

# **Review of the Renewable Energy Target**

## **Expert Panel**

## **Call for Submissions**

5 April 2014

**Disclaimer**

While reasonable efforts have been made to ensure that the contents of this publication are factually correct, the Commonwealth does not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.

© Copyright Commonwealth of Australia, 2014.

This report should be attributed as 'Renewable Energy Target Review Expert Panel Call for Submissions, Commonwealth of Australia 2014'.

**CONTENTS**

- 1. About this review ..... 1**
  - 1.1 Key dates ..... 1
  - 1.2 How to make a submission ..... 2
- 2. About the Renewable Energy Target ..... 3**
  - 2.1 The operation of the RET ..... 3
  - 2.2 The objectives and outcomes of the RET ..... 4
- 3. Impacts of the Renewable Energy Target ..... 7**
  - 3.1 Impact on the renewable energy industry ..... 7
  - 3.2 Impact on energy markets ..... 7
  - 3.3 Impact on electricity prices ..... 8
  - 3.4 Impact on households ..... 9
  - 3.5 Impact on businesses ..... 9
  - 3.6 Health impacts of wind farms ..... 9
- 4. The RET and other policies ..... 10**
- 5. Reducing the administrative burden of the RET ..... 11**
- 6. Other issues for the review ..... 11**
  - 6.1 Eligibility of technologies ..... 11
  - 6.2 Frequency of reviews ..... 12
  - 6.3 Native forest wood waste ..... 12
- Attachment A: Renewable Energy Target Review Terms of Reference ..... 13**
- Attachment B: Consultation paper on the proposed approach to key modelling assumptions ..... 14**
  - Introduction ..... 14
  - Proposed approach to key modelling assumptions ..... 14

## 1. ABOUT THIS REVIEW

On 17 February 2014, the review of the Renewable Energy Target (RET) scheme was jointly announced by the Hon Ian Macfarlane MP, the Minister for Industry, and the Hon Greg Hunt MP, the Minister for the Environment.

The Terms of Reference state that the review is to examine the operation, costs and benefits of the RET scheme including the economic, environmental and social impacts, the extent to which the objectives of the scheme are being met and the interaction of the RET with other Commonwealth and State/Territory Government policies. The review is to provide advice on whether the objectives of the RET scheme are still appropriate and the range of options available for reducing its impact on electricity prices. The full Terms of Reference is at Attachment A.

An Expert Panel has been appointed to undertake the review, comprising: Mr Dick Warburton AO LVO (chair), Dr Brian Fisher AO PSM, Ms Shirley In't Veld and Mr Matt Zema. The Panel is supported by a secretariat in the Department of the Prime Minister and Cabinet.

This paper will assist individuals and organisations to prepare submissions on the review. It identifies matters that the Panel considers most relevant, but comments on other issues are welcome. The Panel is particularly interested in any evidence to support findings and conclusions made in submissions. This call for submissions closes on **16 May 2014**.

Detailed electricity market modelling will be undertaken by an independent modeller to inform this review. The Panel is seeking feedback on the assumptions consultation paper (at Attachment B) which outlines a proposed approach to key assumptions to be used in this modelling by 17 April 2014. The Panel will also convene a workshop in Sydney to discuss the modelling assumptions with interested parties prior to them being finalised. Places will be limited, so parties wishing to participate should register by emailing [RETReview@pmc.gov.au](mailto:RETReview@pmc.gov.au) by 11 April 2014. The Panel will schedule a further workshop on the modelling results prior to finalising its report to Government.

Information on this review is available at [www.retreview.dpmc.gov.au](http://www.retreview.dpmc.gov.au)

The above consultation process will inform the development of the Panel's report to Government, which it expects to complete in mid-2014.

### 1.1 Key dates



## 1.2 How to make a submission

Comments on the modelling assumptions (Attachment B) close at 5pm on **17 April 2014**.  
The deadline for responses to the call for submissions is 5pm on **16 May 2014**.

Comments and submissions can be lodged by:

Uploading to **[www.retreview.dpmc.gov.au/online-submissions](http://www.retreview.dpmc.gov.au/online-submissions)** (preferred option);

Or

Email: **[RETReview@pmc.gov.au](mailto:RETReview@pmc.gov.au)**

Please include the following information in your submission:

- Company name and address (if applicable)
- Details of a contact person for the submission
- Requests for confidentiality of submissions or part of a submission (see below)

All submissions will be treated as public documents and published on the review website. Should you require your submission, or part of your submission, to be treated as confidential please make this clear at the time of providing your submission.

Any request under the *Freedom of Information Act 1982* (Cth) for access to a submission marked 'confidential' will be determined in accordance with that Act.

## **2. ABOUT THE RENEWABLE ENERGY TARGET**

The RET scheme was first introduced in 2001 to achieve an additional two per cent of renewable energy in the electricity mix by 2010. From 2010, the scheme was expanded to ensure that the equivalent of at least 20 per cent of Australia's electricity comes from renewable sources by 2020.

