14 September 2012

Anthea Harris
Chief Executive Officer
Climate Change Authority

E: submissions@climatechangeauthority.gov.au

Dear Ms Harris,

Submission on Renewable Energy Target Review Issues Paper

Origin Energy Limited (Origin) welcomes the opportunity to make a submission on the Renewable Energy Target (RET) Review Issues Paper and would be pleased to discuss any aspect of this submission with the Authority.

About Origin

Origin is a major Australasian integrated energy company focused on gas exploration, production and export, power generation and energy retailing. Listed in the S&P ASX top 20 the company has over 5,900 employees and is a leading producer of gas in eastern Australia. Origin is Australia's largest energy retailer servicing 4.4 million electricity, natural gas and LPG customer accounts and has one of the country's largest and most flexible generation portfolios with approximately 5,900 MW of capacity, through either owned generation or contracted rights. We are a significant investor in low emissions and renewable energy technologies, including gas, geothermal, wind, hydro and solar and are by far the largest retailer of green energy products such as GreenPower.

These diverse interests ensure that Origin considers policies such as the RET from a position of first-hand knowledge. This includes an appreciation of the impacts of policies on our customers, investors, employees and the community. We are highly aware of the trade-offs that can be involved in balancing the interests of these stakeholders.

Key points

- Origin has supported the RET since its inception and continues to do so. We are a significant investor in renewable energy technologies as evidenced by the recent signing of a 15 year power purchase agreement which underpins the 270 MW Snowtown II project in South Australia.
- We support the RET in the context of a package of climate change policies which should also include a price on carbon and harmonised and rationalised complementary carbon policy.
- We are concerned that the RET is becoming something that it wasn't originally intended to be. The original intention was a target of 20% renewable energy supporting multiple renewable energy technologies to strategically position Australia with a portfolio of renewable energy options for a long-term (post 2020) transition to a low carbon economy.

- In practice, the RET, and particularly the Large-scale Renewable Energy Target (LRET), has turned into a subsidy for one relatively mature technology. The current LRET is likely to result in investment in about 9,000 MW of wind generation in the period to 2020. There will be very little in the way of learning from this investment and it will be challenging in an energy market with flattening demand and when retail customers are facing significant cost increases.
- In this context, Origin recommends that the costs of the RET be comprehensively evaluated and makes the following key observations (see Table 1, below).
- The long term future of the RET should be considered in the context of a suite of climate change policy that meet carbon reduction goals at the lowest overall costs to consumers. Any continuation of the RET beyond current timeframes should only be made on this basis. Consideration should also be given to linking the RET internationally or regionally, as with the Carbon Pricing Mechanism, in order to achieve the lowest cost outcome.

Table 1: Key observations

No	Issue	Observation
1	Costs	Origin estimates a significant cost difference between the current LRET design and one that is based on a "real" 20% target in 2020. Our analysis indicates a cost saving of $25 billion over the remaining years of the scheme to 2030 expressed in nominal dollars. This comprises $20 billion based on volume and price differential and an additional $5 billion to firm up the intermittent wind generation output. We also estimate the cost of abatement under the current LRET design at over $50 per tCO2e. We recommend that the Authority undertake further detailed analysis to confirm the real costs of the RET policy as it currently stands.
2	Diversity of technologies	We support the RET developing a range of renewable energy technologies that are of strategic benefit to the Australian electricity market. In particular, we support measures that encourage emerging renewable technologies that are capable of providing baseload renewable energy. We do not support banding or other complex enhancements to the RET as such policy often has unintended consequences. The history of the multiplier for small-scale solar PV is illustrative of potential distortions that can arise. Allowing "medium-scale" solar PV systems into the LRET would be one tangible way to encourage greater diversity of access to the scheme and give the opportunity for new products to develop.
3	Small-scale Renewable Energy Scheme (SRES)	Whilst we continue to support incentives for small-scale renewable energy such as solar PV and solar hot water systems we do not support the SRES as the mechanism for this. SRES has proved to be an extremely inefficient and inequitable means to provide an up-front subsidy for small-scale technologies. Our preference would be to return to a simple and more equitable rebate system for small scale systems of up to a certain size (say 5kW). Another viable option would be to roll the SRES back into the LRET.
4	Administrative improvements	Origin also proposes a number of administrative improvements, particularly to the SRES, which are explained in Attachment A.

These issues are expanded on in the remainder of this submission.

