6

Marketing Renewable Energy

Introduction

6.1 Australia is among the world's leaders in technology development for renewable energy and has the potential to establish a significant industry and to generate employment opportunities in the future. In recent years, Australia has experienced notable growth in the sector, primarily due to greater investment stemming from environmental concerns about the sustainability of fossil fuel usage.

6.2 However, even with recent growth in the sector and Australia's technology expertise, in comparison to other developed countries Australia's use of renewable energy remains low. This is despite Australia's climate which is amenable to solar energy generation, the many exposed and undeveloped sites which are potentially suited to wind farm sites, and the access to a range of other renewable energy sources.

6.3 From data on the renewable energy industry and from evidence presented during the inquiry, the Committee found that a substantial gap exists between apparent consumer commitment to renewable energies and the purchase of energy from these sources. Taking as a template for action the four key drivers of ESD, which have already been discussed, the Committee has recommended a range of legislative, labelling and leadership initiatives to build market supply and demand for renewable energy.

Industry structure and growth

6.4 The renewable energy industry is a discreet segment of the environment sector. Examples of renewable energy include solar, wind, tidal, biomass and hydro energy.

6.5 There are limited statistics on Australia's environment industry and fewer for Australia's renewable energy sector. In 1995-96, ABS data estimated renewable energy industry sales at $850 million.[1] Over half of this total ($490 million) was from hydro-electricity sales.[2]

6.6 At present, Australia is experiencing growth in the renewable energy industry and there appears to be significant potential for this industry to expand in the future, in both national and international markets. The Committee heard evidence that growth in this industry will offer Australia substantial employment opportunities in addition to improved environmental outcomes.

6.7 The drivers for growth in the renewable energy industry include:

- A reduced availability of some fossil fuel resources;
- An increase in environmental and sustainability concerns regarding the continued use of fossil fuels;
- Concerns regarding the dependence on energy imports and consequent national security issues; and
- In some instances, the falling costs for renewable energies.

Export Markets

6.8 The National Capability Statement on Australia's Environment Industry comments that the renewable energy sector is a niche market exporter.[3] A key recommendation from the REAA relates to the need to implement an integrated export strategy to capture international market opportunities.[4]

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1 Centre for Strategic Economic Studies (2001), *National Capability Statement on Australia's Environment Industry*, Prepared for Environment Australia, p. vi.

2 Centre for Strategic Economic Studies (2001), *National Capability Statement on Australia's Environment Industry*, Prepared for Environment Australia, p. 45.

3 Centre for Strategic Economic Studies (2001), *National Capability Statement on Australia's Environment Industry*, Prepared for Environment Australia, p. XIV.

4 ISR (2000), *Renewable Energy Action Agenda: New Era New Energy*, Executive Summary, p. 6.

6.9 ITR informed the Committee that, in cooperation with Austrade, it had supported a small group of Australian renewable energy companies in a successful trade mission to Chile, Brazil and Mexico. As a result of this trade mission, a joint Renewable Energy Exporters Network had been established and further export opportunities are being investigated.[5]

6.10 The 2002 implementation report for the REAA estimated that the prospective business from the Exporters Networks may be worth between $60-80 million.[6]

6.11 In addition, the Office of the Renewable Energy Regulator (ORER) advised the Committee that 'the mandatory renewable energy target is also expected to support the development of export-oriented industries in Australia'.[7]

6.12 The limited evidence presented to the Committee suggests that the export potential of Australia's renewable energy industry is strong and that export strategies are successfully increasing international market demand and establishing Australia as a niche supplier.

Domestic Markets and Employment Generation

6.13 The Committee heard a range of evidence confirming the potential to boost domestic market demand for renewable energy. AGO outlined some of the Australian Government's strategic measures to support the uptake of renewable energy in Australia. These measures cover the following three areas:

- Commercialisation – providing the link from R&D to widespread adoption;
- Industry development – developing the capacities of the renewable energy industry broadly (education, standards, training, accreditation); and
- Deployment – putting established technology on the ground and establishing familiarity and experience.[8]

5 *Transcript of Evidence*, p. 26.