The RET scheme is underpinned by the *Renewable Energy (Electricity) Act 2000* (REE Act), the *Renewable Energy (Electricity) Regulations 2001*, the *Renewable Energy (Electricity) (Large-scale Generation Shortfall Charge) Act 2000* and the *Renewable Energy (Electricity) (Small-scale Technology Shortfall Charge) Act 2010*.

### **2.1 The operation of the RET**

The RET scheme promotes additional renewable generation by requiring liable entities (generally electricity retailers) to source a proportion of their electricity from renewable sources. Liable entities must acquire and surrender renewable energy certificates which are issued to renewable energy power stations and owners of small-scale renewable energy systems. Each certificate represents one megawatt hour (MWh) of renewable generation.

Since 2011 the RET has operated as two schemes - the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES) - each with separate certificate markets and separate obligations for liable entities.

The LRET encourages additional large-scale renewable energy projects such as solar and wind farms by legislating demand for Large-scale Generation Certificates (LGCs). These LGCs are created by accredited generators for the renewable energy they produce. If a power station was operating before 1 January 1997, it is eligible to generate certificates above a baseline level of generation. LGCs are tradeable in spot markets and are often sold with electricity supply in Power Purchase Agreements. The LRET includes legislated annual targets that increase to 41,000 gigawatt hours (GWh) of renewable energy in 2020 and remain at this level until 2030.

The SRES supports the installation of new small-scale renewable energy systems. Eligible systems can either be small-scale solar photovoltaic (PV), wind or hydro units that generate electricity or solar water heaters (SWH) and air source heat pumps that displace electricity. Unlike the LRET, the SRES does not have binding annual targets. Rather, this scheme is uncapped allowing all eligible installations to receive assistance. Support through the SRES gradually reduces from 2017 until the scheme phases out in 2030.

Owners of eligible systems are able to create Small-scale Technology Certificates (STCs) through 'deeming' arrangements based on the amount of electricity the system will generate or displace over its lifetime. For example, solar PV installations are entitled to create 15 years' worth of certificates at the time of installation. STCs may be traded in the spot market, at the market price, or sold through the STC Clearing House at a fixed price of \$40, which effectively sets a cap on the unit cost of certificates. If supply of STCs is greater than demand, the market price will be lower than the Clearing House price and in these circumstances the Clearing House will typically not come into play. In this situation, STCs put into the Clearing House will join the Clearing House Transfer List, which works on a first-in-first-served basis.

Liable entities must surrender STCs quarterly and LGCs annually to the Clean Energy Regulator (CER), to meet obligations under the SRES and the LRET respectively. If a liable entity does not surrender the required amount of certificates, it must pay a shortfall charge, which is set at \$65 per certificate. However, because the cost of certificates is tax deductible and the shortfall charge is not, the effective penalty price may be higher than this.

The RET contains two types of exemptions. The first is intended to help emissions-intensive trade exposed (EITE) businesses that compete in international markets, where their competitors do not face similar costs. It is provided through a Partial Exemption Certificate (PEC), and the level of exemption depends on the emissions intensity of the activity.

The second exemption is for entities generating their own electricity (self-generators) and has been in place since 2001. Certain criteria must be met for a self-generator to be exempt, for example, if some of the electricity is supplied to a third party, all of the electricity produced by the self-generator becomes liable unless it is consumed within a one kilometre radius of generation.

## 2.2 The objectives and outcomes of the RET

The objects of the REE Act are:

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

Since 2001, 400 power stations have been accredited under the LRET.<sup>1</sup> Wind energy has experienced the largest growth, rising from an installed capacity of around 100 megawatts (MW) in 2001 to over 3,800 MW in 2013.<sup>2</sup>

### Understanding generation capacity and output

A power station's capacity refers to how much electricity it can deliver at a single instant in time. It is measured in watts (W). A kilowatt (kW) is a thousand watts, a megawatt (MW) is a million watts, and a gigawatt (GW) is a thousand MW.

Generation is the amount of electricity delivered over time and is typically measured in kilowatt-hours (kWh), megawatt-hours (MWh) or gigawatt-hours. For example, a 10MW capacity generator running at maximum power will deliver 10MWh of electricity per hour of continuous operation.

More than two million small-scale renewable energy systems have been installed under the RET, including around 1.2 million rooftop solar PV systems and 845,000 solar hot water units.<sup>3</sup> Installations of rooftop PV systems have increased from around 100 installations per year in 2001, to a peak of over 360,000<sup>4</sup> installations in 2011. The average system size has also grown over the last five years.