1. Large-scale Renewable Energy Target (LRET)

Origin supports the LRET as part of a package of polices which also includes a price on carbon, support for emerging renewable energy technologies and harmonised energy efficiency policies. With a carbon price in place the RET cannot be justified on the basis of emission reductions alone, as it will necessarily cause more expensive abatement to occur. This point has been well made by a number of important reports including Garnaut[1], the Productivity Commission[2], IPART[3] and Wilkins[4]. We estimate that the cost of abatement under the current LRET design is greater than $50 per tCO2e in 2020. This estimate is based on the current market carbon intensity. The cost of abatement would rise as the market carbon intensity decreases over time.

Whilst simplistically the intent of the RET is to deploy additional renewable energy technologies, it has a more strategic policy objective. The goal was to induce a fall in the cost of a range of renewable energy technologies such that these technologies might eventually be deployed competitively in Australia, thereby allowing for a reduced reliance on fossil fuels. In this way the nation would be strategically positioned in the long term with a suite of renewable energy technologies that would be required to make deeper emissions reduction in the period after 2020[5]. As noted by Minister Combet at the time the RET was amended in 2010, the LRET "will pull through a range of technologies including wind, biomass, solar and geothermal energy."[6]We believe the LRET may need recalibration in order to better meet its original policy intent.

Origin notes the conclusion in the Issues Paper that the current LRET requirement of 41,000 GWh implies renewable generation in 2020 will be above 20 per cent of electricity supply.[7] We concur with this finding. Our internal estimates indicate that the current LRET arrangements will lead to about 26% renewable energy in 2020. The key assumptions are:

- Total Australian energy in 2020 of 245 TWh – note however that we believe this is a conservative estimate and that demand could actually be lower.
- Renewable energy of 8 TWh from small-scale sources in 2020. Again, we believe that this is a conservative assumption and that small-scale systems could deliver well over this estimate. We note that such systems already deliver over 4 TWh pa.
- Giving total estimated generation from renewable sources of over 64 TWh in 2020 or about 26% of the estimated 245 TWh– that is, 41 TWh from LRET, 8 TWh from small-scale systems and 15 TWh from "existing" renewable energy sources.

Recent analysis from ACIL Tasman[8] suggests a similar figure of 25%.

The RET was originally based on a forecast of total Australian energy of 300 TWh in 2020. Origin's high level estimates show overall generation in 2020 will be well below 300 TWh, at closer to 245 TWh.[9] Energy consumption is currently falling and is projected to be relatively flat for some years. Figure 1, below, shows the divergence between the Australian Energy Market Operator's 2010 and 2012 consumption forecasts in relation to the NEM.

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[1]Garnaut R, *The Garnaut Climate Change Review: Final Report*, 2008.

[2]Productivity Commission,"What Role for Policies to Supplement an Emissions Trading Scheme? Submission to the Garnaut Climate Change Review", 2008.

[3]IPART, *Final Report on Regulated Electricity Prices July 2012*, 2012.

[4]Wilkins R, *Strategic Review of Australian Government Climate Change Programs*, 2008.

[5]Whilst Australia's stated 2020 target is a 5% reduction on 2000 levels, the 2050 target is a very ambitious 80% reduction on 2000 levels. See Section 3 of the *Clean Energy Act 2011*.

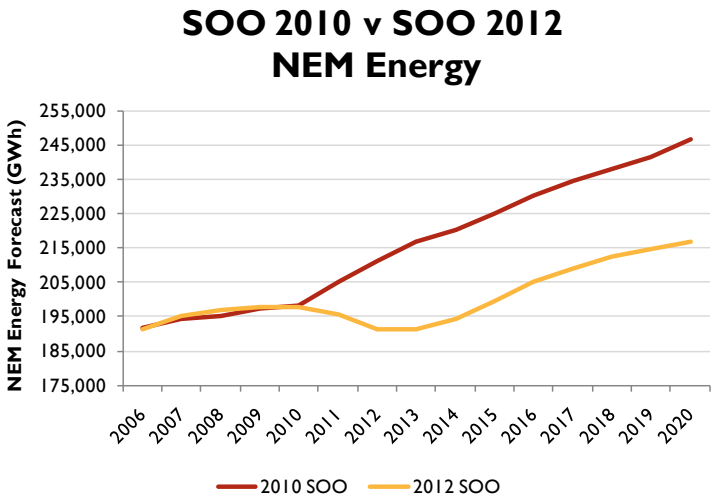
[6]Minister Greg Combet, *Australian Parliament Hansard, Renewable Energy (Electricity) Amendment Bill 2010*, second reading, 27 May 2020, p4377.

