

Mandatory Renewable Energy Target (MRET)

Introduction

The need for renewable energy is a central topic to the sustainability debate, especially given that much of the world is dependant on coal-based power generation for its electricity. There are two key drivers for renewable energy, firstly the need to reduce greenhouse gas emissions, and secondly, the need to reduce depletion of, and dependence on, non-renewable resources. One of the barriers to the generation of renewable energy around the world is a lack of infrastructure. The Australian government has implemented legislation in an attempt to overcome this barrier, setting a target for increased renewable electricity generation in order to drive the development of additional renewable electricity infrastructure in Australia.

The Mandatory Renewable Energy Target (MRET) is a target set by the Australian government to achieve 9,500 gigawatt hours (GWh) of extra renewable electricity per year by 2010 and then to maintain that level of renewable electricity generation until 2020.

This briefing note provides an introduction to MRET, the legislation under which it was introduced and a discussion of the MRET review.

Renewable Energy (Electricity) Act 2000 and MRET

The Renewable Energy (Electricity) Act of 2000 had three key aims:

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

The Act is supported by the Renewable Energy (Electricity) (Charge) Act 2000 and the Renewable Energy (Electricity) Regulations 2001. As part of the legislation the **Mandatory Renewable Energy Target (MRET)** of 9,500 GWh per year of additional installed renewable energy by 2010 was established.

The Act and Regulations specify (amongst other things) the liability of purchasers of wholesale electricity, the ramp up time period to meet the target, penalties for non-compliance, the process of creating Renewable Energy Certifications or RECs, the eligibility of renewable energy sources and the operation of the Office of the Renewable Energy Regulator (ORER). These items are discussed in greater detail below.

Implementation of MRET

The basis of the MRET scheme is that purchasers of wholesale electricity are liable to surrender a pre-determined number of Renewable Energy Certificates (RECs) each year, or pay a penalty. RECs (discussed further overleaf) are tradeable commodities and are created through the generation of electricity from renewable sources. This, in effect, increases the sale value of renewable electricity.

It is noted that MRET applies only to the generation of electricity from renewable sources. It does not apply to the use of renewable energy resources for process heat or to the use of renewable fuels (for example biodiesel) for transport purposes. One exception to this is the case of solar water heaters which can generate RECs on the basis of displaced non-renewable electricity no longer used for hot water.

Who is Liable to Deliver Under MRET?

The liability for achieving the MRET was placed on electricity retailers and other wholesale purchasers¹ of electricity. The MRET only applies to grid-based power applications which have over 100 MW installed capacity.² These retailers and purchasers are allocated a proportional liability for meeting their share of the target additional renewable electricity generation for that year, on the basis of the proportion of the total liable electricity that they purchase. For example, a retailer that supplied 10% of the nations "relevant acquisitions"³ of electricity would be liable for 10% of the MRET target for that year.

¹A wholesale purchase of electricity is a purchase directly from the National Energy Market (NEM) or a power generator.

²Details on how to calculate the installed capacity of a grid are presented in the Renewable Energy (Electricity) Regulations. Self-generators, being those that generate for their own direct use, are excluded from the measure.

³Electricity to which the MRET directly applies as defined in Section 31 of the Renewable Energy (Electricity) Act 2000.

Implementation Schedule

In the initial MRET, interim targets were set for the achieving the 2010 target of 9,500 gigawatt hours (GWh) per year renewable energy. These interim targets are:

Year	Required additional GWh	Year	Required additional GWh
2001	300	2006	4,500
2002	1,100	2007	5,600
2003	1,800	2008	6,800
2004	2,600	2009	8,100
2005	3,400	2010-2020	9,500

Retailers and large buyers are required to maintain their level of renewable electricity purchase at the 2010 level up until 2020. The MRET review, discussed later in this briefing note, recommended that liable parties should have to increase their renewable electricity purchases beyond 2010 to a level of 20,000 GWh by 2020. At the time of writing this briefing note no decision has been made on whether to adopt the recommendations of the review.

