

Right on Target?

Australia's Mandatory Renewable Energy Target

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1. INTRODUCTION

Australia is blessed with energy resources. This abundance extends beyond petroleum, natural gas, coal and uranium¹ to renewable energy resources. The majority of Australia receives 1600kWh per square metre per year of solar radiation, with some areas receiving up to 2500kWh per square metre per year.² This amounts to only 10% less solar radiation than that received by the most solar radiation rich place on earth, the Sahara Desert.³ The potential to exploit wind energy is similarly high in Australia. Indeed, the wind in the southwest corner of the State of Western Australia is said to have the potential to generate Australia's electricity consumption 45 times over.⁴ A new renewable energy "prospect" in Australia, known as "hot dry rock" energy, also holds great promise for Australia.⁵ This technology involves pumping water into the earth where it is superheated by hot granite rocks, with the heat extracted at the surface to create electricity.⁶ Australia's hot dry rock resources are so plentiful that, if fully exploited, they possess the potential to sustain the country's electricity generation for hundreds if not thousands of years.⁷

The challenge for Australia lies, therefore, not with supply but with taking advantage of this supply.⁸ On a per capita basis, Australia remains the world's biggest greenhouse gas (GHG)

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¹ Australia is one of the world's largest exporters of coal, liquefied natural gas and uranium (Australian Bureau of Agricultural and Resource Economics, *Energy in Australia 2005* (Canberra: Commonwealth of Australia, 2005) 1, available at: <http://www.industry.gov.au/assets/documents/itrinternet/Energy200520051220110927.pdf>).

² R. Lyster and A. Bradbrook, *Energy Law and the Environment* (Melbourne: Cambridge University Press, 2006), 16.

³ *Ibid*, 16.

⁴ A Helps, *Legal Impediments to the Use of Renewable Energy in Western Australia* (UWA, Honours Thesis, 1997) referring to G Gilchrist, *The Big Switch – Clean Energy for the Twenty First Century* (St. Leonards: Allen & Unwin, 1994) 157.

⁵ *Above n 1*, 65.

⁶ For a discussion of this new technology, see: Australia National University, *Hot Rock Energy* (undated), available at: <http://hotrock.anu.edu.au/>; Australian Greenhouse Office, *Hot Dry Rock Geothermal Reservoir Development* (undated), available at:

<http://www.greenhouse.gov.au/renewable/recp/hotdryrock/pubs/hotdryrock2.pdf#search=%22hot%20dry%20rocks%20energy%20research%20development%20corporation%22>.

⁷ This research, conducted in 1994 by the Australian Government's Energy Research and Development Corporation, is referred to in: Australian Greenhouse Office, *ibid*; and, Radio National Earthbeat Transcripts, *Hot Dry Rock Geothermal Energy* (30 Sept, 19/99), available at: <http://www.abc.net.au/rn/science/earth/stories/s18546.htm>.

⁸ In relation to solar energy, Lyster and Bradbrook quote W Ewers as saying: "Since the sun's rays are diffuse,

emitter, with emissions six times as high as China's.¹ This is largely a consequence of relying heavily on coal and oil to meet escalating energy needs, a situation which is predicted to continue into the future.² The Australian Bureau of Agriculture and Resource Economics (ABARE) projects a 63 percent increase in Australia's primary energy consumption by 2029-30,³ with 95 percent of that consumption fueled by coal, oil and natural gas.⁴

In April 2001, the Australian Government adopted the world's first legislated national renewable energy market, known as the Mandatory Renewable Energy Target (MRET) scheme. The MRET scheme focuses on the electricity sector, which is responsible for approximately one-third of Australia's total GHG emissions, with a view to increasing the market penetration of renewable energy in this sector. This paper examines the MRET scheme, with a view to identifying both its strengths and weaknesses, in order to contribute to the discussion on how regulatory regimes can be utilized to accelerate clean energy utilization and development in China.

2. RENEWABLE ENERGY GENERATION IN AUSTRALIA

At present, the vast majority of renewable energy production in Australia is from hydroelectricity, wood and woodwaste and bagasse (a waste product from sugar refining).⁵ Indeed, these renewable energy fuels together accounted for 95 percent of renewable energy production in 2003-04, with the remainder coming from biofuels (which include landfill and sewage gas) and solar energy.⁶ With limited capacity to expand hydroelectricity generation, growth in the renewables sector through to the year 2030 is expected to come mainly from wind and biomass (predominantly bagasse and woodwaste).⁷

Underpinned by the MRET scheme, ABARE projects the overall generation of electricity from all renewable sources to grow by 2.4 percent a year to 2030.⁸ It predicts most of this growth will come from wind power, although wind power is starting from a "very small base".⁹

utilizing solar energy [is] like trying to harness 100 million fleas and then teaching them all to jump in the same direction at the same time (above n 2, 16).

¹ Climate Action Network of Australia, *How High Are Australia's Emissions?* (available at <http://www.cana.net.au/>).

² Above n 1, 52.

³ Muhammad Akmal and Damien Riwoe, *Australian Energy: National and State Projections to 2029-30* (Canberra, ABARE, October 2005) 2.

⁴ Above n 1, 57.

⁵ Ibid, 63.

⁶ Ibid. In 2003-04, approximately 2/3 of solar energy was used for residential water heating, amounting to "less than 1 percent of final energy consumption".

⁷ ABARE estimates that hydroelectricity generation will grow by only 0.5 percent a year, reaching around 18 TWh by 2029-30, reflecting the "limited availability of suitable locations for the expansion of large grid based hydroelectricity generation" (ibid, 63-64).

⁸ Ibid, 64.

