anecdotal evidence indicates that a significant proportion of the population believes that their electricity comes from sources such as hydro that do not cause global warming. Since promotion of the fact that most electricity in fact comes from fossil fuels would undermine the retailer's conventional product, there is a clear role for government in this area.

(iv) *Why Renewables cost more:* Issues to discuss include the impacts of economies of scale, that the current fossil fuel industry is well established, that external costs of fossil fuel use are not included in the price of electricity, and the abundance of fossil fuel reserves. A number of respondents suggested that all electricity bills should by law have greenhouse emissions data (avoided emissions for non-Green Power customers), pictures of a coal fired power station and a local renewable energy plant, and promotion of the Green Power product.

(v) *Local installations*: Normally when a consumer product is purchased, there is some tangible evidence of that purchase. However both global warming and Green Power are currently intangible and there is no sense of ownership. Physical examples of where the Green Power premium is being spent would be valuable in both convincing customers to join and in aiding retention. By focusing on specific renewable energy projects the emphasis will shift from, as one respondent put it, being a “greenie left wing expensive alternative”, to something that provides local employment and industry development. This could be especially relevant in rural areas suffering chronic unemployment, given the majority of renewable energy projects are located in these areas. Fifty seven (68%) of new Green Power plants are in rural areas whereas 27 are in city areas (GP, 2001); 60% of the Renewable Energy Commercialisation Program recipients are located in rural areas (RECP, 2001); and according to the Australian EcoGeneration Association almost three-quarters of a total of 116 currently committed and proposed EcoGeneration projects will be in rural and regional locations, AEA (2000).

The following suggestions were provided regarding renewable energy projects.

- Promote reasonably local (at least within the same State/Territory) renewable energy projects that provide tangible evidence of where people’s money is going.
- Promote tours of current renewable energy projects thereby helping people connect with the source and better appreciate the value of their purchase.
- Integrate media events of the opening of, for example, wind farms with the Green Power message, use visual images.
- Have the local television station use, for example, a photograph of a local wind farm as the backdrop for its weather reports.
- Possibly promote new renewable developments contingent upon sufficient green power uptake.
- Emphasise the job creation and regional development potential of renewable energy projects, and link to specific local examples if possible.

12.2.11 Cost

A variety of methods to decrease both the actual cost and the perception of expense were suggested and are summarised below:

- Promote a variety of energy efficiency technologies and behaviours to customers that will keep costs down to compensate for the higher premium. Green Power customers have been found to be more energy efficient than average. Unfortunately since energy efficient behaviour reduces retailers sales this approach is unlikely to be given high priority.
- It may be worthwhile having some hard data or a software package freely available to customers that shows how much energy/costs would be reduced with the use of specific energy efficient appliances and behaviours. It was felt that provision of this information by SEDA to NSW customers at no cost could be justified on their criterion of specifying a certain amount of greenhouse gas reduction per dollar spent. In the US, the Los Angeles Department of Water and Power offers free energy efficiency appliances and services to Green Power customers (Swezey and Bird, 2001).

- Offer special deals for longer term purchase agreements.
- Emphasise the cheaper forms available first (eg. 25% rate) then suggest 100% as an upgrade.
- Compare the weekly increase to a commonly purchased item such as a cup of coffee.
- Emphasise that retailers are not making a profit from Green Power (some customers object on the grounds they are just lining retailer's pockets).
- There may be value in providing reduced premiums to businesses, NGOs, and government departments on the basis that they advertise their contribution to the Green Power scheme in a manner that promotes a specific retailer. Such endorsement would confer credibility of both the product and process. Of the five CCP councils that responded, promotion of their Green Power purchase varied greatly from no advertising at all to press releases in the local media, web sites, newsletters, and community energy workshops. The degree of advertising corresponded closely with the amount of Green Power purchased.

12.2.12 Retention

In addition to the above, to encourage retention it was thought that existing customers should be provided with the following.