Penalties

Any liable party who does not meet their share of the target in any one year, evidenced through the surrender of an insufficient number of valid Renewable Energy Certificates (RECs), is liable for a non-compliance penalty of \$40 per megawatt hour⁴ (MWh). This penalty is not tax deductible, making it an effective charge of \$57/MWh (allowing for the corporate tax rate of 30%). A leeway of up to 10% is allowed in the meeting of targets, however, if the shortfall is outside the 10% leeway, the whole shortfall is penalised. Provision is made for the redemption of penalties if the shortfall is made up within the following three years.

Renewable Energy Certificates

Renewable Energy Certificates (RECs) are tradeable certificates, which are indicative of amount of renewable electricity generated. RECs are used directly to demonstrate compliance with the MRET.⁵

Valid RECs are created by accredited renewable energy generators for electricity delivered to wholesale purchase points or an equivalent point of use. Each REC is indicative of 1 MWh of renewable electricity generated. Calculation of the total amount of electricity which is eligible for RECs depends on the generation technology. For power stations, the total electricity delivered to the wholesale purchase point which is eligible for RECs is calculated by:⁶

$$\text{Total amount of useful energy generated - fossil fuel based electricity - auxiliary losses - [dispatched electricity x (1 - marginal loss factor)]}$$

The eligible renewable energy delivered is thus the total energy generated, less the proportion generated from fossil fuel, the electricity which is used on site (auxiliary losses) and any transmission losses. (The final term of the equation, between the square brackets, represents the transmission losses.⁷)

The amount of energy calculated by this formula, in excess of the power station's 1997 eligible renewable power baseline allocated to each power station⁸ (in MWh), is the amount of electricity for which Renewable Energy Certificates can be created.

Parties which are liable to contribute to MRET are required to make their own arrangements to meet their obligation. This may be done either by developing their own contracts with renewable energy generators to acquire Renewable Energy Certificates or by trading in RECs, with prices negotiated on a case by case basis. The MRET Review (see section overleaf) reported that spot market prices for RECs (Nov 02 – Apr 03) averaged around \$35 per certificate.

⁴1,000 megawatt hours (MWh) is equal to 1 gigawatt hour (GWh). As an indicative guide, one domestic dwelling uses in the order of 7-8 MWh of electricity each year.

⁵The concept of a REC was defined through the Renewable Energy (Electricity) Act 2000.

⁶<http://www.orer.gov.au/factsheets/pubs/eligibility.pdf>.

⁷Note that if 10% of the electricity is lost during transmission, the marginal loss factor (MLF) is 0.9. The MLF is calculated by the National Electricity Market Management Company (NEMMCO) in regions which are part of the National Electricity Market.

⁸Eligible renewable energy generation assets starting operation on or after 1 January 1997 are able to earn certificates for all electricity supplied to the appropriate measurement point.

Regardless of how they are collected, each year on 14 February parties are required surrender RECs equal to their total liability to the Office of the Renewable Energy Regulator (ORER – see below). RECs must be registered by ORER before they are considered valid, and the ultimate determination of validity of a REC is also made by ORER.

Eligible Renewable Resources

The following is the most up-to-date list of technologies/sources that are classified as renewable under the measure (ORER 2004):

- Hydro,
- Wind,
- Solar,
- Bagasse co-generation,
- Black liquor,
- Wood waste,
- Energy crops,
- Crop waste,
- Food and agricultural wet waste,
- Landfill gas,
- Municipal solid waste combustion,
- Sewage gas,
- Geothermal-aquifer,
- Tidal,
- Photovoltaic and photovoltaic Renewable Stand Alone Power Supply systems,
- Wind and wind hybrid Renewable Stand Alone Power Supply systems,
- Micro hydro Renewable Stand Alone Power Supply systems,
- Solar hot water,
- Co-firing,
- Wave,
- Ocean,
- Fuel cells, and
- Hot dry rocks.

