

Research Note 2-2013

May 2013

Renewable Energy Target – the numbers explained

This Research Note has been prepared by Green Energy Markets and explains the numbers behind the Renewable Energy Target (RET) and how the target relates to renewables market share.

The manner in which the mandated target, which is expressed in GWh, corresponds to renewables market share has come under scrutiny given reductions in electricity demand. In particular, it is expected that renewable generation will exceed 20 per cent market share by 2020.

The Government's policy commitment is to have a minimum of 20 per cent of Australia's electricity supply come from renewable sources by 2020. This was clearly articulated in Minister Combet's letter to the Climate Change Authority relating to the RET Review, an extract of which is included below:

The RET scheme, as an integral part of the Government's plan, is designed to deliver the Government's commitment that the equivalent of at least 20 per cent of Australia's electricity supply will come from renewable sources by 2020. Renewable energy investors have been assured by the Government of our ongoing commitment to this target, to provide confidence for their investment decision making.

There is confusion over how the RET has been calculated. In particular, how the 20 per cent target has been converted into a fixed target and how this converts into the number of certificates that need to be surrendered by Liable Parties. This Research Note explains how the numbers fit together and discusses some of the implications of the reduction in electricity consumption.

Key points:

- The policy commitment is for at least 20 per cent renewables market share by 2020. At the time the RET was split in 2010 (then agreed by all major political parties), it was recognised that renewables would account for 22 per cent market share by 2020.
- Renewables share of total generation is expected to increase from 10.6 per cent in 2011 to 22.5 per cent by 2020. Market share figures are determined with reference to gross electricity generation (across all of Australia);
- The Bureau of Resource and Energy Economics in their latest projections also estimate that renewables will account for 22 per cent of electricity generation in 2019/2020;
- Significant growth in off-grid generation needs to be incorporated in any consideration of renewables market share, this is often excluded; and
- Renewable output from pre-existing generators (in place prior to the start of the RET) has reduced so that only 13,000 GWh of renewable generation does not create certificates as opposed to the 15,000 GWh that was initially estimated to be in place.

In this Research Note we address the following issues:

1. How the initial target was determined
2. How the split of the RET resulted in an expanded renewables market share
3. How the RPP and STP (proportion of certificates that need to be surrendered) are determined
4. The factors that need to be considered in assessing the 20 per cent renewables target
5. The projected level of power generation
6. The future level of renewable energy supply
7. Renewables market share

1. Explaining how the initial 45,000 GWh target determined

The Australian Labor Party first committed to extend the RET from 9,500 GWh in 2020 to 45,000 GWh as part of their 2007 election policy platform:

As part of Labor's 2020 vision for a clean renewable energy future, Federal Labor will:

- Ensure the equivalent of at least 20 per cent of our electricity supply – or approximately 60,000 GWh – is generated from renewable sources by 2020.
- Increase the Mandatory Renewable Energy Target (MRET) to 45,000 GWh to ensure that together with the approximately 15,000 GWh of existing renewable capacity, Australia reaches Labor's 20 per cent target by 2020.

Labor's 2020 target for a renewable energy future- Election 2007 - Policy Document (October 2007)

The above methodology as broadly applied, results in the following:

1. Projected electricity generation requirements in 2020	300,000 GWh
2. Renewable generation to achieve 20 % market share	60,000 GWh
3. Less Pre-existing renewables in 1997 (baseline generators)	(15,000 GWh)
4. New renewable generation (the RE Target)	45,000 GWh

On this basis, if the RET supported an additional 45,000 GWh of renewable generation then 20 per cent market share would be expected by 2020. It is not clear from where the 300,000 GWh was derived. ABARE's¹ most recent generation projection at the time (December 2006) was for generation of 342,000 GWh by 2019/20 (refer to Table 4).

2. The split of the RET into large-scale and small-scale schemes expanded renewables market share

With effect from 1 January 2011, the RET was split into the small-scale scheme (eg. residential scale solar) which was uncapped and a large-scale scheme with a defined target of 41,000 GWh by 2020. It is not clear what approach was used to allocate the 45,000 GWh target between large-scale and small-scale schemes. A report prepared by MMA Consulting (MMA) for the Government dated May 2010 appears to be the basis for the allocation where MMA projected that small-scale certificate creation would reduce to 6 million by 2016.

It was clearly understood in June 2010 when the RET was split that more than 20 per cent renewables market share would be achieved. Minister Combet's Second Reading Speech on introduction of the amending legislation (extract included below) clearly identified that the level of renewable energy would amount to 22 per cent by 2020.

Independent modelling released by the Government today shows the changes are expected to deliver more renewable energy than the original 20 per cent target, reaching around 22 per cent by 2020, which will help transform the electricity sector and support investment in both large and small-scale renewable energy projects. Further, the enhanced RET is expected to drive up to \$19 billion in total investment in large-scale renewable energy generation in the period to 2030. (Minister Combet, Second Reading Speech, June 2010)

3. Explaining how the RPP and STP are calculated

The scheme's implementation has been through the requirement for electricity retailers and other liable parties to surrender certificates based on their level of electricity sales.