- Regular feedback highlighting what the retailer is doing with the Green Power premium, and the latest developments regarding Green Power and the renewable energy industry ie. how their contribution is making a difference.
- Businesses should be helped to promote their involvement in Green Power to the public.
- Some way to acknowledge/reward customers to create additional value. Possibly in the form of a well publicised reward or prize for a Green Power customer picked at random. Other benefits could include energy audits and special deals on environmentally friendly products.
- According to some, once a consumer signs onto a Green Power product they may be bombarded with other product offers through being identified as a soft marketing target. This is unlikely to encourage retention and would almost certainly reduce acquisition.

12.3 Customer Aggregation

Customer aggregation refers to the collection of customers into large pools of buyers acting as a single purchasing entity. Advantages for customers include being able to negotiate more favourable terms from retailers, and members may also have reduced transaction costs. Advantage for retailers include reduced marketing and acquisition costs, and the possibility of long term contracts and reduced risk.

Darebin City Council, Port Phillip City Council, Moreland City Council, and the Moreland Energy Foundation are in the process of establishing a community purchasers group called Community Power for residents and small businesses. In addition to providing cheaper prices and a range of energy services (subsidised energy audits, interest-free loans for energy efficiency measures and solar water

heaters and panels), the group intends to source 25% of its electricity through Green Power products. A survey of 300 residents indicated 97% approval for Council's participation in the project (Bennet, 2001).

13. Impact of Full Retail Contestability on Green Power

Full Retail Contestability (FRC), where all customers in each jurisdiction are able to select their energy retailer, was originally expected to occur in the ACT, NSW, Queensland, and Victoria on the 1st January 2002, and in South Australia in 2003. However, QLD has recently decided that it will not introduce FRC at all and given the difficulties that others have experienced, it is possible that FRC will also be delayed or cancelled in other States and Territories. At the time of writing, FRC was introduced in NSW and Vic in Jan 2002, and the ACT Cabinet has referred extension of FRC to smaller customers the ACT Independent Competition and Regulatory Commission (ICRC).

The following discussion is relevant where FRC proceeds, and is included to highlight the benefits to Green Power that FRC could provide. Where it does not proceed, Green Power schemes would continue to operate under existing (franchise) conditions.

Retailers were asked what percentage of customers they expect to switch retailers in the first few years of full retail contestability (the “churn rate”), and whether they thought promotion of Green Power would enhance customer loyalty and attract customers from other retailers. Note that the natural churn rate prior to FRC (primarily due to customers moving house) was 10%.

The predicted churn rate varied greatly between retailers, ranging from 2% to 30%. According to a NEMMCO consultation paper (NEMMCO, 2001), industry estimates of switching by customers less than 160MWh/year is 5% (2002), 7% (2003), 7% (2004), 9% (2005), 9% (2006), and 3% (2007), leaving only 60% with their original retailer. One reason retailers gave for low churn rates was that customers will have to pay for the meter needed to change, although according to NEMMCO this is not the case.

There were significant differences in the perceived usefulness of Green Power to attract and retain customers. Some retailers thought that because Green Power is not relevant for most customers, it would have little impact on their choice. This group also thought that most retailers will offer Green Power products, and so differentiation would be difficult. Other retailers thought that promotion of a green image was important and that Green Power was an ideal way to do this (although this would not necessarily attract Green Power customers), and would be most effective where other factors such as price were equal. For yet another group of retailers the usefulness of Green Power in retaining market share was confidential.

Thus it seems that promotion of Green Power could be useful in both attracting and retaining customers by generating a socially and environmentally responsible public image, simply because some retailers do not see it as valuable and therefore will differentiate themselves from those that do.

Research in the United States supports the role of Green Power in attracting and retaining customers. Farhar and Coburn (1999) found that 90% of customers would choose as their electric company the one that has taken steps to provide more renewable energy resources (note that they would not necessarily sign on to Green Power). It was also found that participants in green-pricing programs are significantly more loyal to their utility company than are other customers. Only 3% of green-pricing participants say they would switch utility companies, and 17% say they might

switch, compared with 40% of customers as a whole who say they would (16%) or might (24%) switch.