<sup>1</sup> Clean Energy Regulator *Register of Accredited Power Stations*

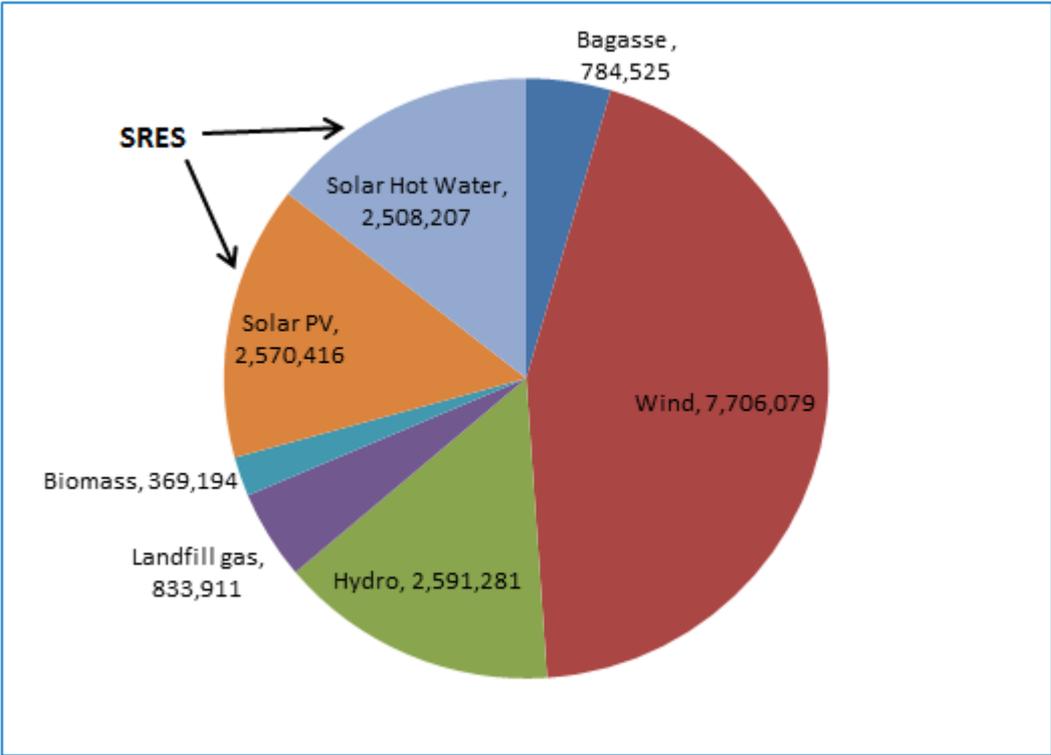
<sup>2</sup> Installed capacity data provided by the Clean Energy Regulator to the RET Review Secretariat

<sup>3</sup> Clean Energy Regulator, 'Small-scale installations by postcode', January 2014

<sup>4</sup> Green Energy Markets, *Small-scale technology certificates data modelling for 2014 to 2016*, 2014

Generation from renewable sources has increased since 2001. Figure 1 shows that the total additional renewable generation supported by the RET in 2012 was around 17,000 GWh. Of this, the LRET accounted for around 12,000 GWh (of which wind energy was the largest contributor) and the SRES accounted for around 5,000 GWh, with generation from solar PV and displacement from solar water heaters contributing roughly equal amounts.<sup>5</sup>

**Figure 1: Renewable generation under the RET in 2012 (GWh)**

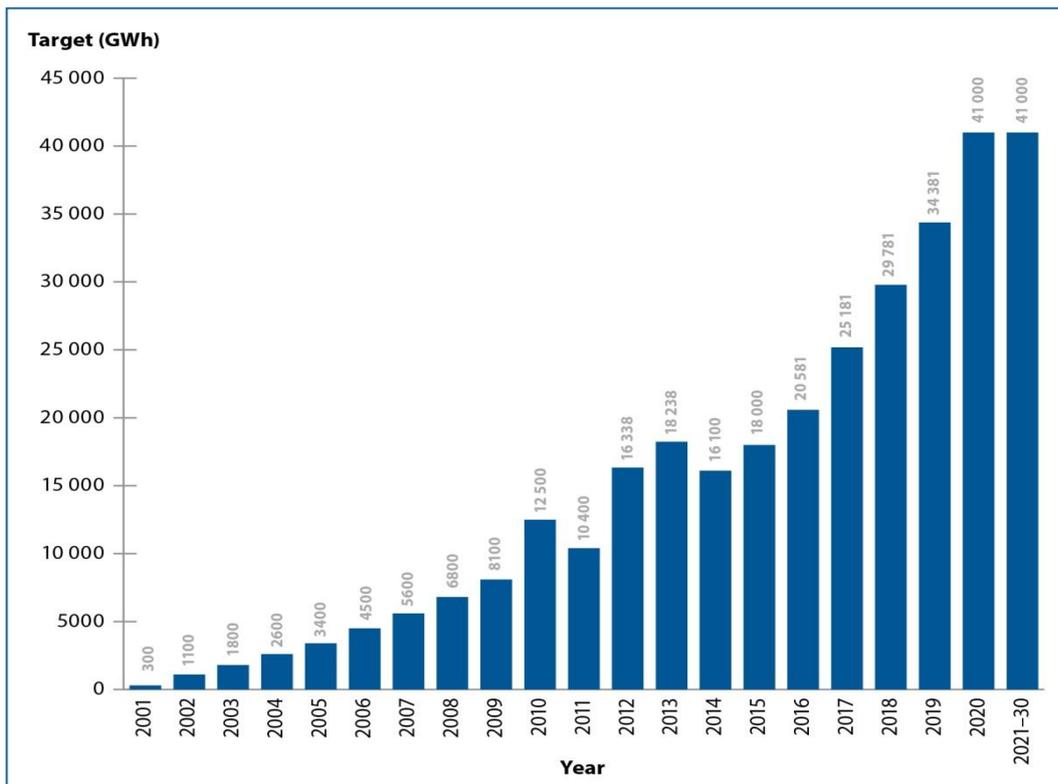


Source: Data provided by the Clean Energy Regulator, current at 11 March 2014

Figure 2 shows the annual targets under the LRET and the trajectory of large-scale renewable generation under current policy settings.