⁹ In 2004-05 wind produced 1529 GWh of energy, with forecasts that it will produce 7875 GWh by 2029-30 (ibid).

AUSTRALIAN ELECTRICITY GENERATION, BY FUEL

	Generation				Annual Average Growth	
	2003-04	2009-10	2019-20	2029-30	2003-04 to	2003-04 to
	TWh	TWh	TWh	TWh	2009-10	2009-10
					%	%
Black Coal	130.0	142.4	177.8	210.3	1.5	1.9
Brown Coal	51.8	55.2	62.7	71.1	1.1	1.2
Oil	3.1	3.1	3.7	4.2	0.2	1.2
Natural Gas	33.8	43.6	61.5	89.1	4.4	3.8
Renewables	18.5	23.6	28.0	34.5	4.1	2.4
Hydro	16.1	17.0	17.2	18.0	0.9	0.4
Biomass	.9	1.5	3.1	6.4	8.9	7.9
Biogas	.4	1.3	1.6	2.2	23.0	6.9
Wind	1.1	3.8	6.0	7.9	22.7	7.9
Total	237.1	268.0	333.7	409.2	2.1	2.1

Source: ABARE, Australian Energy: National and State Projections to 2029-30.

3. THE MANDATORY RENEWABLE ENERGY TARGET

3.1 Overview

In the lead up to the Kyoto Climate Change Summit in 1997, the Australian Prime Minister, John Howard, announced a suite of national greenhouse abatement measures, which included the MRET.¹ The Prime Minister described the MRET initiative as follows:²

Targets will be set for the inclusion of renewable energy in electricity generation by the year 2010. Electricity retailers and other large electricity buyers will be legally required to source an additional 2 percent of their electricity from renewable or specified waste-product energy sources by 2010 (including through direct investment in alternative renewable energy sources such

¹ The Hon. John Howard MP, *Safeguarding the Future: Australia's Response to Climate Change* (Canberra: AGPS, 1997).

² Ibid.

as solar hot water heaters). This will accelerate the uptake of renewable energy in gridbased power applications, and provide an ongoing base for commercially competitive renewable energy. The program will also contribute to the development of internationally competitive industries which could participate effectively in the burgeoning Asian energy market.

When the MRET was announced, approximately 16000 GWh of electricity was generated by the renewable energy sector in Australia, which equated to around 10.5 percent of the market.¹

Four years later, the Renewable Energy (Electricity) Act 2000 (Cth) was passed to establish the MRET. The Act applies from 1 January 2001 through to 1 December 31, 2020.²

The objects of the Act are:³

- (a) to encourage the additional generation of electricity from renewable sources; and
- (b) to reduce emissions of greenhouse gases; and
- (c) to ensure that renewable energy sources are ecologically sustainable.

To achieve this, the Act provides for the creation of renewable energy certificates (RECs) from 'eligible renewable energy sources' and requires 'liable entities' to surrender a targeted number of RECs for the electricity that they acquire during the year or pay a 'renewable energy shortfall charge'.⁴ This, in turn, creates a market for RECs, the purchase of which subsidises the activities of the renewable energy sector.

3.2 The Target

The mandatory renewable energy target set by Renewable Energy (Electricity) Act 2000 (Cth) is expressed as a fixed Gigawatt hour (GWh) target of 9500 GWh by the year 2010 through to 2020.⁵ In order to ensure consistent progress towards this target by 2010, and spread investment in the renewable energy sector over several years,⁶ the Act phases in the target. It does this by setting interim annual targets for the calendar years 2001 through to 2020. The targets increase incrementally from 2001 through to 2010, at which point the 9500 GWh annual target applies through to 2020, when the MRET ends.⁷

Required GWh of Renewable Source Electricity

Year	GWh
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¹ MRET Review Panel, *Renewable Opportunities: A Review of the Operation of the Renewable Energy (Electricity) Act 2000* (Canberra: Australian Greenhouse Office, 2003) 11 (Tambling Report).

² Renewable Energy (Electricity) Act 2000 (Cth), s 4.

³ Renewable Energy (Electricity) Act 2000 (Cth), s 3.

⁴ Renewable Energy (Electricity) Act 2000 (Cth), s 3.

⁵ Renewable Energy (Electricity) Act 2000 (Cth), s 40.

⁶ Office of the Renewable Energy Regulator, *Fact Sheet: Mandatory Renewable Energy Target Overview, 2*, available at: <http://www.orer.gov.au/publications/mret-overview.html>.

⁷ Renewable Energy (Electricity) Act 2000 (Cth), s 40.

2001	300
2002	1110
2003	1800
2004	2600
2005	3400
2006	4500
2007	5600
2008	6800
2009	8100
2010 and later years	9500

3.3. *Renewable Energy Certificates (RECs)*

RECs are a form of electronic currency, each representing one megawatt hour (MWh) of renewable energy generation.¹ There are two sources eligible to create RECs: power stations generating electricity from eligible renewable energy sources; and, deemed output systems.

3.3.1 Eligible Sources: Power Stations Generating Electricity from Eligible Renewable Energy Sources

First, and most significantly, new and pre-existing power stations generating all or some of their power from ‘eligible renewable energy sources’ can apply for accreditation to create certificates.² For the purposes of the Act, the following energy sources are eligible renewable energy sources:³

- (a) hydro;
- (b) wave;
- (c) tide;
- (d) ocean;
- (e) wind;
- (f) solar;
- (g) geothermal-aquifer;

¹ Renewable Energy (Electricity) Act 2000 (Cth), s 18.

² Renewable Energy (Electricity) Act 2000 (Cth), ss 13 and 14. These power stations must also satisfy any other prescribed requirements (Renewable Energy (Electricity) Act 2000 (Cth), s 14(2)).