[7] Issues Paper, p.23

[8]ACIL Tasman, "Achieving a 20% RET", 2012.

[9]This estimate is based on growth of 1.9 per cent in current NEM output, as projected by AEMO in its 2012 *Electricity Statement of Opportunities*, and 20 TWh for the South West Interconnected System in 2020.

Figure 1



Source: Origin analysis based on Australian Energy Market Operator Electricity Statement of Opportunity (SOO), 2010 and 2012

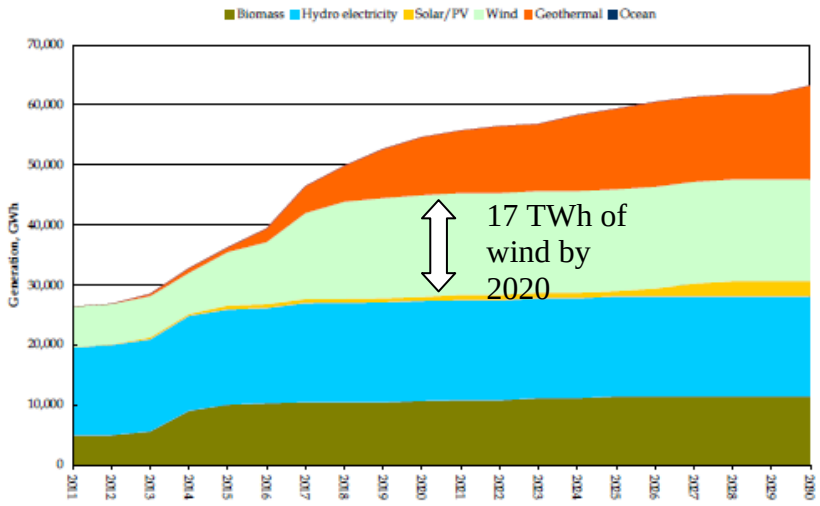
Modelling commissioned by the Australian Treasury in late 2011 also projects generation nationwide of around 250 TWh in 2020.[10]This implies a contribution from renewable energy in 2020 of around 24-25%, based on the current LRET target.[11]

As noted by AEMO in 2011, reduced forecasts for energy consumption are a function of numerous factors including a changing economic landscape, a more energy-conscious public, the impact of rooftop solar photovoltaic (PV) installations and milder weather.[12]

We note the AEMC's finding that most future renewable capacity under the LRET is likely to be in the form of wind and biomass.[13] As noted by the Productivity Commission in 2008[14] a key risk associated with quota-based market support mechanisms such as the RET is that they encourage development of the cheapest technology at the expense of those technologies which exhibit the greatest spill-over benefits. When the RET was expanded in 2009, electricity demand was strong and it was foreseen that a variety of technologies would be required for future demand growth as well as to meet the target. The projection for technologies in analysis commissioned by the Federal Government in 2010 is shown in Figure 2a, below, where this spread of technologies is apparent.[15]

[10]Roam Consulting, *Additional Projections of Electricity Generation in Australia to 2050, Supplementary Report to the Australian Treasury*, September 2011
[11]Based on 41TWh from the LRET with 15 TWh from existing generation and around 4 TWh from the SRES implies a contribution from renewable of around 24 per cent of generation in 2020. A greater contribution from small-scale systems would increase this percentage.
[12]Australian Energy Market Operator, *Electricity Statement of Opportunities*, 2011, p2.
[13]Issues Paper, p.21
[14]"What Role for Policies to Supplement an Emissions Trading Scheme? Submission to the Garnaut Climate Change Review", Productivity Commission, May 2008, p.24
[15]McLennan Magasanik Associates, "Impacts of Changes to the Design of the Expanded Renewable Energy Target, May 2010.