6 ISR (July 2002), *Renewable Energy Action Agenda: New Era New Energy Implementation Report*, p. 1.

7 Submission no. 13, p. 5.

8 Submission no. 26, p. 13.

6.14 The AGO emphasised that each of the above areas delivers job creation to varying degrees and that many of the projects are:

> … developing technologies that will have extensive applications in Australia and abroad. For these projects, the level of job creation will depend on the uptake of the technology in the marketplace.[9]

6.15 DEH informed the Committee of a joint research project on renewable energy employment potential, undertaken by the Australian Eco Generation Association and the Renewable Energy Generators of Australia. The project compares job creation from three renewable energy projects with the job creation of a gas and a coal-fired plant. Results from this research demonstrated significantly greater job creation per unit of investment from the renewable energy projects.[10] Results are provided at Table 6.1.

Table 6.1. Renewable energy sources and employment generation.

Eligible Energy Source	**Construction employment (approx)**			**Permanent employment (approx)**		
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
New hydro	700	2100	2800	9	26	35
Wind	2100	8400	10500	26	79	105
Solar (Photovoltaics, Solar Tower etc)	900	2700	3600	45	135	180
Biomass (bagasse, cotton, macadamia, wood waste etc)	3840	11520	15360	480	1440	1920
Landfill gas	3600	10800	14400	180	540	720
Existing resources (upgrading, refurbishment)	350	1050	1400	-	-	-
Totals	11490	34470	45960	740	2220	2960

Source Submission no. 13, p. 4.

9 Submission no. 26, p. 13.

10 Submission no. 26, p. 6.

6.16 This data was supported by a 2002 Greenpeace report, which found that 'clean energy industries create more employment opportunities per dollar invested than non renewable energy sources such as fossil fuels'.[11] An overview of the direct employment per million dollars invested is provided at Table 6.2.

Table 6.2. Direct employment per million dollars invested.

Technology	Jobs per A$ million invested
Oil shale	0.5
Solar electric	3.5
Energy efficiency	35-50

Source Greenpeace, *Jobs and the Oil Shale Industry*, www.greenpeace.org.au, last accessed 4 August 2003

6.17 The ORER submission stated that a renewable energy project generates employment across a range of areas, including:

- Technical: such as project planning and design, manufacturing, construction and plant operation and maintenance;
- Environmental expertise: such as site management, emissions and waste management, consultation, environmental impact assessment, and resource assessment and management; and
- Other related sectors: such as economic and market forecasting, energy trading and brokering and tourism.[12]

6.18 In addition, ORER informed the Committee that certain types of renewable energy technologies appear to have a strong tourist attraction potential, which can result in additional employment opportunities. For example, Snowy Hydro and Hydro Tasmania conduct guided tours through their generation facilities. Major wind farms projects, such as proposed or established in Albany (Western Australia), Codrington (Victoria), Windy Hill (Queensland) and Blayney (New South Wales) are attracting tourist interest.[13]

11 Submission no. 32, p. 11.
12 Submission no. 13, p. 3.
13 Submission no. 13, p. 3.

6.19 During a public hearing, the ORER commented that a significant number of jobs could be generated if the renewable industry had $6 billion of additional investment by 2010. However, the ORER stated that the number and skill level of these jobs was hard to predict due to the mix in the market:

> … jobs are likely to be very diverse in nature and cover areas such as project planning and design, manufacturing, construction, operation and maintenance of plant, site assessments, economic and market forecasting, energy trading, broking and tourism.[14]

6.20 As an indicative estimate, the ORER suggested the additional investment could generate 45 000 construction jobs between now and 2010, with up to 3 000 permanent jobs.[15]

6.21 The Committee was interested to ascertain what, if any employment displacement might take place as a result of a steadily increasing renewable energy industry. As an example, DEH advised the Committee that the coal industry would:

> … not suffer any job losses as a result of renewables, but certainly there will be a supplementary addition to the workforce coming from the development of the renewable energy industry.[16]

6.22 Other evidence presented to the Committee suggested that the growth of the renewable energy industry would not occur at the cost of exiting energy industry employment.

6.23 With such demonstrable potential for employment growth and clear environmental benefits, the Committee wishes to ensure that Australia is maximising the uptake of renewable energy, particularly of solar technology in the domestic market.

14 *Transcript of Evidence,* p. 32.

15 *Transcript of Evidence,* p. 32.

16 *Transcript of Evidence,* p. 68.

Sector Initiatives

6.24 A number of Australian Government programs have assisted in growing the renewable energy industry in Australia and promoting domestic and international market opportunities. Given the success of the industry's development, the Committee is keen to ensure that the momentum of this growth is maintained. The Committee considered current initiatives and new proposals to enable the industry to be a viable and competitive alternative to fossil fuels.

6.25 There are a range of programs and policies assisting the growth of the renewable energy industry in Australia. The most significant sector development programs are the REAA and the Mandatory Renewable Energy Target (MRET).