Full retail contestability has been introduced in a number of states in the US and in some a high proportion of those that switch have taken up Green Power (Swezey and Bird, 2000). Unfortunately, these results are not directly applicable to the Australian context, however they do provide some useful information.

In Pennsylvania during the first year and a half of retail contestability 10% of eligible customers switched and about 15% of those chose Green Power. However, under the state's restructuring rules, customers that switch retailers receive a "shopping credit" which they can use to offset the Green Power premium. This illustrates the fact that customers are more willing to forego a rate decrease than to accept a rate increase.

In California after more than two years of competition, only 2.2% of all eligible customers had switched suppliers. Of these, virtually all residential customers and many commercial customers had chosen Green Power. This occurred in part because a government credit for qualifying retail renewable energy purchases reduced the premium to as low as 5% below the default market price.

Thus it appears that if Green Power is to capitalise on full retail contestability, the market must be explicitly designed to not only facilitate high levels of switching, but to encourage take-up of Green Power products. For example, provision of credits by Australian State/Territory governments similar to those offered in Pennsylvania and California.

An innovative alternative for customers who don't want to switch retailer, that has operated in both the US and Australia, allows customers of other retailers to pay the Green Power premium on a nominated amount of kWh. Because this scheme is not linked to the customer's electricity supply, it can be offered in regions not yet open for retail competition, or even in other countries (Wiser *et al.*, 1999). Customer purchase of MRET certificates may operate in a similar way, as discussed in Section 14.

13.1 NSW Retail Licence Conditions

As of 1st July 2002 the NSW Government is proposing to introduce new licence conditions requiring retailers to reduce the per capita emissions of greenhouse gases. These differ in a number of ways to similar conditions in force previously, the most notable being that failure to comply will incur a financial penalty. However, the effectiveness of these conditions to reduce emissions is still uncertain. This is because abatement by renewable energy generation used to meet MRET requirements can be double counted to meet the licence conditions. Additional uncertainty derives from inclusion of Electricity Sales Foregone (ESF) and carbon sequestration abatement options.

The new licence conditions also propose that all Green Power generation can be counted towards meeting retailers' benchmarks, no matter where that generation occurs. This could provide a boost to Green Power as retailers see it as a cheap method of compliance through renewable energy generation. This approach may of course backfire if an already wary customer base sees this as a cynical attempt by retailers to pass on costs.

Such double counting may also limit the effectiveness of the licence conditions to encourage abatement. Alternatively, by reducing costs it may divert funding into

renewable energy options and away from dubious ESF and sequestration. An additional benefit may be that excess Green Power purchases can be used to meet licence requirements - thereby reducing financial risk.

14. Impact of MRET legislation on Green Power

The consensus opinion was that initially MRET would increase the cost of Green Power because retailers will be using the cheaper forms of renewable energy to meet their MRET obligations. This is because accreditation for Green Power is stricter than for MRET in terms of environmental guidelines – the assumption being that stricter guidelines increase costs. This has most effect on projects that are more likely to have an environmental impact, for example hydro and biomass which for Green Power are assessed on a case by case basis. Two of the most significant differences are the allowance of wood waste from forestry operations and incineration of municipal solid waste to meet MRET requirements. More detail on specific requirements for Green Power generators can be found in Section 4 and Appendix A of the National Green Power Accreditation Document Version 2 July 2001.

There was uncertainty whether this price effect would continue. Some thought it would get worse over time as MRET targets increase, others thought it would gradually decrease as the market became more familiar with renewable energy and economies of scale were reached. Note that as the Green Power requirement for 'new' generation increases with time so will its price. At the time of writing MRET requires 100% generation to be "new" whereas Green Power requires only 70%. However whereas MRET classifies any increase in capacity above a baseline as "new" (where the baseline is generally the average of the electricity generated in the three years prior to 1997, adjusted to take account of system losses), Green Power includes only new capacity installed post 1st Jan 1997.