<sup>5</sup> Renewable generation data obtained from the Clean Energy Regulator

**Figure 2: Annual LRET targets**



Note: targets do not include the non-renewable waste coal mine gas component of the LRET.

Source: Renewable Energy (Electricity) Act 2000 (Cth); Clean Energy Regulator 'The Large-scale renewable energy target', <http://ret.cleanenergyregulator.gov.au/About-the-Schemes/Large-scale-Renewable-Energy-Target--LRET-/about-lret>

A report by SKM MMA for the Clean Energy Council (CEC) in 2012 estimates the emissions reductions as a result of the RET to be around 22.5 million tonnes of carbon dioxide equivalent over the period 2001 to 2012.<sup>6</sup> Modelling commissioned for this review will provide updated projections of emissions reductions from the RET and their unit cost.

### Questions

*How has the RET performed against the objectives in the Renewable Energy (Electricity) Act 2000?*

*Are there more efficient and effective approaches to achieving these objectives?*

*Do the objectives of the Act remain appropriate, in light of falling electricity demand and the Government's target and policies for reducing greenhouse gas emissions?*

<sup>6</sup> SKM MMA, *Benefit of the Renewable Energy Target to Australia's Energy Markets and Economy: Report to the Clean Energy Council, 2012*

### 3. IMPACTS OF THE RENEWABLE ENERGY TARGET

#### 3.1 Impact on the renewable energy industry

The CEC estimates that \$18 billion worth of investment has been stimulated by the RET resulting in 24,000 jobs in the renewable energy sector.<sup>7</sup> The majority of investment (approximately \$11 billion) and employment (around 17,000 people) has been in the small-scale industry.

In addition to the large-scale projects already installed, the Bureau of Resources and Energy Economics (BREE) has identified a further 1,521 MW of renewable generation at the committed stage of development, the majority of which is wind.<sup>8</sup> Projects at the feasibility and planning stages represent a further 14,365 MW of renewable capacity.<sup>9</sup>

Meeting the current 41,000 GWh large-scale target by 2020 (which compares with the 2014 target of 16,100 GWh) will require around an additional 10,000 MW of renewable capacity to be deployed, including the 1,541 MW identified as 'committed'. This requires a significant increase in the amount of new renewable capacity to be built each year from 2015 to 2020.

When the RET was split into the LRET and the SRES, the SRES was expected to contribute between 4,000 to 6,000 GWh of renewable generation to the 2020 target.<sup>10</sup> Systems supported by the SRES are currently exceeding 5,000 GWh of generation and recent projections suggest that the SRES could contribute around 10,000 GWh<sup>11</sup> by 2020.

#### 3.2 Impact on energy markets

National demand for electricity has been falling since 2008-09 and projections for demand from now to 2020 are significantly lower than that projected when the expanded RET scheme commenced. Demand has declined for a range of reasons, including slower than anticipated growth in the industrial sector, global economic trends, energy efficiency initiatives and consumers responding to increasing electricity prices. In addition, the strong uptake of household PV systems reduces demand for electricity sourced from the grid. The planned closure of a number of large industrial and manufacturing operations will further reduce demand.<sup>12</sup>

The large-scale 2020 target is expressed as a fixed target in gigawatt hours (rather than as a percentage of total electricity generation) to provide certainty for market participants. When the 20 per cent target was translated into a gigawatt hour target in 2007, Australia-wide demand in 2020 was projected to be 300,000 GWh. Based on more recent projections of electricity demand (if the legislated 41,000 GWh of renewable generation in 2020 is achieved), the RET could deliver more than a 20 per cent share of renewables.

Given the recent trends in electricity demand, the RET has been bringing forward generation capacity which would otherwise not be required to meet demand until after 2020 and reducing the market share for incumbent generators. This may contribute to fossil fuel generators being

---

<sup>7</sup> Clean Energy Council, *Clean Energy Australia Report 2012*, p.18

<sup>8</sup> Bureau of Resources and Energy Economics, *Electricity Generation Major Projects*, October 2013, p.22, adjusted for power stations that have been accredited under the RET since date of publication.

<sup>9</sup> *Ibid*, p.20

<sup>10</sup> The lower bound (4,000 GWh) was deducted from the original (combined) 45,000 GWh 2020 target, giving the large-scale 2020 target of 41,000 GWh

<sup>11</sup> SKM MMA, *Modelling the Renewable Energy Target - Report for the Climate Change Authority*, 2012

<sup>12</sup> AEMO, *February Update, Supply – Demand Snapshot for the National Electricity Market*, 2014

mothballed or curtailed.<sup>13</sup> The Australian Energy Regulator (AER) estimated in December 2013 that 2,300 MW of black and brown coal-fired generation has been shut down since 2012, and Australian Energy Market Operator (AEMO) forecast that this will reach 3,100 MW by 2020. These plants have largely been older, higher cost plants with some capacity withdrawn on a seasonal basis.