General Programs and Policies

6.26 AGO delivers a range of programs and policies targeted at increasing the use of renewable energy and reducing greenhouse gas emissions in Australia. Some of these programs include the Renewable Remote Power Generation Program, the Photovoltaic Rebate Program and the Alternative Fuels Program. Many of these initiatives offer both environmental and social benefits to the community.[17]

6.27 To date, the current Australian Government has committed $377 million in programs to support the commercialisation and deployment of renewable energy technologies and related industry developments.[18]

6.28 Additional measures undertaken by the Australian Government to support Australia's renewable energy sector include the establishment of the Australian Cooperative Research Centre for Renewable Energy (ACRE), and the Centre for Application of Solar Energy. Several states and territories have also set up strong programs of research for renewable energies (for example, the Photovoltaics Special Research Centre at the University of New South Wales).

17 Submission no. 26, p. 6.

18 The Hon Dr David Kemp and The Hon Ian Macfarlane (25 May 2003), *Million Dollar Boost to Renewable Energy Industry*, Joint Media Release, p. 4.

Renewable Energy Action Agenda

6.29 The REAA, developed jointly by the industry and the Australian Government, was launched in June 2000. The vision of the REAA is to harness the potential of the industry and achieve $4 billion worth of annual sales by 2010.[19]

6.30 The REAA has developed five over-arching strategies addressing:

- Market development;
- Building community commitment;
- Building industry capability;
- Setting the policy framework; and
- Encouraging a culture of innovation.[20]

6.31 A total of 25 recommendations were agreed in the REAA. Leaders from the renewable energy industry, the Australian Greenhouse Office and ITR are responsible for implementation of the REAA recommendations.

6.32 A major initiative stemming from the REAA was the establishment of the Renewable Energy Equity Fund (REEF). The REEF program provides venture capital support to develop innovative renewable energy technologies. Since the REEF program became operational in December 2000, grants have been made to a number of companies, supporting a range of renewable energy technologies such as biomass, solar, geothermal and wind. REEF has provided approximately $27 million of venture capital funds for renewable energy projects.[21]

Mandatory Renewable Energy Target

6.33 In April 2001, the Australian Government introduced the MRET as a policy initiative to support the uptake of renewable energy in the national energy market.

19 ABS estimates sales in 1995-6 were $850 million (*National Capability Statement*, p. vi).

20 *Transcript of Evidence,* p. 18.

21 *Transcript of Evidence,* p. 22.

6.34 The MRET operates under the *Renewable Energy (Electricity) Act 2000* and associated regulations. Wholesale purchasers of electricity are required to progressively increase the amount of electricity purchased from defined renewable energy sources. The ORER oversees the MRET and ensures that purchase targets are met.

6.35 The ORER outlined to the Committee the progressive targets of the MRET scheme:

> Targets have been implemented each year over the period 2001-2020. The target for 2001 was 300 000 megawatt hours (MWh) with this rising to 9 500 000 MWh by 2010.[22]

6.36 The 2010 target of 9 500 000 MWh is the equivalent to the amount of electricity required to meet the domestic electricity needs of approximately four million people.

6.37 The annual targets are implemented through a certificates trading program whereby each MWh of qualifying electricity is eligible to create one renewable energy certificate (REC). These RECs are sold or traded between energy generators and wholesale purchasers to meet individual liabilities. Open trading of RECs overcomes issues of varying renewable energy capacity across the country that could otherwise occur.

6.38 The ORER emphasised that significant investment in renewable energy generation capacity will be required to meet the 2010 target of 9 500 000 MWh, with industry estimates ranging from an expected 2 000 to 4 000 MWh. The ORER commented that this investment will generate employment opportunities since direct investment could be as much as $6 billion over the life of the scheme.[23]

The Future of Mandatory Renewable Energy Targets

6.39 In November 2002, a panel, commissioned by the Australian Government, released its draft report, *Towards a Truly National and Efficient Energy Market*. The report recommended the introduction of a cross sectoral greenhouse gas emissions trading system, which would facilitate the reduction of greenhouse gas emissions in the electricity and gas sectors. The report went on to recommend that the MRET, along with several other initiatives, cease to operate once an announcement had been made on an agreement to implement an emissions trading system.