³ Renewable Energy (Electricity) Act 2000 (Cth), s 17(1). The Regulations contain special requirements which apply to wood waste (reg 8), energy crops (reg 9) and ocean, wave and tide (reg 10).

- (h) hot dry rock;
- (i) energy crops;
- (j) wood waste;
- (k) agricultural waste;
- (l) waste from processing of agricultural products;
- (m) food waste;
- (n) food processing waste;
- (o) bagasse;
- (p) black liquor;
- (q) biomass-based components of municipal solid waste;
- (r) landfill gas;
- (s) sewage gas and biomass-based components of sewage;
- (t) any other energy source prescribed by the regulations.

Fossil fuels and materials or waste derived from fossil fuels are specifically excluded from the list of eligible renewable energy sources.¹

To become an accredited renewable energy power station, the power station must:

- generate some or all of its energy from an eligible renewable energy source;²
- operate in compliance with any relevant Commonwealth, State, Territory or local government planning and approval requirements³
- be ecologically sustainable⁴;
- use the eligible renewable energy source to generate electricity⁵;

¹ Renewable Energy (Electricity) Act 2000 (Cth), s 16(2). The regulations further clarify ineligible energy sources, specifically excluding: coal seam methane, waste coal mine gas and other products derived from coal or natural gas, waste heat from cogeneration if the waste heat is not used for electricity generation or the primary fuel source is not an eligible renewable energy source; electricity generated from cogeneration using fossil fuels; radioactive materials; any component of co-firing or wastes that is not bioenergy; or, any other fossil fuels or waste products derived from fossil fuels (Renewable Energy (Electricity) Regulations 2001 (Cth), reg 12)).

² Renewable Energy (Electricity) Act 2000 (Cth), s 14(2)(a).

³ Renewable Energy (Electricity) Regulations 2001 (Cth), regs 4(1)(c), 7(1) and 7(2)(a).

⁴ Renewable Energy (Electricity) Regulations 2001 (Cth), reg 7(2)(b). The term ecologically sustainable is defined in section 5 of the Act to mean an action that is consistent with the following principles: integration of economic, environmental, social, and equitable concerns in the decision making process; precautionary principle; principle of inter-generational equity; conservation of biological diversity and ecological integrity; and, promotion of improved valuation, pricing and incentive mechanisms.

⁵ Renewable Energy (Electricity) Regulations 2001 (Cth), reg 7(3).

use the electricity generated to directly meet demand for electrical energy¹; and
use metering which enables the Regulator to determine the amount of electricity being generated.²

If eligible for accreditation, the power station will be assigned a ‘1997 eligible renewable power baseline’.³ The power station is then eligible to create one REC for each MWh of renewable electricity it generates in excess of its 1997 eligible renewable power baseline during the year.⁴

3.3.2 Eligible Sources: “Deemed Output Systems”

Solar water heaters⁵ and small generation units⁶ that displace non-renewable electricity are also eligible to create RECs. These sources are sometimes referred to “deemed output systems”⁷ because the number of RECs they are eligible to create is deemed by the legislation rather than directly measured.

Solar water heaters are eligible to generate RECS on a one off basis.⁸ The number of certificates any given solar water heater creates is deemed by the regulations based on location and the specific brand and model of the solar water heater.⁹

Small generation units are those whose energy source is hydro, wind or solar generation. A device with the energy source of hydro or wind is considered a small generation unit if it has a maximum kilowatt (kW) rating of 6.4 kW or 10 kW respectively and generates no more than 25 MWh of electricity each year.¹⁰ A device whose energy source is solar is a small generation unit

¹ Renewable Energy (Electricity) Regulations 2001 (Cth), reg 7(4).

² Renewable Energy (Electricity) Regulations 2001 (Cth), reg 4(1)(a) and (b).

³ Renewable Energy (Electricity) Act 2000 (Cth), s 14(3)(a). This baseline is established in accordance with Schedule 3 of the Renewable Energy (Electricity) Regulations 2001 (Cth). Very generally, the baselines are determined as follows: the baseline for a power station which generates power for the first time after 1 January 1997 is nil; the default baseline for a pre-existing power station is the average of the annual electricity generated from eligible renewable energy sources in 1994, 1995 and 1996 although an application may be made to determine the baseline in a different manner if the default baseline would not properly represent 1997 levels of generation or would otherwise result in some unfairness or hardship. The baseline for 2001 is then $\frac{3}{4}$ of the baseline worked out for that power station.

⁴ Renewable Energy (Electricity) Act 2000 (Cth), s 18. The regulations provide a formula to calculate eligible electricity generation (Renewable Energy (Electricity) Regulations 2001 (Cth), Subdivision 2.3.1). Recent amendments to the Act allow a person to apply the Regulator for provisional accreditation of the proposed components of an electricity generation system (Renewable Energy (Electricity) Act 2000 (Cth), Part 2, Division 2A). Provisional accreditation specifies that the proposed system will be eligible for accreditation if an application is properly made and is not materially different for the system described in the provisional application (s 12B). This provision is designed to assist proposed renewable power projects to secure financing.

⁵ Renewable Energy (Electricity) Act 2000 (Cth), Part 2, Division 4, Subdivision B.

⁶ Renewable Energy (Electricity) Act 2000 (Cth), Part 2, Division 4, Subdivision BA.

⁷ This term is not used in the Act but is used by the Office of Renewable Energy Regulator (see above n 25, 3).

⁸ Renewable Energy (Electricity) Act 2000 (Cth), Part 2, Division 4, Subdivision B.

⁹ Renewable Energy (Electricity) Act 2000 (Cth), s 22, Renewable Energy (Electricity) Regulations 2001 (Cth), regs 19, 20(4) and Schedule 7.