The RET also affects system operations and networks. First, there is the issue of reliability when renewable resources are variable. AEMO has concluded that this is manageable in the National Electricity Market at the current level of penetration; though integrating up to nine GW of new wind generation forecast by 2020 may present some operational challenges.<sup>14</sup>

Second, there is the issue of how to reflect the full costs and benefits of distributed energy sources connected to the grid, particularly rooftop PV systems. The impact of solar PV connections and reduced demand from the residential sector may, in part, contribute to higher network charges as network businesses seek to recover expenditure from fewer units of energy sold. There are several important drivers of network costs, with uptake of air-conditioners a major contributor to growth in peak demand over recent years.

### **3.3 Impact on electricity prices**

Electricity prices have increased by 58 per cent over the past four years<sup>15</sup> due to increases in network costs (the poles and wires) and the impact of environmental schemes such as the carbon tax, state and territory feed-in-tariffs and the RET. The RET influences electricity prices in two ways:

- The RET places costs on liable entities, largely energy retailers, who are required to purchase certificates to comply with the scheme. These costs are passed onto consumers and currently represent around four per cent of the average household electricity bill.
- The RET also has the potential to influence wholesale electricity prices as it affects the balance between electricity supply and demand by stimulating investment in renewable generation capacity that would not otherwise be forthcoming.

Understanding the two factors at play; certificate prices and wholesale prices, is important in considering the changes in retail prices that can reasonably be expected from any changes to the LRET. The modelling commissioned as part of the review will provide estimates of the overall effect of different LRET targets and the impact this may have on household electricity bills.

The SRES comprised around 60 per cent of the RET costs in 2012-13<sup>16</sup> due to the large number of systems installed in this period and the fact that certificates are received upfront at the time of installation through deeming arrangements. In the past, the cost of the SRES has been high and unpredictable, largely due to the high uptake of PV systems incentivised by State and Territory Government feed-in-tariffs and the solar credits multiplier under the RET, and falling system costs. However since these incentives have been wound back, STC prices have been less volatile and the cost of the SRES is expected to fall in 2014.

---

<sup>13</sup> AEMO, *National Transmission Network Development Plan*, 2013, p.6

<sup>14</sup> AEMO, *Integrating Renewable Energy – Wind Integration Studies Report*, September, 2013

<sup>15</sup> ABS (Dec 09 – Dec 2013) *Consumer Price Index for Electricity* (cat. No. 6401.0)

<sup>16</sup> AEMC, *Residential Electricity Price Trends*, 2013, p.12

### 3.4 Impact on households

The impact of the RET on households is felt through their electricity bills. Nationally, the Australian Energy Market Commission (AEMC) estimates that the cost of certificates passed onto consumers by liable entities will account for around four per cent (or around \$65) of residential retail electricity prices in 2013-14.<sup>17</sup> This cost varies somewhat between states and territories. In states where the retail price remains regulated, the jurisdictional regulator estimates the cost impact of the RET and allows energy retailers to pass this on to electricity consumers. This has generally been in the order of three to five per cent of the bill.

The impact of the RET is not spread uniformly across society. While some households have benefited directly from the installation of small-scale technologies, all electricity consumers share the costs of the RET through their electricity bills. In addition, increasing electricity prices are disproportionately felt by low-income households. These households spend a greater proportion of their income on domestic fuel and power and may face a range of barriers to accessing more efficient appliances and small-scale renewable technology.<sup>18</sup>

### 3.5 Impact on businesses

Australia's 300 largest energy users consume around 56 per cent of Australia's total energy.<sup>19</sup> Manufacturing represents the largest energy user at 34 per cent of energy consumed by Australian industries.<sup>20</sup>

As discussed in Section 2, the RET includes exemptions for businesses conducting EITE activities and those self-generating electricity. Over recent years, businesses conducting highly emissions-intensive activities (such as aluminium smelting) have received assistance for the costs of the RET for around 65 to 80 per cent of the electricity use related to that activity.<sup>21</sup> These businesses still face the cost of the RET for the proportion of electricity not exempt. Remote resource projects that generate their own electricity (and other self-generators) are exempt from the cost of the RET, provided certain conditions are met.

There are over two million Small and Medium Enterprises (SME's) throughout Australia that play a vital role in the economy, employing more than seven million people. The cost impact of the RET for an average SME consuming 140 MWh of electricity has been estimated to be \$337 per year over the period 2013 to 2031.<sup>22</sup>

### 3.6 Health impacts of wind farms

The National Health and Medical Research Council (NHMRC) have recently released a draft information paper on the health impacts of wind farms. This Review will not be addressing the matters covered in the NHMRC study. Stakeholders who wish to engage with the NHMRC on its review of the potential health impacts of wind farms are encouraged to make a submission to the NHMRC. Submissions on the *Draft Information Paper: Evidence on Wind Farms and Human Health* close on Friday 11 April 2014.