22 Submission no. 13, p. 2.

23 Submission no. 13, p. 2.

6.40 The Committee heard of the substantial debate that has surrounded the suggested abolishing of the MRET. The majority of industry stakeholders, including the ROUNDTABLE renewable industry forum, strongly believe that the MRET should be maintained in its present form or increased to 10 per cent by 2010. In their submission to the inquiry, the ROUNDTABLE stated that:

> The MRET should be increased to 10 per cent above 2001 levels by 2010, and further increased to 20 per cent above 2001 levels by 2020. These targets should be based on a percentage of consumption rather than fixed targets.[24]

6.41 The Sustainable Energy Development Authority (SEDA) believes that the review panel's draft recommendation to abolish the MRET has had a dramatic effect on the renewable energy industry in Australia. SEDA noted that the MRET has been a key driver for renewable energy investment, assisting in creating economies of scale which are reducing unit costs to competitive levels. However SEDA stated that, since the announcement of the draft recommendation, investments have 'screeched to a halt'.[25]

6.42 EBA also strongly disagreed with the draft recommendations from the MRET review panel. At a public hearing, a representative from EBA commented that:

> I believe that [the review panel's] argument—that, if we have a national emissions trading system, we do not need an MRET—is actually false. You can have a national emissions trading program and look at it as an umbrella program. Underneath that you can hang any number of market mechanisms that make the whole system more efficient. MRET is very good at doing that. Plus, there is a lot of sunk investment—and not only from the renewable energy people—in MRET, which I think would be sadly wasted if MRET were to disappear.[26]

24 Submission no. 23, p. 2.

25 Thomson CPD, *Environmental Manager*, Issue 428, p. 3.

26 *Transcript of Evidence*, p. 175.

6.43 The South Australian Government provided evidence on policy measures that could encourage the further development of renewable energy. The submission advocates that the MRET be retained, recommending that:

> … the Commonwealth commit to increase the Mandatory Renewable Energy Target from 2 per cent to 10 per cent, thereby bringing Australia into line with leading international renewable targets and opening further opportunities for renewable energy producers and support industries.[27]

6.44 The objectives and achievements of the MRET are also consistent with the REAA vision and the Australian Government agreed strategy for the industry. A key REAA recommendation is to leverage government support for renewable energy business opportunities. The MRET is a major contributor towards this and some companies have reported a significant increase in trading as a result of the new legislation.[28]

6.45 The Committee agrees with the 2002 implementation report of the REAA, which states that 'there is a danger that [the industry's] momentum will be lost if Government assistance is reduced or withdrawn'.[29]

6.46 The review panel's final report on the MRET is due in late 2003. Regardless of the report findings, the Committee considers that there is national value in retaining the MRET policy and increasing the targets above the levels currently set.

6.47 Evidence presented to the Committee strongly supported an increased MRET with 10 per cent above 2000 levels implemented by 2010 being a consensus view.

6.48 Where such strong environmental benefits are to be gained from the increased use of renewable energy, the Committee considers that there is a Australian Government responsibility to undertake a multi-faceted approach to increasing market demand for and supply of renewable energies.

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27 Submission 32, p. 3.

28 ISR (July 2001), *Renewable Energy Action Agenda: New Era New Energy, Implementation Report*, p. 5.

29 ISR (July 2001), *Renewable Energy Action Agenda: New Era New Energy, Implementation Report*, p. 1.

6.49 While mandated requirements are not an appropriate driver of sustainability in all instances, the Committee sees a clear role for establishing minimum targets in this context. The MRET has successfully provided growth opportunities for the industry and, regardless of emissions trading or other initiatives, the Committee concludes that the MRET policy should be retained and the targets increased.

6.50 The Committee recognises that for Australia to commit itself to ESD principles, leading policy and legislative decisions are required. Retaining the MRET and increasing the mandated annual targets is one such decision.

6.51 The Committee was receptive to submissions proposing a 10 per cent increase in the MRET by 2010 and advise that this target was realistic viable and achievable.

6.52 However, the lack of independent analysis on the likely impact on consumers and the economy make the Committee hesitant to recommend a specific target and implementation date.

6.53 Other measures considered by the Committee that could form part of a multifaceted approach to increase market demand for and supply of renewable energy include tax incentives, project facilitation, peak-load provisioning and network interconnect assistance.

Recommendation 10

6.54 **The Committee recommends that the Australian Government:**

- **Retain the Mandatory Renewable Energy Target;**
- **Substantially increase the Mandatory Renewable Energy Target as part of a multifaceted approach to increase market demand for and supply of renewable energy; and**
- **Implement a timely review of the Mandatory Renewable Energy Target for beyond 2010 with a view to furthering the uptake of renewable energy in Australia.**

Photovoltaics and Solar Technology Expertise

6.55 Australia is an international leader in the area of photovoltaics, in terms of research programs, innovation and in the utilisation of these technologies in areas such as solar energy generation, solar heating and pumps.