¹⁰ Renewable Energy (Electricity) Regulations 2001 (Cth), reg 3(2)(a) and (b).

if it has a maximum kW rating of 100 kW generates no more than 250 MWh of electricity each year.¹ If the unit in question exceeds the specified kW rating threshold, it will only be eligible to create RECs if accredited as a power station. The number of RECs created by the installation of a small generation unit is determined by the size of the unit and the number of hours it is deemed to generate electricity, rather than the actual renewable electricity the unit generates.²

Owners of deemed output units may create the available RECs themselves or may assign the right to create the certificate to another person, or ‘agent’.³ This allows suppliers of solar water heaters or other small generation units, acting as agents, to offer a discount on the product in return for any assigned RECs the system generates, defraying the upfront purchase costs associated with solar water heaters and small generation units.

3.3.3 Creating Renewable Energy Certificates

A person seeking to create a REC must be registered. A registered person is assigned an account with the REC registry, together with a username and password.⁴ The registered person can then submit an electronic request to create an REC.⁵ To preserve the integrity of the system, each REC must contain its own unique identification code,⁶ the electronic signature of the person who created it, the date on which the electricity to which the certificate relates was generated and the date on which the certificate was created.⁷ The REC must be registered by the Renewable Energy Regulator before it is considered valid. Before registration occurs, the REC-registry performs some automatic checks with the Office of the Renewable Energy Regulator then carrying out manual checks of the REC creation information.⁸ Once satisfied as to the validity of creating the REC, the Regulator will validate it and create an entry in the register.⁹ Whether it occurs accidentally or intentionally, it is an offence for any person who is not entitled to do so to create a

¹ Renewable Energy (Electricity) Regulations 2001 (Cth), reg 3(2)(c).

² Renewable Energy (Electricity) Regulations 2001 (Cth), reg 20.

³ Renewable Energy (Electricity) Act 2000 (Cth), ss 23 and 23C.

⁴ The online REC Registry is available at: <https://www.rec-registry.gov.au/>. There are four publicly available registers: Register of Renewable Energy Certificates; Register of Accredited Power Stations; Register of Applications for Accredited Power Stations; and, Register of Registered Persons.

⁵ Renewable Energy (Electricity) Act 2000 (Cth), s 25(a).

⁶ As specified in the Renewable Energy (Electricity) Act 2000 (Cth, s 25(3)), the REC’s unique identification code is created by stating, in order, the following:

- the registration number of the person who created the REC;
- the accreditation code of the power station, solar water heater installation or small generation unit installation;
- the year; and
- a number, in an unbroken sequence, which represents the eligible megawatt hours of electricity generated or displaced.

⁷ Renewable Energy (Electricity) Act 2000 (Cth), s 25(b).

⁸ Office of Renewable Energy Regulator, *Renewable Energy Certificates (RECs): What are Renewable Energy Certificates?* available at: <http://www.orer.gov.au/recs/index.html>.

⁹ Renewable Energy (Electricity) Act 2000 (Cth), s 26.

certificate.¹

Once registered, the RECs may be transferred to any person² and remain valid until surrendered to discharge a liability and demonstrate compliance with the MRET.³ The Office of the Renewable Energy Regulator retains the power, however, to conduct physical audits of registered persons to determine whether the RECs have been created in accordance with the provisions of the Act.⁴

3.4 *Liable Entities*

The Act requires ‘liable entities’ to support the generation of renewable electricity and meet the renewable energy targets by purchasing increasing amounts of RECs.⁵

3.4.1 Who are Liable Entities?

A liable entity is any person who, during a year, makes a ‘relevant acquisition’ of electricity.⁶ The Act contemplates two types of ‘relevant acquisitions’ of electricity: wholesale acquisitions; and, notional wholesale acquisitions.⁷ While these provisions are relatively complex, essentially they capture “all wholesale acquisitions of electricity (relevant acquisitions) on grids with an installed capacity of 100 megawatts (MW) or more”.⁸ A grid is “a network of transmission and/or distribution lines that connects a generator to an end-user”.⁹ As a result, the MRET scheme covers all grids with an installed capacity above 100 MW, including those in regional Australia.

3.4.2 Liable Entities’ Required Renewable Energy Liability

In each year of the scheme, each liable entity has a ‘required renewable energy’ liability.

¹ Renewable Energy (Electricity) Act 2000 (Cth), s 24. The Act contains both a strict liability and general offence provision, with penalties of 1 and 5 penalty units respectively for each certificate wrongly created.

² Renewable Energy (Electricity) Act 2000 (Cth), s 27.

³ Renewable Energy (Electricity) Act 2000 (Cth), s 29 and s 44.

⁴ Renewable Energy (Electricity) Act 2000 (Cth), Part 11.

⁵ Office of the Renewable Energy Regulator, *Liable Parties*, available at: <http://www.orer.gov.au/publications/determining-liabilities.html>.

⁶ Renewable Energy (Electricity) Act 2000 (Cth), s 35.

⁷ Renewable Energy (Electricity) Act 2000 (Cth), ss 31 – 34.

⁸ Office of the Renewable Energy Regulator, *Determining Liable Grids, Liable Purchases of Electricity and REC Liabilities, and Discharging Liabilities: Fact sheet* (Version 1 as Updated in March 2006), available at:

<http://www.orer.gov.au/publications/determining-liabilities.html>. See also: Renewable Energy (Electricity) Act 2000 (Cth), s 31.

⁹ Office of the Renewable Energy Regulator, *ibid*.