---

<sup>17</sup> AEMC, *Residential Electricity Price Trends 2013*, p.12

<sup>18</sup> Australia Council of Social Service, *Energy and Low Income Households*, 2011

<sup>19</sup> Department of Industry 'Energy Efficiency Opportunities: about the program'

<http://energyefficiencyopportunities.gov.au/about-the-eeo-program/about-the-program>

<sup>20</sup> Australian Bureau of Statistics, *Information Paper: Towards the Australian Environmental-Economics Accounts 2013*, Cat. 4655.0

<sup>21</sup> Information provided by the Clean Energy Regulator to the Review Secretariat

<sup>22</sup> SKM MMA, *Modelling the Renewable Energy Target – Report for the Climate Change Authority 2012*

**Questions:**

*How has the RET influenced the development of the renewable energy industry?*

*Should the LRET be abolished, reduced or increased? If retained, what level should it be?  
What would the impact of such changes be?*

*Do small-scale renewable energy systems still require support through the SRES? If so, for what period will support be required for?*

*Should the LRET and SRES schemes be recombined?*

*What impact is the RET having on electricity markets and energy markets more broadly?  
How might this change over time?*

*Are the current exemption arrangements appropriate?*

*How should reforms to the RET be implemented? What transitional issues could arise and how might they be addressed?*

#### **4. THE RET AND OTHER POLICIES**

This review will consider the interaction of the RET scheme with other existing Government policies and regulations and those currently under development. Relevant Australian Government policies include, but are not limited to:

- The Direct Action Plan, which will provide incentives for emissions reductions to contribute to Australia's target of reducing emissions to five per cent below 2000 levels by 2020. The centrepiece of the Direct Action Plan is the Emissions Reduction Fund (ERF), through which the Government will purchase the least-cost abatement; and
- The development of the Energy White Paper and other energy market reforms being pursued by the Council of Australian Governments (COAG's) Energy Council.

Policies operated by State and Territory Governments that affect the RET include:

- Feed-in-tariffs, that were introduced between 2008 and 2010 to provide a premium payment for the electricity that households with PV systems generate or export back to the grid. These have been progressively wound back over recent years, but a sizeable proportion of households with PV systems remain on the premium rates;
- Planning regulations for large-scale renewable energy projects, which have the potential to affect the cost, level and mix of renewable energy generation in Australia;
- Energy efficiency certificate schemes, which place obligations on electricity retailers to acquire and surrender a certain number of certificates each year;
- The voluntary GreenPower accreditation program, under which energy providers can purchase renewable energy on the behalf of a consumer; and
- State and Territory renewable energy policies. For example the Australian Capital Territory and South Australian Governments have committed to achieving targets of 90 and 33 per cent, respectively, of electricity generated by renewable energy by 2020.

**Questions:**

*How does the RET interact with other government policies that have, or will have, an impact on the operation of the RET, or that impact on renewable energy or energy markets more generally? What can be done to improve the efficiency and effectiveness of these interactions in delivering intended policy objectives?*

## **5. REDUCING THE ADMINISTRATIVE BURDEN OF THE RET**

The RET places administrative requirements on various parties participating in the scheme. The Government is committed to reducing red tape across the economy and this review will investigate opportunities to reduce the administration and compliance costs of the RET.

A renewable energy power station participating in the LRET must submit an application for accreditation. Once accredited, it must submit electricity generation data and a Standing Notice for the power station whenever it creates LGCs. An annual Electricity Generation Return must be submitted to provide an update on power station details, information on annual electricity generation and confirmation of compliance with planning and approval requirements.

Small Generating Units are eligible to create STCs under the SRES if the system is new and its components are listed in the CEC list of accredited components and the installers are accredited by the CEC. SWH and air source heat pumps are eligible if the system is new and listed in the Register of SWH managed by the CER. Electrical safety matters are administered by the relevant state or territory Government and systems receiving support under the RET must meet all relevant state, territory and local Government laws and regulations. The CER requires compliance statements by installers that demonstrate compliance with the relevant legislation.

Businesses undertaking EITE activities may apply to the CER for a partial exemption from LRET and SRES liability. An eligible EITE business is required to annually complete a PEC application and provide an audit report.

Liable entities under the RET are required to submit annual Energy Acquisition Statements which advise the CER of the amount of electricity purchased and any PECs applicable to that compliance year. Compliance under the LRET involves an annual surrender of LGCs, while the SRES requires STCs to be surrendered each quarter.

**Question:**

*Can the administrative arrangements of the RET be simplified? If so, how can they be simplified and what would be the risks of doing so?*

## **6. OTHER ISSUES FOR THE REVIEW**

### **6.1 Eligibility of technologies**

The *REE Act* defines the renewable energy sources eligible under the LRET. Power stations that generate electricity solely from fossil fuels are not eligible, nor are energy efficiency and heat recovery activities. Currently the only technologies that are eligible under the SRES are small-scale solar, wind and hydro generation units and solar water heater or heat pump installations that displace electricity.