6.56 Australia is also considered an international leader in energy efficient heating using solar and other heating technologies. The ORER commented that:

> … we are seeing other technologies emerging or other technologies within that solar water heater system emerging. Some of them are very appropriate to Australia. For example, the integration of photovoltaics with hot water systems.[30]

6.57 A combined research paper from ACRE and the Centre for Photovoltaics Engineering suggested that in 2002 over 70 per cent of photovoltaic cell production in Australia was expected to be exported. Despite fluctuations in exports over the last decade, the paper suggests that the future of Australia's off-grid photovoltaics market should remain strong.[31] This prediction was based on continued Australian Government support through the continuation of the MRET generating 9 500 000 MWh of extra renewable energy by 2010.

6.58 The Committee considered that, while this export outlook is extremely encouraging, it also suggests an untapped domestic market for solar technologies.

6.59 To further investigate the potential of the domestic market, the Committee held discussions with the renewable energy company BP Solar and inspected different applications of solar technology.

6.60 These inspections confirmed for the Committee the potential for industry and employment growth if domestic demand for solar technologies, in particular, could be increased.

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30 *Transcript of Evidence,* p. 37.

31 M. Watt, and I. MacGill, *Jobs and Investment Potential of Renewable Energy: Australian Photovoltaics Industry Scenarios,* ACRE and the Centre for Photovoltaics Engineering, UNSW, p. 3.

6.61 BP Solar is engaged in supplying, installing and supporting a range of solar power applications. It employs approximately 300 people on a rotating roster of four days on and four days off. It is the largest photovoltaic manufacturing facility in the southern hemisphere and over half of the factory's output is exported.

6.62 Although BP Solar expressed an interest in increasing domestic sale figures, the current low level of demand results in high unit costs, which in turn is a deterrent to domestic market growth.

6.63 The Committee held discussions with the designer of the *Solar Sailor* ferry to gain a better understanding of the potential commercial application of renewable energy. The *Solar Sailor* is a wind and solar powered passenger ferry operating on the Sydney harbour. It is a commercial venture which promotes solar technologies and its applications through demonstrating the reliability, efficiency, passenger comfort and environmental benefits of wind and solar energy generation. The technology also has applications in the maritime industry in vessels from 10 to 100 metres length, operating at less than 20 knots.

6.64 The *Solar Sailor* has been awarded a $1 million Renewable Energy Commercialising grant to assist with the launch of the *Solar Sailor* technologies in international markets.[32]

6.65 The Committee also inspected the Olympic Village at Homebush Bay. The Olympic Village is part of one of the world's largest solar powered suburbs and generates over one million kilowatts of power per year. Dwellings include rooftop photovoltaic cells which generate sufficient energy to meet household requirements.

6.66 Given the solar manufacturing expertise in Australia and the demonstration projects which have successfully integrated solar technologies into their design and construction, the lack of domestic market demand was of concern to the Committee.

32 Centre for Strategic Economic Studies (2001), *National Capability Statement on Australia's Environment Industry*, Prepared for Environment Australia, p. 146.

6.67 Cost competitiveness and market awareness appeared key inhibitors to increasing domestic demand. One of the main challenges the renewable energy market faces is 'the huge sunk costs in conventional power generation'.[33] For example, while the cost of coal remains relatively low it is difficult for solar or other renewable energies to achieve comparable costs in order to gain competitive access to the domestic energy market.

6.68 At a public hearing, ITR explained that the cost barrier still exists. While solar energy costs have come down in price, ITR explained that 'what they have not done is come down to a point where they are competitive with other forms of electricity generation in Australia.'[34]

6.69 IEAust commented that Australian support is needed to establish the market viability of the renewable energy industry. IEAust advised that some programs, such as the Renewable Energy Showcase and the Renewable Energy Commercialisation Fund, have been cut. It emphasised that both these programs provided important assistance to renewable industry development.[35]

6.70 The Committee was pleased to note that the 2003-04 Australian Government Budget papers extends the Photovoltaic Rebate Scheme for a further two years, providing funding of $5.8 million for rebates for the installation of photovoltaic systems.