¹ Australian Bureau of Agricultural and Resource Economics (ABARE) subsequently changed its name to Bureau of Resources and Energy Economics (BREE)

Liabe parties must separately surrender Small-scale Technology Certificates (STCs) and Large-scale Generation Certificates (LGCs) to meet their liability under the scheme. Energy intensive trade exposed businesses could apply for partial exemption from liability and would be issued with Partial Exemption Certificates (PECs). The Renewable Power Percentage (RPP) and Small-scale Technology Percentage (STP) represent the proportion of a Liabe Parties electricity sales (or avoided purchases in the case of self-generation) that need to be surrendered as certificates.

Table 1. Determining the STP and RPP for 2012 and 2013

	LGC Liability	STC Liability	Total Liability
Target for 2012	16,763 GWh	44,786 GWh	61,549 GWh
Relevant Percentage	9.15 %	23.96 %	33.26 %
Total Relevant Acquisition	183,202 GWh	186,920 GWh	186,920 GWh ²
Estimate for PECs			28,860 GWh ³
Total Acquisition			215,780 GWh
Target for 2013	19,088 GWh	35,700 GWh	54,788 GWh
Relevant Percentage	10.65 %	19.70 %	30.35 %
Total Relevant Acquisition	179,230 GWh	181,218 GWh	179,230 GWh ⁴
Estimate for PECs	30,848 GWh	28,860 GWh	30,848 GWh
Total Acquisition	210,078 GWh	210,078 GWh	210,078 GWh

Total Acquisitions (against which overall liability or exemption is established) for 2012 amounts to 215,800 GWh and 210,078 GWh for 2013 (refer to Table 1). These figures do not include the impact of small-scale solar, and grid-connected small-scale generation which would be seen by the electricity system as reductions in consumption. In addition, there will be considerable off-grid power consumption that is not covered by the main grids.

4. Factors and issues we need to consider when assessing the 20 per cent renewables target

- Electricity generation has reduced over the last four years. In the National Electricity Market (NEM) electricity consumption has reduced by 5.5 per cent (11,400 GWh) from 2008 to 2012⁵. More than half of this reduction was found to be attributable to solar and energy efficiency activities supported by Government market based schemes⁶.
- Total electricity generation in Australia also includes 'off-grid' electricity generation, particularly in the mining industry. "Off-grid" use is difficult to determine, however given the growth in mining investment we expect that off-grid use will increase at a faster rate than electricity consumed on the main grids.
- A number of large electricity consumers, "energy intensive, trade exposed sectors" have obtained partial exemption from meeting the target. We have used the estimate included in the ACIL Tasman report "Achieving a 20 per cent RET" for TRUenergy of 28,860 GWh for STCs which implies a slightly higher level of PECs for LGCs. We have assumed that the level of PECs remains unchanged from 2013⁷;
- Not all the initial renewable generation in existence at the start of the RET scheme is still in place and some of these pre-existing projects (largely hydro) produce significant levels of RECs. Over the five years to 2011 we estimate that an average of 13,000 GWh of renewable generation was produced that did not create certificates. This is 2,000 GWh lower than the initial 15,000 GWh.

² The STC Relevant Acquisition figures have been used

³ Estimate based on ACIL Tasman report for TRUenergy as part of their submission to the RET Review

⁴ The LGC Relevant Acquisition figures have been used

⁵ Green Energy Markets Research Note 1-2013

⁶ Green Energy Markets report – "Impact of market based measures on NEM power consumption", June 2012 for the REC Agents Association and Energy Efficiency Certificate Creators Group.

⁷ ACIL Tasman assume that the PECs figure reduces over the next few years and then recovers after 2020.