**Questions:**

*Should any other energy sources be included in the LRET? Should any non-renewable (but low emissions) energy sources be included?*

*Should any new small-scale generation technologies be eligible under the SRES?*

*Should any new displacement technologies be eligible under the SRES?*

## **6.2 Frequency of reviews**

The Government has introduced legislation to repeal the carbon tax from 1 July 2014. This package includes proposed amendments to the *REE Act*, which retain the requirement for two-yearly reviews of the RET to be initiated by the relevant Minister.

**Question:**

*What should be the frequency of statutory reviews of the RET?*

## **6.3 Native forest wood waste**

The Government is committed to the reintroduction of wood waste derived from native forest as an eligible renewable energy source under the LRET. This review will consider the issues to be addressed in implementing this commitment.

**Question:**

*What administrative and regulatory arrangements should be put in place to ensure that the reinstatement of native forest wood waste is consistent with the sustainable management of native forests?*

## **ATTACHMENT A: RENEWABLE ENERGY TARGET REVIEW TERMS OF REFERENCE**

### **Background**

The Renewable Energy Target (RET) scheme, comprised of the large-scale and small-scale schemes, is aimed at increasing renewable energy generation and reducing greenhouse gas emissions from the electricity sector. It is designed to deliver the equivalent of 20 per cent of Australia's electricity from renewable sources by 2020.

### **Scope of the review**

The review is to examine the operation and costs and benefits of the *Renewable Energy (Electricity) Act 2000* ('the Act') and related legislation and regulations, and the RET scheme constituted by these instruments. This includes considering:

1. the economic, environmental and social impacts of the RET scheme, in particular the impacts on electricity prices, energy markets, the renewable energy sector, the manufacturing sector and Australian households;
2. the extent to which the formal objects of the Act are being met; and
3. the interaction of the RET scheme with other Commonwealth and State/Territory policies and regulations, including the Commonwealth Government's commitment to reduce business costs and cost of living pressures and cut red and green tape, and the Direct Action policies under development.

The review should provide advice on:

4. whether the objective of the RET scheme, to deliver 41,000 gigawatt hours (GWh) and small scale solar generation by 2020, is still appropriate;
5. the extent of the RET's impact on electricity prices, and the range of options available to reduce any impact while managing sovereign risk;
6. the operation of the small-scale and large-scale components of the RET and their interaction;
7. implications of projected electricity demand for the 41,000 (GWh) target; and
8. implementation arrangements for any proposed reforms to the RET, including how to manage transition issues, risks and any adjustment costs that may arise from policy changes to the RET.

The review is also to consider the Government's election commitment to reinstate native forest wood waste as an eligible renewable energy source.

### **Process**

The review is to be led by a panel of experts appointed by the Ministers for Industry and the Environment, supported by a secretariat in the Department of the Prime Minister and Cabinet.

The panel is to undertake public consultations, seek submissions and provide a report to the Prime Minister and the Ministers for Industry and the Environment by mid-2014.

## **ATTACHMENT B: CONSULTATION PAPER ON THE PROPOSED APPROACH TO KEY MODELLING ASSUMPTIONS**

This paper outlines the proposed approach to quantifying the key assumptions that will underpin electricity market modelling to be commissioned to support the current review of the Renewable Energy Target (RET) scheme and the Government's response.<sup>1</sup>

Views are sought from interested parties on these assumptions and on any other assumptions and/or approaches that should be considered. The submissions process is explained on page 2 of this Call for Submissions document. Submissions must be received by 17 April 2014.

This paper and consultation process is separate to the broader consultation process to be undertaken by the RET Review Expert Panel for the Review.

### **Introduction**

The RET scheme is designed to ensure that 20 per cent of Australia's electricity generation will come from renewable energy sources by 2020. The RET legislation mandates that a review of the scheme and its enabling legislation and regulations must be conducted every two years. The Government has announced the arrangements for the 2014 review, which is to be completed by mid-2014. The terms of reference and information on the review arrangements are available at: [www.retreview.dpmpc.gov.au](http://www.retreview.dpmpc.gov.au).

Modelling and analysis will be an important input to the Review. It will inform evaluation of the performance of the RET against its objectives; its economic impacts; and the costs and benefits of potential changes to the scheme. It will provide quantitative estimates of important variables, such as wholesale and retail electricity price impacts, associated with changing the RET scheme design.

A Request for Tender has been issued for detailed electricity market modelling and analysis. Feedback through this consultation will be an input to the finalisation of the key modelling assumptions to be used by the successful tenderer.

### **Proposed approach to key modelling assumptions**

The approach to the key modelling assumptions as proposed below is based on the most recent electricity sector modelling conducted for the Australian Government.<sup>2</sup>

#### ***Electricity demand***

Future electricity demand levels and profiles are used to determine the quantity and type of electricity generation required over time and at different locations, seasons and times of day.