This liability is determined by reference to the renewable power percentage (RPP). The RPP is a percentage specified in the Regulations on or before 31 March in the year in which it applies.¹ Before the Governor-General makes a regulation specifying the RPP, the Minister must take into consideration:²

the required GWh of renewable source electricity for the year; and

the amount estimated as the amount of electricity that will be acquired under relevant acquisitions during the year; and

the amount by which the required GWhs of renewable source electricity for all previous years has exceeded, or has been exceeded by, the amount of renewable source electricity required under the scheme in those years.

If the regulations do not specify the RPP for the year, the Act contains a default formula by which to calculate the RPP.³

A liable entity's 'required renewable energy' liability for the year is determined by multiplying the total electricity acquired by the liable entity under relevant acquisitions by the RPP.⁴ For example, the 2006 RPP is 2.17%. A liable entity purchasing 100,000 MWh of electricity in 2006 would therefore be required to surrender 2,170 RECs to discharge its liability for the year.

If a liable party does not discharge its liability by surrendering the appropriate number of RECs, it must pay a renewable energy shortfall charge of \$40 for each REC it falls below its renewable energy liability.⁵ No renewable energy shortfall is payable if the shortfall for the year is less than 10% of the liable entity's required renewable energy penalty for the year.⁶ This shortfall is, however, carried forward. If liable entity has a renewable energy surplus for the year, this surplus is carried forward. Liable entities can surrender RECs to redeem any outstanding

¹ Renewable Energy (Electricity) Act 2000 (Cth), s 39(1). The Act requires that the RPP be set by the end of March each year in order to allow liable entities to plan for the acquisition of RECs during the year (above, n 58). To date, the RPPs have been set as follows: (a) for 2001 - 0.24%; (b) for 2002 - 0.62%; (c) for 2003 - 0.88%; (d) for 2004 - 1.25%; (e) for 2005 - 1.64%; and (f) for 2006 - 2.17% (Renewable Energy (Electricity) Regulations 2001, reg 23).

² Renewable Energy (Electricity) Act 2000 (Cth), s 39 (3).

³ Renewable Energy (Electricity) Act 2000 (Cth), s 39 (2).

⁴ Renewable Energy (Electricity) Act 2000 (Cth), s 38.

⁵ Renewable Energy (Electricity) Act 2000 (Cth), ss 35 - 38 and Renewable Energy (Electricity) (Charge) Act 2000 (Cth), s 6(1). Penalties are levied for failing to pay the renewable energy shortfall payment (Renewable Energy (Electricity) Act 2000 (Cth), ss 70 and 99).

⁶ Renewable Energy (Electricity) Act 2000 (Cth), s 36 (2).

shortfalls for the three preceding years.

A liable entity can only surrender valid RECs created before the end of the year to which the energy acquisition relates and for which the liable entity is the registered owner.¹ This forces liable entities wishing to avoid the renewable energy shortfall charge into the market to purchase certificates from eligible sources which have created registered RECs or from other liable entities in possession of excess RECs. The transfer of RECs occurs through the online REC registry, where details of ownership are publicly accessible.²

3.4.3 Liable Entities' Energy Acquisition and Renewable Energy Shortfall Statements

A liable entity who acquired electricity under a relevant acquisition during a year must lodge an energy acquisition statement for the year between 1 January and 14 February in the following year.³ The statement must specify the amount of electricity acquired under relevant acquisitions during the year, the number of RECs being surrendered for that year as well as any surplus or shortfall which is being carried forward.⁴

A liable entity that has a renewable energy certificates shortfall for a year must also lodge a renewable energy shortfall statement.⁵ This information places the Regulator in a position to assess the liable entity's liability in relation to any renewable energy shortfall.⁶

4. STRENGTHS AND WEAKNESSES OF THE MRET SCHEME

4.1 *Strengths of the MRET Scheme*

To date, the MRET scheme has made a significant contribution to the additional generation of energy from renewable sources. As of the end of 2005, 228 power stations generating electricity from a diverse range of renewable energy sources were accredited under the Act. A total of 15,749,644 RECs, representing 15,749,644 MWhs of eligible renewable electricity, have

¹ Renewable Energy (Electricity) Act 2000 (Cth), s 45.

² Renewable Energy (Electricity) Act 2000 (Cth), s 136.

³ Renewable Energy (Electricity) Act 2000 (Cth), s 44.

⁴ Renewable Energy (Electricity) Act 2000 (Cth), s 44(2).

⁵ Renewable Energy (Electricity) Act 2000 (Cth), s 46.

⁶ Renewable Energy (Electricity) Act 2000 (Cth), ss 47 and 48. An assessment can be amended at any time in any way the Regulator thinks necessary, whether or not the renewable energy shortfall charge has been paid (s 49). The Act provides for objections, reviews and appeals in relation to any alterations or amendments to the assessment made by the Regulator (ss 54 – 65).

been created.¹ Pre-existing power stations have undertaken upgrades to create RECs, resulting in major efficiency improvements.² The wind industry serves as a particularly powerful example of the MRET scheme's success. Before the introduction of the MRET scheme, Australia had a total wind energy capacity of 10.3 MW. Since its introduction, that number has grown by 697.9 MW and now totals 708 MW,³ with a further 5150 MW of capacity at various stages of development process.⁴

The MRET has been a "significant driver" in this renewable energy expansion, with Western Power suggesting in 2003 that "most, if not all, of the renewable energy activity on main grids over the past two years and planned for the future, is a direct result of the Act".⁵

4.2 Weaknesses of the MRET

4.2.1 The Target and Duration of the Scheme

Perhaps the greatest weakness of the MRET scheme is the modest target set by the Act. As noted above, when the target was first announced, the Prime Minister stated that "[e]lectricity retailers and other large electricity buyers will be legally required to source an additional 2 percent of their electricity from renewable or specified waste-product energy sources by 2010".⁶ This suggests an increase in the market share of renewable energy generation as a percentage, specifically an increase in market share of 2 percent.⁷

¹ Office of the Renewable Energy Regulator, *Increasing Australia's Renewable Electricity Generation: Annual Report 2005* (Canberra: 2006) 9 and 12. Available at: <http://www.orer.gov.au/publications/annual-report/2005-administrative/pubs/orer-2005.pdf>. The requisite manufacturing facilities have also grown to support this increase in capacity, creating hundreds of jobs in regional Australia.