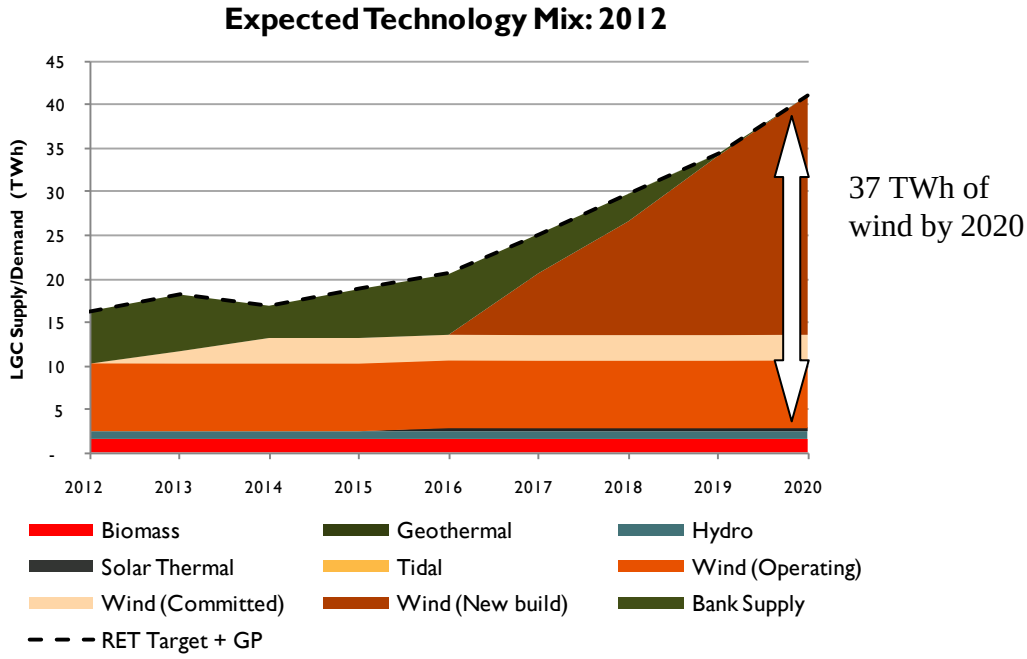
Figure 2a



Source: McLennan Magasanik Associates, "Impacts of Changes to the Design of the Expanded Renewable Energy Target", May 2010

In 2012 it is evident that demand growth is significantly below forecast, and that the RET will largely drive investment in wind. This changed outlook is represented in Figure 2b. Our current estimate shows 37 TWh (or about 12,000 MW[16]) of wind generation is required to satisfy the target over the course of the scheme, compared with 17 TWh (or 5,500 MW) in the Government's 2010 estimates.

Figure 2b

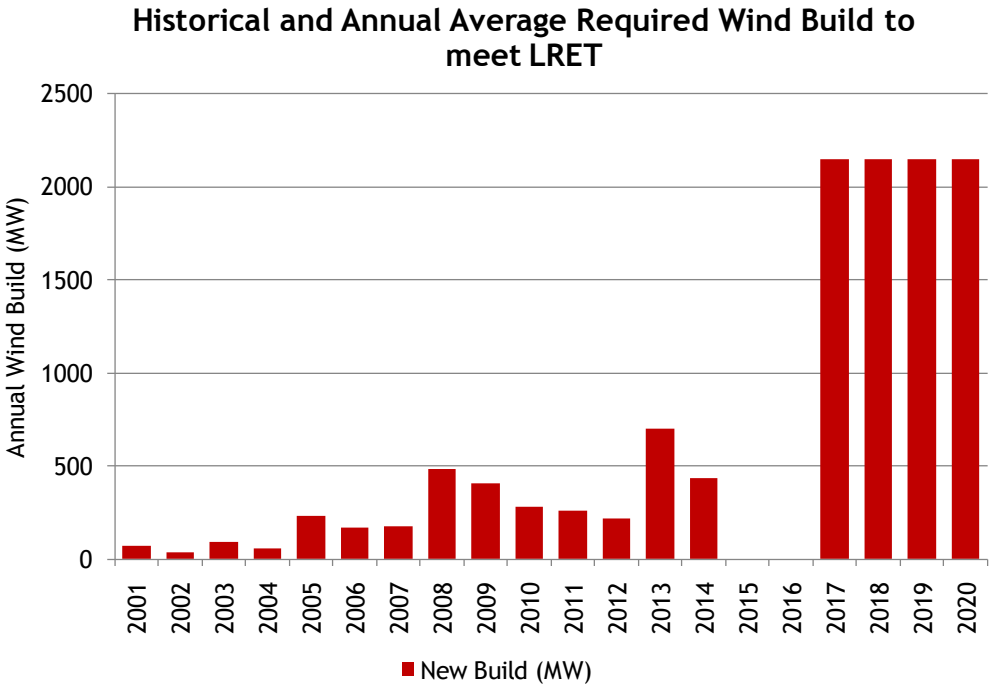


Source: Origin analysis

[16]These estimates assume a capacity factor of 35%.