It is proposed that a range of possible outcomes for future energy demand will be derived from initial demand levels and annual growth rates. These demand levels and growth rates will be based on the most recent historical data and forecasts by the relevant market operators - the Australian Electricity Market Operator (AEMO) for the National Electricity Market (NEM) and the Independent Market Operator (IMO) for the main South-west Western Australian

---

<sup>1</sup> On 17 February 2014 the Government announced a review of the RET scheme, to be undertaken in 2014 by an independent panel of experts led by Dick Warburton AO LVO and reporting to the Government by mid-year

<sup>2</sup> ACIL Allen Consulting, *Electricity Sector Emissions: Modelling of the Australian Electricity Generation Sector*, Sep 2013

market - as well as the Treasury's longer-term projections.<sup>3</sup> The Treasury projections would provide a central estimate while the upper and lower estimates would be based on the AEMO and IMO forecasts. Demand levels in smaller networks, and for embedded and off-grid generation, would be based on a recent report by the Bureau of Resource and Energy Economics (BREE).<sup>4</sup>

The growth rates will incorporate an 'autonomous energy efficiency improvement' parameter averaging 0.8 per cent per year to 2025 declining to 0.5 per cent per year. There are a range of plausible settings for this parameter (which applies to business inputs and household use of electricity), with the literature suggesting 1.5 per cent per year would be at the high end. Treasury has taken a conservative midpoint and notes the declining marginal rate of energy efficiency improvement shown in the research where gains may be made early and then slowing through time.

In finalising the demand profile with the modeller, consideration will be given to recently announced closures of large energy users (e.g. in the aluminium/alumina refineries, and car manufacturing sectors) and assessment of the impact on future demand.

It is intended that the electricity sector modelling would make adjustments to the initial demand profile by simulating the market's response to any price impacts that may arise from changes to the RET.

The modelling exercise is also intended to estimate future seasonal and time-of-day variations in demand, based on market operator data and forecasts.

It is proposed that sensitivity analyses will be conducted using high and low electricity demand levels based on a simple variation in electricity demand consistent with the AEMO's most recent forecasting report for the NEM.<sup>5</sup> This approach using AEMO data would be applied to the other networks in Western Australia, Northern Territory and Queensland if equivalent data is not able to be sourced for these networks.

### ***Electricity generation technology costs***

Electricity generation technology cost profiles are used to determine which generation technology will provide new generation capacity. It is proposed that these costs will be based on the 2013 update to the Australian Energy Technology Assessment (AETA) published by BREE.<sup>6</sup> Modifications may be considered for selected technologies, based on comments received during consultations and input from the successful tenderer.

Sensitivity analyses may be conducted using more and less rapid reductions in future generation technology costs for selected technologies.

### ***Natural gas prices***

Natural gas prices affect the competitiveness of gas-fired electricity with other generation sources. It is proposed that forecast natural gas prices will be based on information held by the successful tenderer along with latest Treasury estimates which are based on industry output

---

<sup>3</sup> The approach is outlined in ACIL Allen 2013, pp6-7.

<sup>4</sup> BREE, Beyond the NEM and the SWIS: 2011-12 Regional and Remote Electricity in Australia, Oct 2013.

<sup>5</sup> The approach is outlined in ACIL Allen 2013, pp56-57.

<sup>6</sup> The BREE technology reports are available at <http://www.bree.gov.au/publications/australian-energy-technology-assessments>

and energy demand growth rates.<sup>7</sup> The price path would be finalised in consultation with Treasury and would incorporate any relevant information from the *Study on the Eastern Australian Domestic Gas Market* undertaken by the Department of Industry and BREE and released for consultation on 3 January 2014.<sup>8</sup> The prices will include adjustments, such as for transport costs, to reflect different conditions in each gas-fired generation location.

Sensitivity analyses may be conducted using high and low gas price paths finalised in consultation with the modelling consultant and would be consistent with the Treasury's estimates.

### **Coal prices**

Coal prices affect the competitiveness of coal-fired electricity with other generation sources. It is proposed that domestic coal prices will be based on information held by the successful tenderer about prices applicable in the four core coal generating regions: Queensland, New South Wales, Victoria and south Western Australia, along with Treasury's longer-term estimates, and finalised in consultation with the Treasury.

Sensitivity analyses may be conducted using high and low coal price paths finalised in consultation with the modelling consultant and would be consistent with the Treasury's most recent estimates.

### **Parameters relevant to the Government's energy-related climate policies**

The Government is repealing the carbon tax and implementing its Direct Action Plan, including the Emissions Reduction Fund and solar programmes. These changes have potential impacts on the electricity sector, including on electricity demand and the mix of generation technologies.

It is proposed that the impacts on the electricity sector of repealing the carbon tax will be incorporated into the modelling by adapting *No Carbon Price* scenario data from the Treasury to account for carbon tax impacts from 1 July 2012 to 30 June 2014.

As the Emissions Reduction Fund (ERF) design is still being developed, it is too early to estimate the ERF's impacts for inclusion in the RET scheme modelling. However, should relevant information become available prior to the RET modelling being finalised, it would be included where practicable.

---

<sup>7</sup> Key sources utilised by Treasury include BREE, ABARES, Wood McKenzie and the International Energy Agency World Energy Outlook (IEA WEO).

<sup>8</sup> The details and outputs of this study are available on the Department of Industry website: <http://www.industry.gov.au/Energy/EnergyMarkets/Pages/GasMarketDevelopment.aspx>