6.71 The decision to extend the photovoltaic rebate scheme was welcomed by BP Solar who commented that Australia has had 'a successful track record in developing solar technology and a manufacturing capability'.[36] However, BP Solar also commented that:

> The next phase of the sector's growth will need industry and government to work together to develop market-based programs that remove dependency from Federal rebate support.[37]

33 Centre for Strategic Economic Studies (2001), *National Capability Statement on Australia's Environment Industry*, Prepared for Environment Australia, p. 160.

34 *Transcript of Evidence*, p. 24.

35 Submission no. 21, p. 4.

36 BP Solar (13 May 2003), Press Release.

37 BP Solar (13 May 2003), Press Release.

6.72 Some States and Territories have already implemented building regulations requiring the use of solar technologies in new commercial buildings, major renovations or new dwellings. Requirements for higher energy efficiency ratings in new dwellings are also increasing the domestic demand for solar technologies.

6.73 The Committee noted that while Australia's renewable technologies (such as solar) have reduced in cost, in most instances they are still not competitive with fossil generated electricity (the exceptions are for remote or specialised sites).

6.74 Nevertheless, the Committee believes that Australia's photovoltaic and solar energy industry is an important one with economic, environmental and employment benefits for the nation. Australian Government programs are assisting in encouraging investment in the renewable energy sector; the next phase of development relies on the continuation of these programs and policies, and the stimulation of domestic markets in order to lower unit costs.

Market Demand for Renewable Energy

6.75 The Committee was interested in a range of marketing initiatives and mechanisms to encourage the uptake of renewable energy in Australia.

6.76 Currently there are a number of renewable energy purchasing schemes for consumers operating across Australia. These schemes enable consumers to purchase a portion of their electricity needs from renewable sources. Several Australian Government departments and agencies have taken a leadership role in purchasing all or part of their electricity requirements through these schemes.

Green Power Disclosure for Consumers

6.77 The term 'Green Power' refers to electricity generated from renewable energy sources, rather than from fossil fuels. In Australia, Green Power schemes:

> … operate as a voluntary system either as a donation, known as contribution based Green Power, or on a consumption

basis, where the householder pays an additional green tariff to have their electricity supplied by green sources.[38]

6.78 Most of the existing and planned Green Power schemes operate under a consumption system. Only Australian Inland Energy (New South Wales) and Integral Energy (New South Wales) use contribution based systems. Contribution-based systems are generally cheaper than consumption-based systems.[39]

6.79 The most significant advantage of Green Power is a reduction of greenhouse gas emissions by displacing the use of fossil fuel systems with renewable energy sources. Green Power schemes provide a simple way for consumers (as households or organisations) to exercise an environmental choice and reduce greenhouse gas emissions.

6.80 In a survey conducted by GreenPower Services Pty Ltd for the Electricity Supply Association of Australia, 60 per cent of electricity customers indicated that they would purchase Green Power if it was available. However, the adoption rate of Green Power amongst utilities with Green Power schemes operating is approximately 1 per cent.

6.81 An ACRE study, titled 'Green Power in Australia', indicates that consumers opt for Green Power because it is 'one of the few convenient ways to support renewable energy and make some contribution to greenhouse gas reduction'.[40] However the take up rate remains disturbingly low.

6.82 The Committee suggests that the combination of higher costs, cumbersome sign-up processes and a lack of market awareness are impeding a greater take up Green Power.

6.83 Certainly across Australia there is considerable variation in the weekly cost of Green Power to consumers. Table 6.3 provides indicative costs for different Green Power schemes. As a point of comparison, the supply charge for conventionally supplied electricity from ACT Electricity and Water (ACTEW) is $2.38 per week.[41]

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38 DEH, www.ea.gov.au, last accessed 14 October 2003.

39 DEH, www.ea.gov.au, last accessed 14 October 2003.

40 Sonneborn, C. and Russell, S. (February 1999), *Green Power in Australia: Occasional paper series*, Australian CRC for Renewable Energy, p. 2.

41 www.actewagl.com.au, last accessed 5 November 2003.