We agree with the Issues Paper that there are currently enough certificates to satisfy the LRET targets for the next few years[17]. However, the sharp increase in the trajectory of targets from about 2016 will require a massive expansion in wind capacity to meet the 41,000 GWh target in 2020. Because of the legacy of the bank and the shape of these increases, the vast bulk of investment will be compressed into a short period in the latter part of this decade. We have estimated the required build until 2020, and compared this with the realised build in prior years, as shown in Figure 3. As can be seen, the expansion required in each year beyond 2016 represents several multiples of what has historically been achieved in any prior year. This totals about 9,000 MW over a four year period, or over 2,000 MW per year – compared to about 2,000 MW over the past *decade*.

Figure 3



Source: Origin analysis[18], assumes capacity factor of 35%

We believe it is prudent for the Authority to question the merits of such a target and indeed whether it is physically possible to build this level of generation in this timeframe. Secondly, if it is possible, the cost involved must be considered. Forcing this level of new intermittent generation into a market with flattening demand will have detrimental market outcomes beyond the simple cost of the LRET subsidy. The implications for energy markets include:

- Electricity transmission and network stability: as noted in the Issues Paper[19] increased levels of intermittent generation will require significant network extension and augmentation if they are not to lead to violations of network security limits. This will mean a step change in electricity transmission investment, which the community as a whole may not be ready to accept, particularly as we project the wind generation investment is likely to be concentrated in the states of New South Wales and Victoria. Ancillary services costs are likely to increase significantly

[17]Issues Paper, p22
[18]Note that these modelling results are stylised. The investment "gap" in 2014-15 may be smoothed by the practical operation of the market. However, the point stands that the required investment in wind generation is of a magnitude of several times what has actually been historically built.
[19]Issues Paper, p43

if the LRET forces large amounts of wind into the system. There is also the potential for generator fluctuations to impact on network reliability.

- Planning guidelines: We project the bulk of the wind generation will need to occur in New South Wales and Victoria, particularly as further wind development in South Australia or Tasmania would require interconnection upgrades. However, restrictions on further wind development arising from restrictive planning guidelines could be prohibitive. This is evidenced by the recent example of the Stony Gap wind farm proposal in South Australia. Community concerns over the potential impacts of wind farm developments are likely to continue.
- A greater need for additional gas-fired generation, but with a concomitant negative impact on the economics of gas units: studies on the impact of increasing wind's market share[20] find wind generation significantly alters the load duration curve (LDC) of residual demand, changing not only its size but its shape. Gas will likely remain the fuel of choice to manage intermittent generation, but the capacity factor of gas generators will fall, increasing the levelised costs of electricity (LCOE) from gas-fired generation and exacerbating the problem of market failure associated with investment in marginal units of base load supply. A further projected impact is more volatile market prices, including more high and negative events.[21] The interaction between intermittent generation and the remainder of the generation system is likely to mean that as the amount of wind increases the effective cost of abatement from the wind generation also increases.

In light of growing concern about increases in the cost of energy, against a backdrop of falling energy consumption, and given the challenges associated with relying predominantly on wind power to meet the current LRET target, Origin believes the scheme should be recalibrated to better align with its initial goals. As such, we suggest adjusting the target to track the original 20% by 2020 goal. In the absence of a timely adjustment of this kind we believe the scheme could face a more dramatic adjustment in the medium term, one that would be more likely to put its important policy goals at risk.

We highlight in this respect that we are advocating a one-off adjustment to the volumetric (GWh) target, not an arrangement whereby the volumetric target varies as a function of changes in annual projections for future energy consumption. The volumetric approach is well established and understood by the market. About two to three years notice should be given for changes to the legislated GWh targets.

Our estimates of a real 20% target in 2020 are based on the assumptions on page 3 of this submission. Such assumptions would imply an LRET target of about 27 TWh in 2020. A slight variance around the 20% target in 2020 is to be expected. However, we believe that a 26% effective target is a significant departure to the original policy intent, especially in the context of a market requiring little new generation build in this period and when the desired diversity of renewable energy technologies has not eventuated.