ORER highlights that fossil fuels and fossil fuel derived waste products are not eligible to be classified as renewable sources. For example, coal seam methane, waste coal mine gas and other coal or natural gas based products; waste heat from cogeneration; electricity production from cogeneration based on fossil fuels; and any non-biomass component of co-firing of wastes. If electricity is produced from a combination of renewable and fossil fuel energy, then the fossil fuel contribution must be netted out.

Office of the Renewable Energy Regulator

The Office of the Renewable Energy Regulator was established by under the Renewable Energy (Electricity) Act 2000 to oversee the implementation of MRET. David Rossiter was appointed to the position of Renewable Energy Regulator early in 2001 and, with support staff, undertakes the activities of ORER from a base in Canberra. The responsibilities of ORER include enforcement of legislation, auditing, accreditation, advice and the tracking and validation of RECs.

ORER also maintains a list of grids that are liable under MRET, in addition to four publicly available registers. These are the register of registered persons; the register of applications for accredited power stations; the register of accredited power stations; and the register of Renewable Energy Certificates.

MRET Review

The preparations for the MRET review commenced at the end of 2002. The review panel comprised four members, the Hon Grant E J Tambling (Chair), Peter Laver, Monica Oliphant and Neville Stevens AO. The scope was determined through submissions from interested parties, including stakeholders in the renewable energy and the electricity sectors, and environmental and community groups. On the basis of these submissions, the terms of reference of the panel were formulated, which were to review the operation of Renewable Energy (Electricity) Act 2000 and to gain feedback on, and ascertain progress related to, various MRET issues.

This included consideration of the extent to which the Act had contributed to reducing greenhouse gas emissions and had encouraged additional generation of electricity from renewable energy sources, in addition to the mix of technologies which had resulted from MRET influence.

The Panel was also required to comment on the overall and interim targets, and make recommendations on any alternative approaches required. Finally, the review was to determine other environmental impacts that have resulted from the implementation of the Act.⁹

Recommendations

The key recommendations from the Panel included that MRET continue to operate, that the targets up to 2010 remain unchanged and that the targets continue to increase beyond 2010 to stabilise at 20,000 GWh in 2020. The Panel also made various recommendations concerning the eligibility of energy generated from biomass, including the retention of provisions to ensure that plantation harvesting operations are conducted according to relevant approvals and that landclearing of native forests be deterred. Other recommendations addressed residues from sawmilling and the eligibility of photovoltaics/solar and solar heating applications.

A full list of the recommendations is available from the Review website at:

<http://www.mretreview.gov.au/report/pubs/mret-summary.pdf>.

MRET State of Play

The MRET review was released in January 2004. It identified that the MRET interim targets for renewable electricity generation during its first two years of operation were exceeded and that upcoming interim targets over the next few years were likely to be met.

The recommendations of the MRET review are being considered by the Australian Government and an announcement on actions in the context of broader energy and climate change policy issues is expected in mid-May 2004.

Useful References

Australian Government Attorney General's Department (2004), Renewable Energy (Electricity) Act 2000, found online at <http://scaleplus.law.gov.au/html/pasteact/3/3431/top.htm>, accessed April 2004.

Mandatory Renewable Energy Target (2004), Home Page, found online at www.greenhouse.gov.au/markets/mret/, accessed April 2004.

Mandatory Renewable Energy Target Review (2004), Home Page, found online at <http://www.mretreview.gov.au/index.html>, accessed April 2004

Office of the Renewable Energy Regulator (2004), Home Page, found online at <http://www.orer.gov.au/>, accessed April 2004.

Contact WISE Briefing Notes

PO Box 705
Glebe NSW AUSTRALIA 2037
W: www.wisebriefingnotes.com

T: +61 2 9570 4901
F: +61 2 9571 4900
E: wise@wisebriefingnotes.com



⁹Full details of the terms of reference for the review panel can be found at <http://www.mretreview.gov.au/terms.html>.