Table 6.3. Comparative Weekly Cost to Consumer of Green Power Schemes

Electricity Retailer	State / Territory	Product Name	Weekly cost for 100% Green Power	Planned generation technologies
Energy Australia	NSW	Pure Energy	$3.80	Photovoltaics Wind, Landfill Gas & Hydro
Great Southern Energy	NSW	Earth saver	$3.00	Photovoltaics, Wind, Landfill Gas & Hydro
Advance Energy	NSW	Green Power	$2.50	Photovoltaics, Wind, & Hydro
North Power	NSW	Ectoplasm	$5.00	Biomass Photovoltaics & Hydro
Australian Inland Energy	NSW	Solar Future	$0.80	Photovoltaics
Integral Energy	NSW	Community Green Power	$0.06	Photovoltaics
CitiPower	Victoria	EcoPower	$2.50	Photovoltaics, Wind, Landfill Gas & Hydro
Powercor	Victoria	Ecosaver	$3.75	Landfill Gas & Hydro
AGL	Victoria	Green Energy	$3.85	Photovoltaics, Wind, Biomass & Landfill Gas
United Energy	Victoria	Untied Energy Green	$3.00	Biomass
Energex	Queensland	Earth's Choice	$2.50	Photovoltaics, Wind, Biomass & Hydro
ACTEW	ACT	New GreenChoice	$4.00	Photovoltaics, Wind, & Hydro

Source GreenPower Services Pty Ltd

6.84 In Australia, Green Power schemes operate as a voluntary system either as a donation, known as contribution based Green Power, or on a consumption basis, where the householder pays an additional green tariff to have their electricity supplied by green sources. Most of the existing and planned Green Power schemes operate under a consumption system, with only Australian Inland Energy and Integral Energy operating contribution based systems. Contribution based systems are considerably cheaper than consumption bases systems, and in these systems the contribution is used to build additional green power systems, such as a photovoltaics or wind farm.[42]

42 www.acre.murdoch.edu.au/ago, last accessed 5 November 2003.

6.85 The uptake of Green Power was considered in the REAA which concluded that, over the last decade in Australia, the awareness and interest in Green Power has reached a reasonable level. However, the REAA also commented that:

> … the challenge remains to convert much more of that into sales, with scope for retailers to design new imaginative Green Power products and differentiate them from others.[43]

6.86 It would seem that this challenge is yet to be met. However, a recent poll commissioned by Greenpeace indicated that '83 per cent of people would be willing to pay the extra money if it meant 10 per cent of Australia's electricity came from new renewable sources by 2010'.[44]

6.87 If there appears to be consumer willingness to purchase Green Power products but current initiatives are not able to harness this commitment, then the Committee suggests that further initiatives are required to inform consumers and encourage more environmentally conscious energy purchase decisions.

6.88 The Committee acknowledges that there have been a number of consumer and community awareness raising initiatives which have successfully demonstrated the applications and benefits of renewable energy.

6.89 The Australian and New Zealand Solar Energy Society and the Alternative Technology Association held a 'solar house day' in September 2002, in collaboration with the AGO. The event showcased passive solar design principals and the domestic installation of photovoltaic systems and solar hot water. A major advertising campaign in national print, radio and television media accompanied the event.

6.90 The Committee is fully supportive of the range of showcasing events and programs that are taking place. However, despite the profile of these events, there remains a low uptake of Green Power and renewable energy.

6.91 The Committee considers that further, more direct measures are needed to 'mobilise' consumer commitment and stimulate domestic market demand.

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43 Sonneborn, C. and Russell, S. (February 1999), *Green Power in Australia: Occasional paper series*, ACRE, p. 2.

44 Greenpeace (11 June 2003), *Poll finds people willing to pay extra for renewables.* Press clipping.

6.92 A 1999 ACRE report outlines a number of factors which may increase the uptake of Green Power schemes in Australia. These factors include:

- Giving continuing feedback to reinforce customers' choice of Green Power;
- Presenting tangible benefits to customers and visible installations;
- Maintaining a sustained promotion effort;
- Providing customer education about the production of electricity, about renewable energy, and about the way Green Power schemes might stimulate renewable energy; and
- Making participation in a Green Power scheme by customers both convenient and easy to understand.[45]

6.93 The Committee strongly agrees with these comments. Given that these factors were identified in a 1999 report, the Committee urges effective action be taken to implement them. The Committee sees particular scope for enhancing consumer awareness by providing greater disclosure of energy sources on electricity bills and including education material with billing information.

6.94 The Committee noted that recommendation 6 of the REAA encourages energy retailers to provide environmental information at relevant purchasing points. To date, some States, such as Victoria, have taken the step of requiring all retailers to disclose information regarding the greenhouse gas emissions associated with each customer's electricity use.[46]

6.95 As of July 2003, the Australian Capital Territory also requires all electricity bills to include details of the greenhouse gases produced for the electricity consumed.[47]

6.96 The Committee commends the work of State and Territory governments who have taken a lead in the disclosure to consumers of greenhouse gas emissions associated with energy generation.