In Figure 4 we project the impact on wind investments of realigning the LRET target. As can be seen, required investments are still significant in all years after 2016 at over 1000 MW per annum. However, they are closer to levels of investment achieved in past years. We estimate that reducing the target reduces the amount of wind required in the period to 2020 by 2,800 MW, relieving cost pressures on wind farms as they compete for labour and other resources during the construction process, and easing costs associated with the required network extensions and expansions in gas peaking capacity. Equally, a larger portion of the wind investments required to meet a realigned target has actually been approved, making it more likely that the target will actually be met. We estimate that about 900 MW of wind generation is currently under construction, with about a further 2000 MW approved.

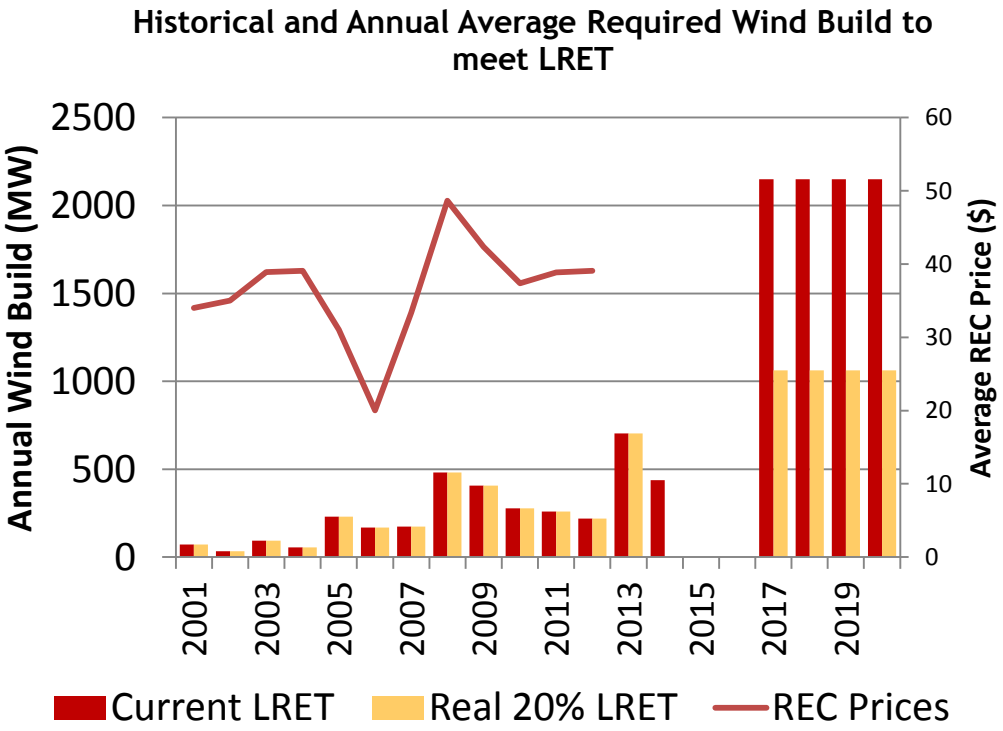
[20] Irene Vos, "The Impact of Wind Power on European Natural Gas Markets", International Energy Agency Working Paper, January 2012

[21] James Cox, "Implications of intermittency", *Modern power systems*, January 2010, Global Trade Media, London.

From the perspective of an investor in the wind industry we also point out that moving to a real 20% target will not impact on any projects that are currently under construction or that have already received planning approval. There will also be plenty of room under a real 20% target for future projects which are presently at an early stage of development.

Further, in Origin's experience, the contracts which underpin an investment in a wind farm are usually structured so that it is the purchaser of the energy (usually an electricity retailer) who bears the majority of risk associated with regulatory change.