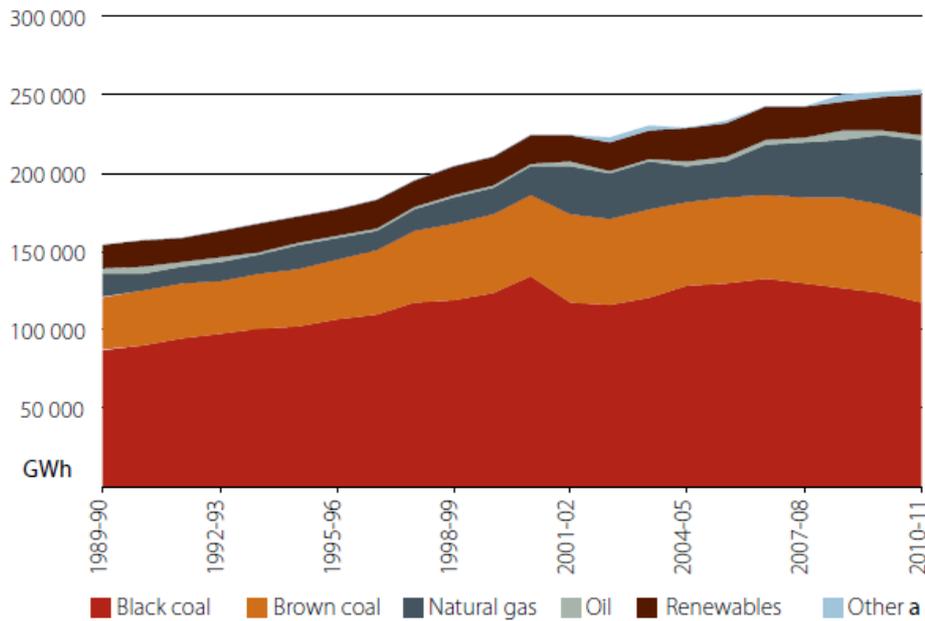
- Solar PV and solar water heater (SWH) systems create deemed certificates ie. they produce the certificates 'up front' and will be in use thereby reducing net power consumption for some time after 2020. Distributed renewable energy technologies such as solar PV and SWH are seen by the electricity system as a reduction in demand. As a result to get a true picture of the contribution that renewables are making the apparent avoided electricity demand from small-scale solar needs to be added back to demand and counted as renewable energy generation.

5. Considering what future power consumption might be

- Projecting electricity generation is fraught with difficulty. Electricity generation has tended to increase with continued population growth and continued growth in the economy. Power consumption will also be impacted by weather, with milder weather over the last few years likely to be contributing to lower consumption. We have also seen closure of some manufacturing facilities (eg. refineries and aluminium smelters). Offsetting this will be increased demand from mining, LNG and gas processing facilities as well as for charging electric vehicles.
- We can expect the continued contribution of solar PV, SWH as well as distributed generation which is considered by the market as a reduction in the level of generation that needs to be met.
- There are several organisations that develop electricity generation projections. The Commonwealth Bureau of Resources and Energy Economics (BREE) and The Australian Energy Market Operator (AEMO), both publish electricity projections. The AEMO projections are only for the interconnected National Electricity Market whereas BREE's projections are for all of Australia, including off-grid.
- BREE have included an analysis of electricity generation by fuel in their 2012 Energy Update (Figure 1). This showed that in 2010/11 a total of 252.6 TWh was generated across Australia of which 25.6 TWh was renewables, accounting for 10.1 per cent of generation.
- BREE in their latest projections (December 2012 included as Table 2) do not include estimates for 2019/20 as they did in the previous year (Table 3). BREE provide estimates for total generation to 2034/35 which is 7 per cent lower than their previous report. We have pro-rated their current forecast to arrive at comparable figure of 288 TWh for 2019/20. This represents an average annual growth rate of 1.47%.
- BREE in their latest projections also estimate that renewables will account for 22 per cent of electricity generation in 2019/2020 (refer to footnote in Table 2) ;
- BREE's predecessor the Australian Bureau of Agricultural and Resource Economics (ABARE) had projected back in December 2006 that electricity generation for 2019/20 was going to be 342 TWh, some 19 per cent higher than their current projection of 288 TWh (Table 4).
- The Australian Energy Market Operator (AEMO) in their 2012 Statement of Opportunities, which covers the south eastern interconnected grid has projected that electricity generation will increase from 195.5 TWh in 2010/11 to 216.7 TWh in 2019/20, a growth rate of 1.13 per cent per annum (Table 5).

Figure 1. BREE Historical Electricity Generation by Fuel (Extract from Bureau of Resources and Energy Economics, 2012 Australian Energy Update - August 2012)

Figure 3: Australian electricity generation, by fuel type



Source: 2012 AES Table O.

a Includes multi-fuel fired power plants.

Table 2. BREE Electricity Generation Projections (Extract from Bureau of Resources and Energy Economics, Energy Projections to 2049/50 (December 2012)

Table 11: Electricity generation, by energy type (TWh)

Energy type	2012-13	Level		Share		Average annual growth 2012-13 to 2049-50
		2034-35	2049-50	2012-13 %	2049-50 %	
Non-renewables	219	194	183	87	49	-0.5
Coal	153	104	48	60	13	-3.1
black coal	109	100	48	43	13	-2.2
brown coal	44	5	0	17	0	
Gas	62	85	136	25	36	2.1
Oil	4	4	0	2	0	-8.6
Renewables	34	130	194	13	51	4.8
Hydro	17	17	17	7	5	0.0
Wind	14	64	78	6	21	4.7
Bioenergy	2	7	7	1	2	3.9
Solar	1	25	62	<1	16	12.3
Geothermal	0	17	29	0	8	
Total a	253	324	377	100	100	1.1

The share of renewable generation in total generation in 2019-20 is 22 per cent, above the target set by the RET scheme.