Current prices for Green Power products, RECs and the MRET penalty for non-compliance give a good indication that Green Power will support more expensive type of renewable energy. The average Green Power price is 3.89c/kWh which equates to \$38.90/MWh. The latest REC price is approximately \$27 and the penalty for non-compliance (which is not indexed and so will stay the same until 2010, unless amended in the 3rd year review) is \$40/MWh.

Some retailers – who can simply pass increases on to consumers – saw this as less of a problem for themselves as a problem for Green Power. Other retailers that are more restricted by government in how much they can increase Green Power or standard electricity premiums, saw this as a significant problem that could cost them millions of dollars every year. For a detailed analysis of retailer, generator and NGO feedback regarding Green Power and MRET prior to the introduction of MRET, see the stakeholder review paper "Green Power Mandatory 2% Target: Steering group recommendations from stakeholder feedback" (SEDA, 2000).

Although it appears likely that there will initially be an excess of MRET compliant capacity, much of this will not be Green Power compliant. Of course one positive synergy between MRET and Green Power is that retailers can use excess Green Power purchases to meet MRET requirements (with a possible small financial penalty as mentioned in Section 10.2).

Additional effects of MRET on Green Power for retailers include an extra level of reporting and auditing complication, and the possibility that retail marketing of Green Power and MRET will be combined. Retailers may be less inclined to market Green Power because they would no longer need Green Power to highlight their green credentials. It was thought unlikely that 'double-dipping' would occur because all

renewable energy certificates (RECs) used for Green Power must be surrendered to SEDA and so cannot be used to fulfill MRET requirements.

Some respondents thought that consumers may be less inclined to support renewable energy through Green Power, given that it is already being supported by MRET. Others thought that those sectors of the community with enough understanding of the area to be aware of the MRET support, would be sufficiently well informed to understand the difference between the two. One simple way of overcoming this could be to use a star rating for methods of supporting renewable energy: MRET could get one star and schemes supporting strategically important, very low impact sources and supplying 100% of usage could get 5 stars.

14.1 Non-Accredited Renewable Energy (NARE)

According to the NGO's surveyed, some retailers are planning to introduce a cheaper non-accredited form of renewable energy in direct competition with Green Power. There are a number of reasons this could be implemented.

One reason could be to finance renewable generation that for some reason does not satisfy Green Power auditing requirements. For example the plant may have been built prior to January 1997 and so be classified as 'existing generation'. This would include major projects such as the Snowy Hydro Scheme, or others such as small hydro that are financially marginal and in danger of closing. In both cases the non-accredited renewable energy (NARE) premium would not increase the amount of renewable energy plant, however in the latter case it may serve to maintain the existing base.

Another reason for non-accreditation could be that the source does not meet Green Power guidelines (eg. native forest waste). Given the extent of public opposition and retailer sensitivity to this source, it is unlikely that the NARE premium would be used for this purpose.

Another reason for introducing NARE could be to meet MRET obligations. In this case the premium could be used to either pay for cheaper forms of renewable energy such as bagasse, or to make up the cost difference between these forms and more expensive forms such as wind and PV. If used for cheaper forms, the NARE premium would not increase the renewable energy plant developed to above that required by MRET, it would simply provide financial aid to retailers. To this extent MRET requirements would be met by a levy targeted at a small base of customers, rather than an across-the-board tariff increase.