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45 Sonneborn, C., Russell, S. (February 1999), *Green Power in Australia: Occasional paper series*, ACRE, p. 3.

46 ISR (2002), *Renewable Energy Action Agenda: New Era New Energy Implementation Report*, p. 13.

47 The Canberra Times (19 June 2003), *Green House: territory takes on world-first emissions plan,* p. 5.

6.97 The CEO group responsible for implementation of the REAA indicated that they believe the renewable energy industry should be supported by:

> Encouraging energy retailers to provide environmental information, including greenhouse gas emissions of energy sources, so consumers can make informed choices on energy purchase options.[48]

6.98 The Committee supports the initiative that electricity retailers should be required to provide a disclosure statement on every electricity account as a way of improving transparency and educating consumers.

6.99 Given that market differentiation is a driver of sustainability, the Committee applies to electricity retailers the same logic applied to ecolabelling for consumer products – establishing disclosure frameworks enables informed purchase and consumption decisions and assists in placing a market value on environmental outcomes. Informed consumers and clear product differentiation in the consumer energy market place can assist in driving sustainability through a more widespread uptake of Green Power schemes.

6.100 The Committee recommends that electricity accounts clearly disclose:

- The total amount of Green Power being purchased or generated by the electricity supplier;
- The percentage breakdown of each type of renewable energy (for example solar, wind or hydro) and conventional energy sources generating the electricity supplied;
- Information clearly highlighting the savings on greenhouse gas emissions as a result of the electricity suppliers purchasing of Green Power; and
- Advice on how a consumer can increase their uptake of renewable energy.

48 ISR (2001), *Renewable Energy Action Agenda: New Era New Energy Implementation Report*, p. 9.

Recommendation 11

The Committee recommends that the Australian Government through the Mandatory Renewable Energy Target pursues the mandatory disclosure for all electricity retailers of:

- **Relative sources of supplied energy;**
- **Associated greenhouse gas emissions; and**
- **Advice on how consumers can increase their purchase of Green Power.**

Green Power for Australian Government Departments and Agencies

6.101 Up to ten Australian Government departments and agencies now purchase a proportion of their energy needs from Green Power schemes. This includes the Department of Defence, which is the largest energy user amongst Australian Government departments and agencies. As the lead department in environmental issues, DEH purchases 100 per cent Green Power.

6.102 A report on energy use in Australian Government operations found that the consumption of Green Power by Australian Government departments and agencies had increased markedly in recent years, growing from zero use in 1997-1998 to 34 539 GJ in 2000-2001.[49]

6.103 The overall use of Green Power in Australian Government operations remains low, estimated at less than one per cent in 2000-2001. Total electricity use is around 64 per cent of energy consumption, (when defence operational fuels are excluded).[50] Although use of Green Power remains low and certainly provides for a great deal of improvement, the Committee noted that there was zero usage only five years ago. It is expected that the next five years will see far greater use of Green Power.

49 ITR (2000-01), *Energy Use in Commonwealth Operations*.

50 ISR (2001), *Renewable Energy Action Agenda: New Era New Energy Implementation Report*, p. 20.

6.104 The Committee commends the DEH, which purchases 100 per cent Green Power, and supports the concept of a minimum purchasing agreement for Australian Government departments and agencies. However, the Committee is concerned that, under the current agreement, some agencies may purchase little or even no Green Power.

6.105 The Committee takes seriously the need for the Australian Government to demonstrate its active commitment to ESD principles. Community expectations are for greater environmental accountability from industry and these expectations are driving improved environmental performance from a number of businesses. Similarly, the Australian Government should demonstrate improved environmental accountability.

6.106 One means of fulfilling the commitment to ESD principles is to mandate a minimum usage of Green Power in all Australian Government departments and agencies. This also has the effect of increasing the market share of renewable energy, assisting the industry to address challenges in economies of scale which is currently keeping unit costs high.

6.107 The Committee suggests that all Commonwealth agencies should purchase a minimum percentage of Green Power. This percentage should be increased in the future in order to support the renewable energy industry, reduce greenhouse gas emissions and set a leading example for a sustainable Australia. A target of five per cent appears realistic and achievable, given current renewable energy supply and demand, market trends and forecasts.

Recommendation 12

The Committee recommends that:

- **It be made mandatory for all Australian Government departments and agencies to purchase, where available, a minimum of 5 per cent Green Power by 2005; and**
- **This minimum is increased to 10 per cent Green Power by 2007.**