Table 3. BREE Electricity Generation Projections (Extract from Bureau of Resources and Energy Economics, Energy Projections to 2034/35 (December 2011))

Energy type	Level			Share		Average annual growth
	2008–09 TWh	2019–20 TWh	2034–35 TWh	2008–09 %	2034–35 %	2008–09 to 2034–35 %
Non-renewables	227	248	265	93	76	0.6
Coal	182	178	134	74	38	-1.2
black coal	129	125	114	53	33	-0.5
brown coal	53	53	20	21	6	-3.7
Gas	40	64	126	16	36	4.5
Oil	5	5	5	2	2	0.0
Renewables	18	63	84	7	24	6.0
Hydro	12	13	13	5	4	0.2
Wind	4	36	49	2	14	10.1
Bioenergy	2	4	4	<1	1	3.5
Solar	<1	4	5	<1	1	13.6
Geothermal	0	5	13	0	4	-
Total	245	310	348	100	100	1.4

a These figures represent total gross electricity generation output, covering both on-grid and off-grid principal generators, small generators, and non-scheduled generators. Numbers in the table may not add up to their totals due to rounding.

The figures for 2008–09 presented in this table may not be identical to actual historical data published in ABARES' Australian Energy Statistics. This is a reflection of the different classification systems.

Table 4. ABARE Electricity Generation Projections (Extract from Australian Bureau of Agricultural and Resources Economics, Energy Projections to 2029/30 (Dec 2006))
table 11 electricity generation in Australia, by fuel

	generation				average annual growth	
	2004-05 TWh	2010-11 TWh	2019-20 TWh	2029-30 TWh	2004-05 to 2010-11 %	2004-05 to 2029-30 %
black coal	141	154	180	207	1.5	1.5
brown coal	53	56	64	72	1.1	1.3
oil	4	4	4	4	0.8	0.3
natural gas	36	48	66	92	5.1	3.8
renewables	19	24	28	33	4.4	2.3
hydroelectricity	16	17	18	18	0.8	0.5
biomass	1	2	4	5	11.7	7.3
biogas	0	2	2	2	35.5	8.2
wind energy	1	4	4	7	19.3	7.0
total	252	287	342	408	2.2	1.9

Table 5. AEMO Electricity Generation Projections (Extract from 2012 Statement of Opportunities)

Figure 2-4 — Comparison of the NEM-wide energy projections (low, medium, and high scenarios)

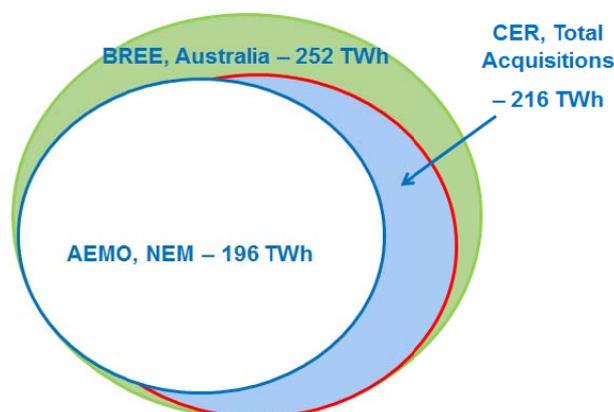
Year	Actual (GWh)	2012 low scenario (GWh)	2012 medium scenario (GWh)	2012 high scenario (GWh)	2011 low scenario (GWh)	2011 medium scenario (GWh)	2011 high scenario (GWh)
2005–06	191,089						
2006–07	195,173						
2007–08	196,820						
2008–09	197,908						
2009–10	197,944						
2010–11	195,791						
2011–12 (estimate)	191,125				201,100	202,598	206,452
2012–13		188,018	191,076	192,826	205,124	209,429	214,671
2013–14		189,725	194,492	199,303	208,679	214,733	221,158
2014–15		192,205	199,388	206,358	212,829	219,595	228,948
2015–16		195,498	205,053	214,888	216,870	225,590	236,575
2016–17		197,872	209,078	220,906	219,931	230,487	244,598
2017–18		200,170	212,487	225,485	222,588	233,817	249,524
2018–19		200,641	214,658	228,717	225,093	237,872	256,555
2019–20		201,099	216,744	231,237	227,880	242,645	264,852
2020–21		202,516	219,573	234,856	229,849	247,973	272,078
2021–22		203,194	221,654	237,723			

Relationship between Electricity Generation and Total Acquisitions

The Total Acquisition figure used by the Clean Energy Regulator (CER) to determine the STP and RPP includes all the main electricity grids and certain self-generators but excludes most off-grid power use. Total Acquisitions is also measured at a different point than that used by AEMO and BREE. AEMO and BREE use total generation (ie. at generator terminals) whereas for Total Acquisitions under the CER, it is measured on the basis of settlement statements which are effectively at the distribution system - *“if the electricity is acquired from AEMO or IMO – the amount worked out on the basis of metering data used for AEMO or IMO settlement statements”*⁸.

This means that the CER figure for Total Acquisitions excludes power station auxiliary use, transmission losses, as well as off-grid power consumption. A graphical representation of the power generation figures for 2010/11 is included as Figure 2.