If used to bridge the gap between cheaper and more expensive forms of renewable energy, it is unclear whether NARE would aid development of Australia's renewable energy industry, especially one that could supply a significant proportion of demand. On the one hand, such a scheme may attract customers for whom Green Power is too expensive, increasing the finances available to upgrade from cheaper to more expensive forms of renewable energy. However, it may also attract customers away from Green Power. The net effect of the latter possibility would be an unchanged level of financial support for more expensive forms of renewable energy, but a reduced level of support for cheaper forms. To illustrate this, assuming that all Green Power customers transferred to the NARE, all the Green Power renewables currently produced would go to meet MRET requirements, and an equivalent amount (in GWh) of the cheaper forms of renewable energy would no longer be produced. Thus the

maximum amount of renewable energy produced would be limited to that set by MRET legislation.

According to one retailer the introduction of NARE is necessary because the default tariff (that will apply to customers opting to stay with their current supplier), set by their State Government as a maximum limit for FRC retail prices, is too low. However, if this was the case, the solution would be to simply invest in cheaper forms of renewable energy that the premium is meant to convert to the more expensive forms. One reason this may not be possible is that insufficient options for cheaper plant exist to meet MRET requirements, in which case the non-accredited renewable energy premium is for an upgrade to more expensive plant that the retailer would have made anyway. Thus, again, the extra premium would make no difference to the amount of renewable energy plant developed, it would be in lieu of an incremental across-the-board increase.

Note that the NSW State Government maintains their default price was calculated to cover the cost of meeting retailer licence emissions benchmarks and their MRET obligations. However it is also true that a slightly higher default price could apply less pressure to retailers (and therefore Green Power), would encourage switching as customers sought a cheaper product, and would minimize barriers to entry thereby facilitating a competitive market. In fact, a recent survey of Green Power marketers in the United States found that a default price high enough to allow entry by new generators was considered the single most important market rule to encourage competition (Wiser *et al.*, 1998).

Non-accredited renewable energy would of course not be subject to the same rigorous auditing procedures as Green Power with regard to financial, technical and environmental criteria. For example, once a retailer's MRET requirements were met, customers would have no independent proof their premium was being used to sponsor more expensive types of renewable energy projects. Faced with two options in purchasing renewable energy, one more expensive than the other, it is probable that customers will chose the cheaper option, thereby reducing support for Green Power. If Green Power is to survive, differentiating between it and NARE will be critical. Green Power is financially marginal at best (seven of the thirteen retailers made a loss on their Green Power product in 1999-2000; AA (2001)), and it is unlikely that retailers will devote significant resources to clearly differentiating between the two, especially with regard to the criteria discussed above. For example, assuming the NARE premium is used to meet MRET requirements, the social stigma of failing to meet MRET obligations and paying the 4c/kWh fine would not be compensated by the positive marketing effect of having a Green Power scheme (along with all other retailers). Thus responsibility for this falls to SEDA, other State and Territory equivalents, and NGOs. Of course little action can be taken until one or more retailers introduces its NARE product to the market and identifies the type of generation supported.

14.2 RECs purchase

Another possible outcome is for customers to purchase RECs in order to support renewable energy deployment independently of their own consumption. Taking RECs out of circulation will increase the total amount of renewable energy needed each year, as privately purchased RECs will be in addition to those needed for retailers to meet their MRET requirements. One simple way of doing this would be for

purchases of solar hot water systems to forgo their RECs. For some customers, REC purchase may replace their Green Power purchases, for others it will be additional. Nevertheless, at present there is no general information which would serve to encourage such customer choice. NGOs or local cooperatives may begin to investigate this approach in time.

15. Alternatives to Green Power

When survey recipients were asked about possible alternatives to Green Power a number were suggested that differed either in the type of renewable energy supported or the cost structure employed. These were:

- (i) Solar water heaters and residential renewable energy power systems (unless finance is available, this would replace small ongoing costs with a large up-front single payment, but has more direct customer involvement)
- (ii) Contribution-based products (recently seen as unsuccessful and so terminated)
- (iii) The non-accredited renewable energy (NARE) mentioned earlier.
- (iv) Local renewable cooperatives eg. at local council scale.
- (v) An across the board levy based on the carbon intensity of energy used (carbon tax)
- (vi) A Green Energy market that is not focussed on the retailer - eg a generator based market where a customer can contract directly with a generator, as via MRET RECs purchase.
- (vii) Portfolio-based MRET that specified a certain percentage of Green Power-accredited forms of renewable energy.
- (viii) Contracting, as in the US SMUD program, where customers pay a flat monthly rate (US\$4) to have PV panels (still owned by SMUD) installed on their roofs.
- (ix) Private shareholders participation where shares in a renewable energy plant are sold in blocks of for example 100 W. An example of this programme type is the "Bürger für Solarstrom" – Model of the "Bayernwerke" in Germany and the Citi-Power PV Program in Victoria.
- (x) Solar stock exchange (run by a retailer/generator) where customers buy electricity from privately owned PV systems linked to the grid and pay rates corresponding to the annualised production costs.
- (xi) Packages for building developers/builders to purchase a share of a wind generator or other renewable energy generator, and for the occupants to 'own' its power output while paying the operator an management fee.

Of these only a portfolio-based MRET, a carbon tax, and possibly the solar stock exchange would provide support for the same types of renewable energy as Green Power using a similar incremental ongoing cost structure. A green energy market focussed on the generator may provide similar support to Green Power however would presumably involve a different price structure not channeled through electricity bills. As previously discussed, this is now possible through purchase of RECs, which can be traced back to specific generating sources and are priced according to the market at the time. However, many of these schemes could quite effectively co-exist with Green Power and so could provide additional support for renewable energy by increasing customer choice and by operating in market segments where Green Power is less effective. Thus, rather than alternatives to Green Power, they may represent more a maturing of the market for different products and would increase customer awareness and knowledge.

16. Summary

The consensus view is that Green Power is, for a number of reasons, worth supporting. However, as is the case overseas, although Green Power customer numbers and sales initially increased, they represent only a small percentage of eligible customers.

Assuming that Green Power is expected to keep growing, the challenge lies in converting widespread consumer support for renewable energy into equivalent levels of financial support for Green Power schemes.

Customers - Although cost is a major factor affecting uptake, it is not the only consideration, and there are a variety of methods available for retailers to reduce its impact. Existing customers appear to have faith in Green Power, however an unknown number of potential customers may have legitimate concerns. Although promotion of the accreditation process may address these, it appears that a process allowing direct customer input may be required.

Generators - The two main issues between retailers and generators are cost (where the price retailers can pay generators is restricted by the premium affordable by customers), and generator's requirement for long term contracts/certainty that retailers are unable to provide.

Retailers - Despite its complexities and additional administrative requirements, Green Power is attractive to retailers as a marketing tool. However because of the small existing customer base, only a limited amount of resources are available for promotion and operation. Thus accreditation reporting and associated administrative burdens are a problem, although necessary in terms of credibility for customers.

Government – There are a variety of options available for government to increase Green Power uptake. These include; removal of GST on Green Power, government purchase, comprehensive and effective State and Federal government legislation and tax concessions/subsidies targeted at reducing the cost of renewable energy and therefore Green Power, and general promotion of RE through education campaigns.

Full Retail Contestability - Green Power is seen by some retailers as a valuable tool in promoting customer acquisition and retention in conditions of full retail contestability. Others see it as having too small a base to be effective.

MRET - Is likely to have a significant impact on Green Power, from increasing prices to the creation of alternative products, including both RECs and NARE, that could directly compete for market share, but also offers some potential beneficial synergies.

A variety of different approaches that provide support for renewable energy, via Green Power or otherwise, have been identified and should be examined by policy makers and pursued as appropriate.