² According to the Renewable Energy Generators of Australia (REGA), in response to the MRET approximately \$200 million has been spent or committed on upgrading older power stations with a further approximately \$500 million identified for future investment. Major hydro businesses have also maximised water collection and utilisation to deliver more renewable energy (Renewable Energy Generators of Australia (REGA), *Submission to the Senate Environment, Communications, Information, Technology and the Arts Committee Inquiry into the Provisions of the Renewable Energy (Electricity) Amendment Bill 2006* (19 April, 2006), 1).

³ Australian Wind Energy Association (AusWind), *Submission to the Senate Environment, Communications, Information, Technology and the Arts Committee Inquiry into the Provisions of the Renewable Energy (Electricity) Amendment Bill 2006* (19 April, 2006), 1.

⁴ This number includes projects still in the feasibility study stage through to those which have the requisite governmental approval and are now out for tender (ibid).

⁵ Western Power, *Sustainable Energy Branch, Submission 70 to the Review of the Operations of the Renewable Energy (Electricity) Act, 2003*, 1.

⁶ See above n 18.

⁷ Parliament of Australia Senate Standing Committee on Environment, Communications, Information, Technology and the Arts, *Minority Report from Labor Senators on the Renewable Energy (Electricity) Amendment Bill 2006*. See also: Renewable Energy (Electricity) Bill 2006, Second Reading Speech, Anthony Albanese PM, Shadow Minister for the Environment and Heritage (20 June 2006).

However, the Renewable Energy (Electricity) Act 2000 (Cth) is not designed to achieve a 2 percent increase. Rather, the Act sets a fixed target of 9500 GWh, creating what some call “a dead target”.¹ This is because Australia’s overall energy demands continue to grow, such that an additional 9500 GWh of electricity from renewable energy sources by 2010 will not increase the renewable sector’s market share, it will simply allow it to retain the position it held when the scheme first commenced, 10.5 percent.² Indeed, a report prepared in June 2006 found that “although the installed capacity of renewables has grown, the actual percentage of electricity generated through renewables has been progressively falling over recent years, from around 11.5% in 1998 to 8% today”.³

These figures are not a reflection that the MRET under-achieving on its interim targets, indeed the opposite is true. In December, 2005, the Australian Business Council for Sustainable Energy (BCSE) released a four year assessment of the MRET scheme which showed that “only an additional 150 MW of grid-connected renewable projects are required to meet the target to 2020”.⁴ In essence, the modest target set by the MRET for 2010 through to 2020 has been almost fully satisfied within the first four years. Another recent report states that “it is likely that sufficient investment in new renewable capacity will have been made by around 2007 or 2008 to meet the cumulative target to 2020”.⁵

Unfortunately, this early achievement of the 9500 MWh fixed target may have negative rather than positive implications for the renewable energy sector in Australia, with suggestions that it will result the a falling away of further investment in the renewable energy sector, an “investment cliff”.⁶

An independent panel, which conducted a mandatory review of the Renewable Energy (Electricity) Act 2000 (Cth) and reported to the Commonwealth Government in September 2003,

¹ Ibid.

² Ibid.

³ McLennan Magasanik Associates Pty Ltd, *Renewable Energy – A Contribution to Australia’s Environmental and Economic Sustainability* (Final Report prepared for Renewable Energy Generators Australia, June 2006) 14. The Report cites *Australian Energy, National and State Projections to 2029-30*, above n 11 as authority for the 8 percent figure.

⁴ Australian Business Council for Sustainable Energy, *Fourth Year Assessment of MRET* (EcoGeneration Magazine, December 2005/January 2006) referring to its 2005 REC Report.

⁵ Above n 84, 11.

⁶ Above n 20, xvii, xxi and 22; Ibid, 12; above n 77; Bioenergy Australia, *Submission to the Senate Committee Inquiry into the Provisions of the Renewable Energy (Electricity) Amendment Bill 2006*.

predicted this result.¹ The Tambling Report, as it is referred to, accepted at that time that sufficient capacity to meet the 9500 GWh target for 2010 would be in place by 2007 and would result in a decline in investment under the MRET.²

The Tambling Report was also concerned that the termination of the MRET scheme in 2020, and the resulting winding up of the subsidy available through the sale of RECs, would further exacerbate this decline in investment.³ With most renewable projects requiring significant levels of upfront investment and a minimum payback period of 15 years, “by 2007 the available payback period for investments will have fallen below the required threshold”.⁴ This, in turn, had the potential to jeopardise the long term success of the MRET⁵ and the development of a cost competitive renewable energy manufacturing industry within Australia.⁶

To address these concerns, the Tambling Report recommended the ‘interim targets prior to 2010 and the 95 GWh target for 2010 remain unchanged’⁷ but that “MRET targets continue to increase beyond 2010 at a rate equal to the rate before 2010 and stabilise at 20,000 GWh by 2020”.⁸ Electricity market estimates available at the time of the Report forecast that this revised target would “approximate an additional 2 percent of overall demand in 2020 (from the 1997 baseline)”.⁹ The Report also recommended continuing the MRET scheme beyond 2020.¹⁰ To create room for investment in new projects beyond 2020, it also proposed that project installed before 2005, which had already enjoyed the benefit of the 15 year payback, and should no longer require the support of RECs to generate competitive power, have their baselines reset.¹¹ This, in turn, would allow support to be directed to new projects without further increasing the MRET targets beyond 2020 and produce an additional 37 000 GWh of renewable energy in 2030.¹²

¹ Tambling Report, *ibid*, xv.