Figure 2. Electricity Generation Comparison for 2010/11



⁸ Extract from the CER website explaining the calculation of Liable Parties surrender requirements

Table 6. Electricity Generation Projections

Electricity Generation	2010 /11 TWh	2020 TWh	Growth to 2019/20 per cent per annum
Total Australia (BREE Scope)	252.0	288.0 ⁹	1.47%
AEMO (NEM)	195.8	220.7 ¹⁰	1.13%
Non NEM/Off-grid/Other ¹¹	56.2	67.3	1.86%
AEMO as proportion of BREE	77.7 %	76.6 %	
CER – Total Acquisitions	215.8	230.0 ¹²	1.30%
CER as proportion of BREE	85.6%	79.9%	

The difference in scope between AEMO and BREE relate to power consumed in the main grids of WA and Northern Territory as well as considerable levels of self-generation and off-grid supply across Australia. This residual figure amounted to 56.2 TWh in 2010/11 and an implied 1.9 per cent growth rate to 2020 appears reasonable given the significant levels of mining investment and development currently taking place nation wide.

6. Determining Renewable Electricity production

There are a number of components that need to be considered in determining the total level of renewable generation to meet the target and these are considered below:

- **Pre-existing renewable electricity generation** – when the RET was introduced pre-existing generators also referred to as “baseline generators,” (those in operation prior to 1 January 1997) were only able to produce certificates when their output exceeded their 1997 baseline. The baseline level of generation from these power stations when the RET started was 16,600 GWh per annum¹³. Since this time however a number of these generators have been de-commissioned, some have expanded and a number have generated considerably less due to a reduction in available fuel (landfill gas and hydro).

We have undertaken an extensive analysis of renewable electricity generation and certificate creation under the RET by power station. Baseline generation as published by the CER, amounted to a total of 16,600 GWh, 15,000 of which (90 per cent) was from hydro generation. Of the Hydro generation 13,900 GWh was scheduled with actual generation data available from the NEM. We have analysed output for these scheduled generators over the five years to 2011 with results shown in Figure 3.

Renewable power generation has been analysed over the five years to 2011 and we have compared it to certificate creation and have found that on average 13,000 GWh of renewable generation does not create certificates ie. represents actual base-line generation. A number of baseline generators have exceeded their base-lines in some years, however, there had been a material reduction in the level of water inflows into storage over 2005-2009 period. As a result, hydro generation has been considerably lower than historical levels. For the purpose of our analysis, we have assumed that the average annual renewable generation that does not create certificates amounts to 13,000 GWh from 2011.

⁹ We have based this on the BREE December 2012 projections and applied a similar reduction level for 2019/20 as in their earlier 2011 report.

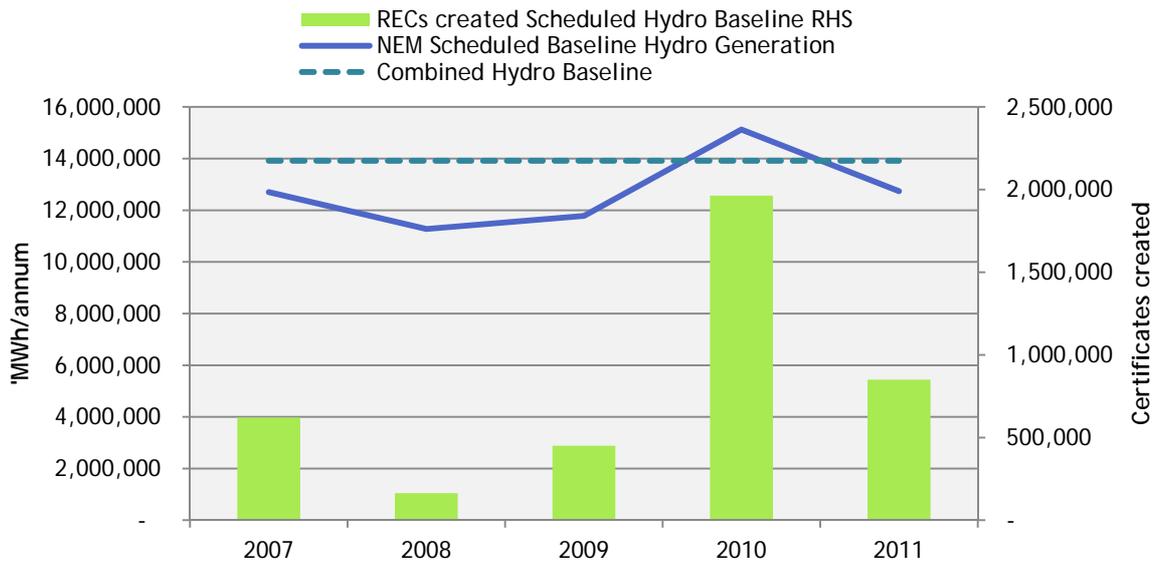
¹⁰ Is an Average of 2019/20 of 219.6 TWh and 2020/21 of 221.7 TWh