17. Recommendations

1. This review has highlighted a number of issues that need to be addressed. Active and direct involvement of the Green Power Project Manager, currently SEDA, may be necessary to facilitate a forum of retailers to emphasise and develop these issues and responses to them. Another critical aspect that must be addressed is the need for direct input from both existing and potential customers. The latter are particularly important because it is only through addressing their concerns that customer numbers will increase. One possibility is a public forum specifically for potential and existing customers that could be either attended in person or via electronic or standard mail. Although this could be convened by SEDA, they may be seen as too involved in the existing process. In this case the ACRE Energy Policy Group may be appropriate.
2. Retailers should place much more emphasis on explaining accreditation to customers. Accreditation can be used to reassure customers that their extra money is resulting in establishment of new renewable energy plant of net environmental benefit. This encourages participation by helping to overcome concerns that Green Power contributions may simply provide financial support to retailers. Customer faith in Green Power is critical and lack of it certainly contributes to low uptake. Both the Government and the electricity industry have low credibility so help should be enlisted from community based organisations and individuals that have consumer confidence.
3. Contribution-based schemes could be re-evaluated in terms of fulfilling a niche market, especially if contributions are tax deductible. Giving retailers the option of accrediting such schemes if they choose to may provide funding for small local projects, and help increase community awareness through education and by involving customers who may not feel able to make major contributions. Both contribution- and capacity-based schemes allow support for renewable energy to be de-coupled from consumption of electricity. This may be important for customers who wish to be energy efficient and reduce their consumption, yet are keen to see an increase in renewable energy deployment.
4. Given that in both Australia and the United States there is no correlation between premium and take-up rate, consideration could be given to increasing the premium. This would provide more resources for development of a credible high quality Green Power product and for effective marketing, both of which have been shown to be correlated with uptake. It would also address the concern voiced by both retailers and generators that the premium was insufficient to meet the additional cost of renewable energy, especially if MRET increases it further. Where Government sets the retailer's Green Power premium, it should consider the merits of permitting reasonable increases. Nevertheless, where retailers view Green Power as an important product in competitive markets, additional promotional costs could well be wrapped into overall marketing budgets. Obviously it would be preferable for the price of fossil fuel based electricity to be increased instead, to reflect environmental impacts.

5. Government should provide additional support for renewable energy, including through education. Education should concentrate on the seriousness of global warming, its impacts, that it is caused by existing electricity supply, and renewable energy's role as a solution. The collateral employment and development benefits of renewable energy should also be promoted. Government should play an active role in building the profile of Green Power, especially generic and longer term promotion. Direct support for renewable energy could be through a variety of avenues including removal of the GST on Green Power, government purchase, comprehensive and effective State and Federal government legislation aimed at increasing renewable energy use, and tax concessions/subsidies targeted at reducing the cost of renewable energy and therefore also Green Power.

6. Retailers should make themselves familiar with the wealth of information available regarding the characteristics of Green Power customers (residential and business), methods for conveying the Green Power message, the type of information that should be conveyed, and general strategies that aid both acquisition and retention. Much of this information is summarised in this report and could stimulate both customer desire to support renewable energy, and the wish to do so through a Green Power product.

7. If Green Power is to capitalise on full retail contestability, the market must be explicitly designed to not only facilitate high levels of switching, but to encourage take-up of Green Power products. For example, provision of credits by Australian State/Territory governments similar to those offered in Pennsylvania and California. If FRC is implemented, it is possible that promotion of Green Power could be useful in both attracting and retaining customers by generating a socially and environmentally responsible public image, simply because some retailers do not see it as valuable and therefore will differentiate themselves from those that do.

8. If non accredited renewable energy is introduced by retailers, then this should be done in such a way that it increases the total amount of renewable energy generation rather than simply helping retailers meet their MRET requirements at the expense of Green Power. The public should be sufficiently informed to be able to differentiate between the Green Power and NARE products, especially regarding the type of generation, whether it is new or existing, and whether it is being used to meet the retailer's MRET requirements. The option of direct purchase of RECs should also be promoted. This will increase renewable energy generation in a manner that allows customers to support the specific generator of their choice and to de-couple electricity consumption from their support for renewables.

18. References

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