² *Ibid*, xvii.

³ *Ibid*.

⁴ *Ibid*, xvii and 22.

⁵ In this regard, the Tambling Report states: “Renewable energy generation is likely to exceed the interim targets prior to 2010 and fall short of the 9500 GWh target after 2010. This expectation is premised on the likelihood of generators and liable parties taking advantage of the facility for the banking of RECs for use in later years.” (*ibid*).

⁶ *Ibid*, xx.

⁷ *Ibid*, xxvii, recommendation 7.

⁸ *Ibid*, xxvii, recommendation 8. The Report justified this increase as a means of maintaining the momentum established by the 9500 GWh target, providing sufficient investment to enable the renewables industry to demonstrate its commercial viability, provide a domestic demand base to support the development of further export markets and providing an investment framework that promotes cost effective technology improvements and industry learning.

⁹ *Ibid*, xxiii.

¹⁰ *Ibid*, xxi and recommendation 9.

¹¹ *Ibid*, recommendation 10.

¹² *Ibid*, xxiii.

The Australian Government responded by affirming its support for the MRET scheme, without extending or increasing the existing target.¹ As a result, the Renewable Energy (Electricity) Amendment Act 2006 (Cth), which took effect 11 September, 2006, does not alter the short or long term targets or extend the operation of the scheme beyond 2020.

The Office of the Renewable Energy Regulator's 2005 Annual Report indicates that there is still a great deal of growth needed to meet the targets through to 2020:²

Over 14 million RECs were validly created by participants in MRET to the end of 2005, against a cumulative surrender target to the end of 2005 of 9.2 million. While this might at first sight imply a surplus of RECs, the measure still has a long way to go in its sequence of targets and by 2020 about ten times that number of RECs will need to be created to stay on track. Or to put it another way, we are only about 7% of the way to the 2020 cumulative target and about 93% of the required RECs have yet to be surrendered.

However, the renewable energy sector is concerned with the "number of projects and associated investments that have been banked up in Australia" and the looming "investment cliff".³ In its submission to the Senate Committee Inquiry into the proposed Renewable Energy (Electricity) Amendment Bill 2006, the Renewable Energy Generators of Australia (REGA), representing the generators of over 95% of the electricity from renewable sources in Australia each year, stated:⁴

However, most of the projects needed to meet the cumulative MRET target have already been built or committed and in the advanced planning stages. It is likely that sufficient investment in new renewable capacity to meet the MRET target will have been made by around 2007 or 2008. By the end of 2007, the MRET is expected to have encouraged the development of over 1,600 MW of new renewable capacity, mainly in wind, solar water heaters and biomass generation, spread over all states of Australia. No further investment is likely to be committed from that time under current policy settings and the Bill contains no provisions to reverse this reality. The industry is already seeing evidence of Australian companies moving offshore as the market declines in Australia.

Submissions from the wind, hydroelectricity and bioenergy sectors to the Senate Inquiry into

¹ Australian Greenhouse Office, *Government Response to Tambling MRET Review Recommendations* (12 August 2004), available at: <http://www.greenhouse.gov.au/markets/mret/pubs/mret-response.pdf>.

² Above n 75, 1.

³ Above n 77.

⁴ Above n 76.

the Renewable Energy (Electricity) Amendment Bill 2006 echo this concern.¹

4.2.2 The Renewable Energy Shortfall Charge

The renewable energy shortfall charge under the MRET scheme is \$40.00 per GWh. As the shortfall charge is not tax deductible, the charge equates to around \$57.00 in real terms for liable entities in the 30 percent company tax rate.² The shortfall charge will, however, decline in real terms over time as it is not indexed to inflation. This means that the later in the scheme a new renewable project is initiated, the less the resulting RECs will cost liable entities in real terms and the less support the project will receive from the RECs it generates.³

The setting of the shortfall charge is an important policy decision. If it is set too low, liable entities may be motivated to pay the renewable energy shortfall charge, which simply flows into consolidated revenue rather than supporting the renewable sector.⁴ Alternatively, if it set too high, the price of RECs may encourage the development of marginal renewable energy projects and the desired cost-competitive renewable energy industry will not emerge. Either result would undermine the objects of the MRET scheme. The shortfall charge was set at \$40.00, based on estimates of the level of subsidy required for an efficient renewable energy generator to compete with the prices available for conventional generation.⁵

At present, the \$40.00 shortfall charge is not an issue. Rather, as of June, 2006, the cost of purchasing RECs has remained below \$40.00. REC spot market prices have fallen to around \$23.00 after reaching the high \$30 range in February 2005.⁶ Liable entities are supporting the renewable energy industry, increasingly relying on the surrender of RECs to meet their renewable energy targets rather than paying the renewable energy shortfall charge. Indeed, in 2004 over

¹ See above n 77, which states: “nineteen wind farms with a total capacity of 1369 MW, have received planning approval and yet have not been taken to the next stage” and that “migration of business offshore is resulting in billions of dollars of lost investment in Australia, excluding the monetary value of the lost emissions reduction.” See also: Roaring 40s, *Submission to Senate Committee Inquiry into the Provisions of the Renewable Energy (Electricity) Amendment Bill 2006*, which states that a lack of demand for the RECs associated with it proposed Heemskirk Wind Farm in Tasmania is threatening the project; and, Bioenergy Australia, above n 87, which states that the bioenergy sector is facing the investment cliff. All the submissions to the Senate Inquiry are available at: http://www.aph.gov.au/Senate/committee/ecita_ctte/renewableenergy/.