¹¹ Determined as a residual by subtracting NEM generation from BREE’s figure for Australia as a whole

¹² Increase to 2020 based on average of AEMO and BREE projected increase (1.72 per cent)

¹³ 16,600 GWh is the combined baseline for all pre-existing renewable generators registered with the CER

Figure 3. Scheduled Baseline Hydro Generation



- Mandated RET generation** – in determining the level of renewable power generation supported by the RET we have simply assumed the RET target excluding the waste coal mine gas provisions. Certificates are created by eligible renewable generators based on their gross output (at the generator terminals) adjusted by the marginal transmission loss factor. There is a significant variation in the marginal transmission loss factors applied to renewable generators in the NEM and can range from 0.81 to 1.15. South Australian and Tasmanian wind farms tended to have marginal loss factors less than 1.0 and wind farms (and other renewable generators) in most other states had marginal loss factors closer to or greater than 1.0. AEMO marginal loss factors for a range of generators for 2012/13 are set out below:

○ Windy hill – wind - (QLD)	1.15
○ Mccarthur – wind – (VIC)	1.01
○ Waubra – wind – (VI)	1.03
○ Wattlepoint – wind – (SA)	0.81
○ Hallett wind farms – (SA)	0.97
○ Capital wind farm – (NSW)	0.985
○ Gunning wind farm – (NSW)	0.985
○ Bluff Point wind farm – (TAS)	0.897
○ Bagasse cogeneration – Townsville (QLD)	1.120

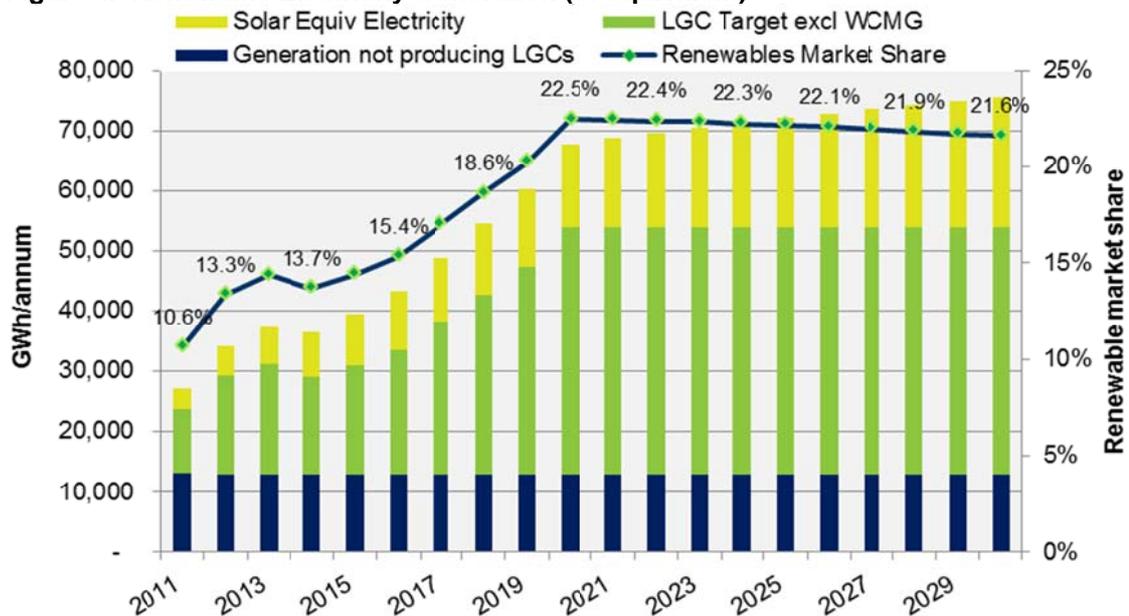
For the purpose of our analysis, we have assumed that the loss factors balance each other out and the average loss factor is 1.0. This means the level of certificates created is a reasonable representation of the gross generation at the generator terminals. As a result certificates created can be directly related back to the BREE (and AEMO) gross generation projections to determine renewables market share.

- Solar PV and SWH reducing power consumption** – generation from solar PV installations and avoided electricity by the installation of SWH (that displaces an electric water heater system) is seen by the electricity system as reduced consumption. As a result we need to add back the level of generation (or avoided generation in the case of SWH) to arrive at equivalent total generation for Australia as a whole. In our analysis we have made the following assumptions:
 - level of PV system installations in 2012 is 335,000 reducing to 240,000 in 2013, 230,000 in 2014, 220,000 in 2015 and then continues at a rate of 200,000

- systems per annum until 2020¹⁴ It then reduces by 5 per cent per annum as the level of deeming reduces¹⁵;
- Average PV system size of 3.02 kW per system and generation equivalent to solar zone 3 of 1.382 MWh per annum;
- Level of SWH installation of 80,100 systems in 2013 and then assumed to reach 100,000 from 2016 to 2020 and then reducing at 5 per cent per annum as the level of deeming reduces;
- Each SWH system is assumed to save the equivalent of 3 MWh of electricity and we have assumed that until 2019 an average of 75 per cent of systems installed are replacing an electric water heater system and from 2020 this reduces to 50 per cent; and
- As solar PV and SWH systems are behind the meter activities a loss factor of 1.00 has been applied (ie. there are no electricity losses).