² Above n 20, 4.

³ Ibid, 134. The Tambling Report recommended “the shortfall charge remain fixed at \$40 per megawatt hour until 2010 and be indexed to the Consumer Price Index between 2010 and 2020” (ibid, 140). The recommendation was made together with the recommendation that the scheme be extended past 2020. A comparable scheme proposed by the State of Victoria, through the Victorian Renewable Energy Bill 2006 (Vic), sets a penalty rate of \$43 per MWh for 2007 and thereafter the rate is indexed to inflation.

⁴ Ibid, 140. Submissions to the Tambling Review suggested that it would be more appropriate to direct this money back to the renewable energy sector.

⁵ Ibid, 135. See also: McLennan Magasanik Associates Pty Ltd, *Projections of Price of Renewable Energy Certificates to Meet the 2% Renewable Energy Target* (26 November 1999), available at: http://www.greenhouse.gov.au/markets/mret/mma/pubs/mma_report.pdf.

⁶ David Rossiter, Regulator, Office of the Renewable Energy Regulator, *Australia's Renewable Energy Certificate System*, Powerpoint Presentation, June 2006. Mr. Rossiter notes that spot prices only reflect approximately 20 percent of the REC market, with the remainder the subject of forward contracts, necessary to secure upfront investment for the

99.8 percent of compliance was achieved by REC surrender and shortfalls from previous years were being made up.¹

Even if the price of RECs does rise above the shortfall charge, liable entities have indicated that they are prepared to pay in excess of the shortfall charge to obtain RECs, “in order to avoid public perceptions of non compliance.”² Whether this will be the case if the price of RECs rises above the renewable energy shortfall charge in the medium to long term remains to be seen.

4.2.3 The Cost of the MRET Scheme and the Failure to Cap Overall Emissions

While the MRET scheme is a market based mechanism, it is not necessarily the most cost effective measure available to abate GHG emissions.³ Cost factored into a recommendation to the Council of Australian Governments that the MRET scheme, together with other GHG abatement measures, be terminated and replaced with a national economy wide emissions trading scheme.⁴ The MRET, in particular, was seen to be:⁵

... a more costly measure to reduce greenhouse gas emissions than it needs to be as it focuses exclusively on renewable energy sources rather than least cost greenhouse gas abatement, such as reducing energy consumption through improving energy efficiency. The rationale for a scheme that focuses only on renewable energy, rather than on greenhouse benefits, is the perception of the need for the conservation of non-renewable resources. This is, however, not an issue for Australia. Consequently, any arbitrary diversion of investment away from more efficient carbon reducing options and towards renewables will burden the economy with unnecessary costs.

There was never any suggestion, however, that the MRET scheme would serve as the most cost-effective means to reduce overall GHG emissions and energy consumption. Rather, from the outset the cost was justified as a means of developing a viable renewable energy sector with a recognised role to play in achieving long-term GHG emission reductions.⁶

However, the cost, which is passed along from suppliers of electricity to consumers and will ultimately be born by the economy as a whole, should not be overstated. A report commissioned prior to the implementation of the MRET stated the long run effect of the MRET on Gross Domestic Product (GDP) would be “slightly negative” at -0.03 percent per annum.⁷ With

infrastructure costs associated with large renewable energy projects.

¹ Above, n 75.

² Above n 20, 17.

³ Final Report of the Renewables Target Working Group, *Implementation Planning for Mandatory Targets for the Uptake of Renewable Energy in Power Supplies* (Department of Environment and Heritage, May, 1999) at 6, available at: <http://www.greenhouse.gov.au/markets/mret/rtwg/index.html>; Renewable Energy (Electricity) Bill 2000, Second Reading Speech, Parliamentary Debates, Senate, 22 June 2000, p. 18030.

⁴ Council of Australian Governments Energy Market Review, *Towards a Truly National and Efficient Energy Market* (Commonwealth of Australia, 2002) at 233. This report is chaired by Warwick Parer and is known as the Parer Report.

⁵ *Ibid*, 230.

⁶ Final Report of the Renewables Target Working Group, above n 112, 6.

⁷ Econtech Report, *Macroeconomics and Industry Effects of the 2% Renewables Target* (April 1999), available at:

the possible exception of the cost born by energy intensive industry,¹ this cost is relatively minimal if it is successful at “facilitating the growth of the renewable energy industry such that, by 2020, renewable energy generation will be a viable and competitive greenhouse abatement measure, long after much of the low-hanging fruit has been plucked.”²

5. CONCLUSION

Few would argue with the conclusion that “the theory behind the MRET is right and it works.”³ In order to enjoy the full benefit of the scheme, however, care must be taken to ensure that early achievement of the relatively modest target does not “cap” its potential and pre-empt the full development of a viable and cost-effective renewable energy sector in Australia. Ultimately, it may be Australia which needs to learn from countries such as China, which are preparing for the future by setting ambitious renewable energy targets.

<http://www.greenhouse.gov.au/markets/mret/econtech.html>

¹ In its submission to the Tambling Review, the Chamber of Commerce and Industry of Western Australia expressed concerns about the cost the MRET scheme imposes on the energy intensive resource sector in Western Australia, and cautioned against an increase in the target without consideration of this, and other factors specific to Western Australia. Its submission is available at:

<http://www.mretreview.gov.au/pubs/mretsubmission118.pdf#search=%22western%20power%20submission%20MRET%22>.

² Above n 79.

³ Minority Report from Labor Senators, above n 81.