Based on the above methodology renewable power generation is expected to increase to 54,000 GWh by 2020 which comprises 41,000 GWh from the mandated target and 13,000 GWh from pre-existing generation that does not claim certificates. When we allow for the avoided electricity generation from solar PV and SWH of 13,900 GWh in 2020, total renewable generation (or its equivalent) amounts to 67,853 GWh in 2020. The contribution from solar PV and SWH keeps increasing as more systems are deployed (Figure 4).

Figure 4. Renewable Electricity Generation (or equivalent)



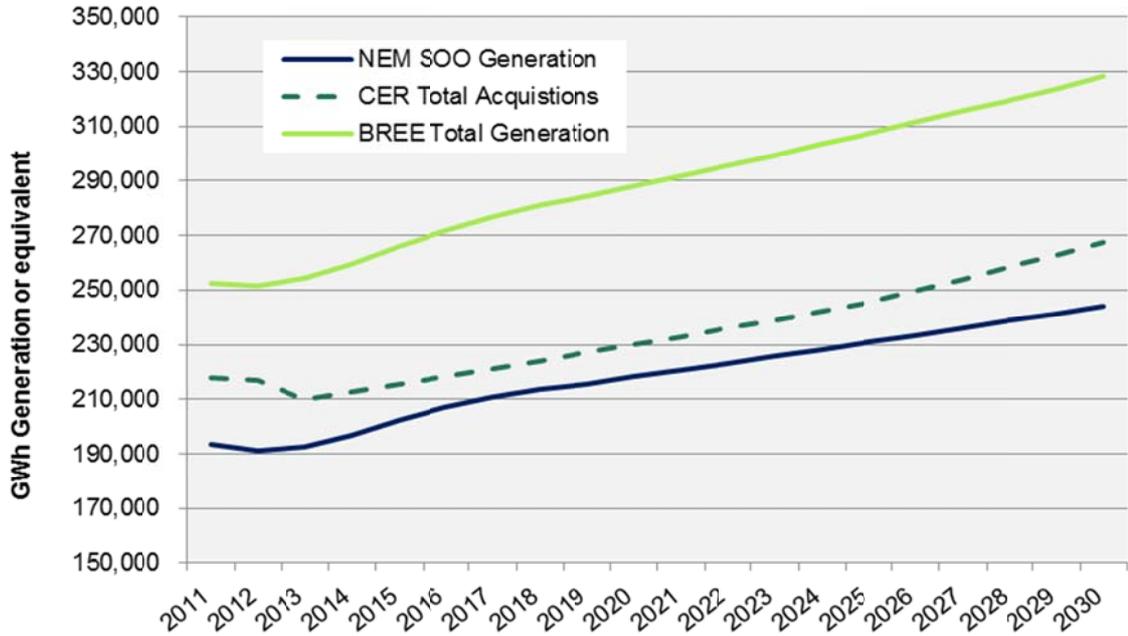
7. Determining Renewable Electricity market share

We have used the BREE electricity generation methodology and projections in determining renewables market share. BREE's projections are the most complete and cover all of Australia's generation. A comparison of BREE's projections with the NEM SOO and the CER's Total Acquisition figures is included as Figure 5.

¹⁴ Based on Green Energy Markets data modelling report for the Clean Energy Regulator (Feb 2013) www.greenmarkets.com.au

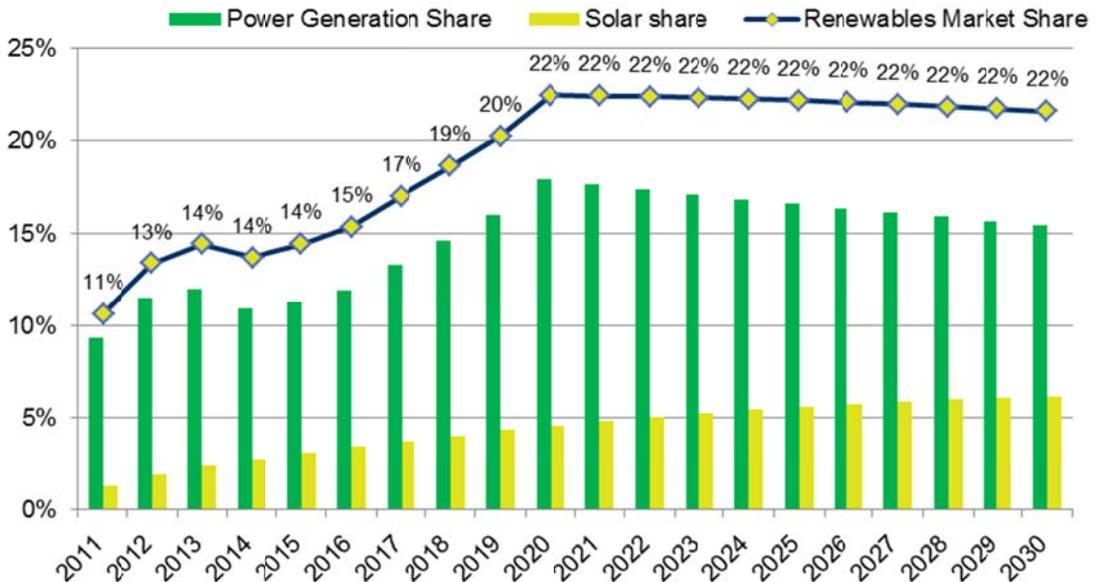
¹⁵ The Government has accepted the Climate Change Authority's recommendation to phase out the level of deeming to no more than the number of years remaining to the end of the scheme.

Figure 5. Electricity generation projections – a comparison



In determining renewables market share we have added the equivalent generation from solar PV and SWH back into BREE’s projections to come up with a projected total equivalent generation. In 2020 BREE’s projected generation was 288,000 GWh to which we add 13,900 GWh from solar PV and SWH to arrive at 301,900 GWh. Projected renewable generation amounts to 67,853 in 2020 which is an equivalent generation market share of 22.5 per cent. This is shown graphically in Figure 6.

Figure 6. Renewables market share



Implications for STP and RPP

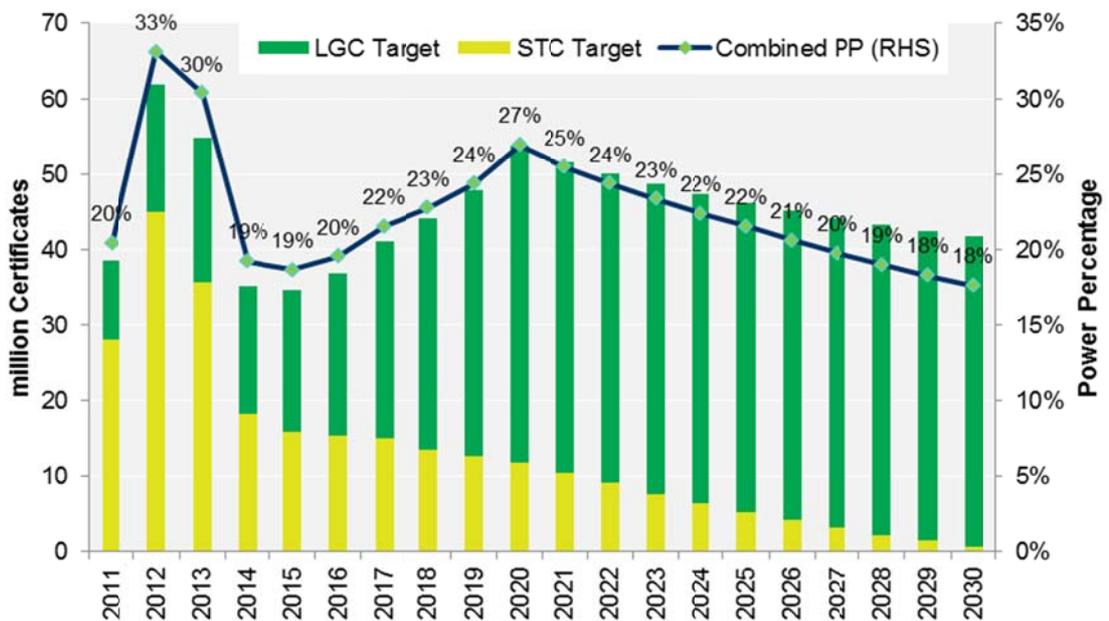
In determining Total Relevant Acquisitions to be used in setting the future RPP and STP we have increased the Total Acquisition used by the CER for 2013 of 210,400 GWh (Table 1) by

1.3 per cent per annum. This is an average of the growth rates used for BREE and AEMO's projections¹⁶.

We have incorporated a reduction in the level of deeming from 2017. As a result we have assumed a progressive reduction in the number of solar systems installed from 2021 onwards. The total level of certificates created reduces from 15.0 million per annum in 2020 to 5.2 million in 2025 and to 0.7 million in 2030. The STP reduces from a high of 23.96 per cent in 2012 to 5.9 per cent in 2020 and 2.4 per cent in 2025.

The RPP (including waste coal mine gas provisions) increases from 9.15 per cent in 2012 to 21 per cent in 2020 and then reduces to 17.3 per cent in 2030. The certificates required to be surrendered together with the combined Power Percentage (RPP added to STP) is shown diagrammatically in Figure 7.

Figure 7. Certificates to be surrendered and Combined Power Percentage (PP)



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¹⁶ BREE's projections to 2020 incorporate an annual growth rate of 1.47 per cent to 2020 and AEMO's projections incorporate a growth rate of 1.13 per cent.