Figure 4



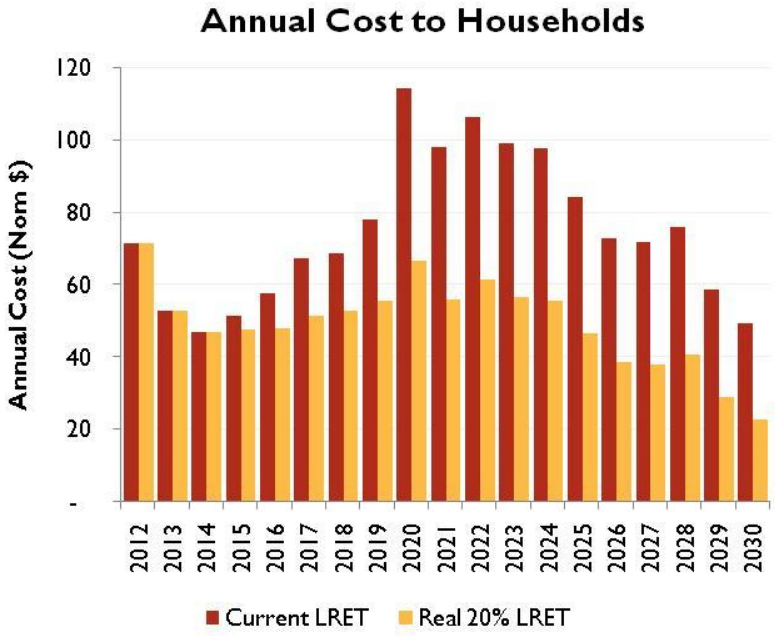
Source: Origin analysis

The cost savings of the adjusted scheme targets are very significant. ACIL Tasman[22] has recently modelled a similar change and has estimated the savings at about $28 billion over the remaining years of the scheme. We generally agree with these estimates, having replicated similar analysis internally. Our estimates are a cost saving of $25 billion in nominal dollars out to 2030. This comprises $20 billion based on volume and price differential and an additional $5 billion to firm up the intermittent output of the additional wind volumes. This is a very significant saving. Origin would be happy to discuss this analysis with the Authority in more detail.

The costs to individual consumers are also non-trivial. We project these differences in cost in terms of an average household using 7 MWh per annum in Figure 5. This shows a saving of about $48 a year (or almost $7MWh) in 2020, with similar cost savings each year for the rest of the scheme.

[22]ACIL Tasman, "Achieving a 20% RET", 2012, pp iv, v and 23.

Figure 5



Source: Origin analysis

The cost savings to larger users should also be highlighted. Whilst RET is often described as a retail level policy because the incidence of the cost is legally placed on electricity retailers, the purpose of the policy is actually focused on the generation segment of the market, so it makes sense to compare the additional costs imposed by the RET with the cost of generation. Consider the example of a manufacturing business which receives no assistance under the RET. In 2012/13 it faces a combined LRET and SRES cost in the order of $14 MWh[23]. Compare this to a pre-carbon NEM average price of about $40 MW/h, and RET represents a 35% increase in the cost of generation. Including a carbon price in the cost of generation (making it about $60 MWh) and the RET would still represent about a 23% additional cost of generation. A real 20% LRET could save large customers in the order of $7 MWh in 2020.

Whilst Origin is not opposed to higher levels of renewable energy in the future, we strongly believe that the community must be made aware of the increased costs associated with the current scheme design, particularly in the context of a market requiring little new generation build in this period and when the desired diversity of renewable energy technologies has not eventuated. If the Government, community and electricity consumers in particular are willing to accept this cost then the target should remain. If not, the goal of 20% renewable energy in 2020 can still be met but at a saving over $20 billion to the nation. A portion of these avoided costs could also be redirected to other purposes, such as more strategic research and development investment in renewable energy in Australia. If individual consumers would like to contribute to a higher rate of renewable energy in Australia directly, there are still opportunities for those consumers such as through the Government accredited GreenPower scheme.

[23] IPART NSW, "Fact sheet - Impact of green schemes on regulated electricity retail prices – June 2012, 13 June 2012.

2. Diversity of renewable energy access

Origin strongly supports the RET developing a range of renewable energy technologies that are of strategic benefit to the Australian electricity market. In particular, we support measures that encourage emerging renewable technologies that are capable of providing baseload renewable energy. We do not support banding or other market complications. The history of the multiplier for small-scale solar PV is illustrative of potential distortions from overly complicated policy design.

As stated previously we believe that the strategic policy objective of the RET is a target of 20% renewable energy supporting multiple renewable energy technologies to position Australia with a portfolio of renewable energy options for a long-term (post 2020) transition to a low carbon economy. With the operation of a carbon price the RET is clearly not about least cost abatement over the immediate time period to 2020. Nor is it simply about deploying a bulk of relatively mature renewable energy technologies where the vast benefit of this flows overseas to the owners of the manufacturing businesses involved. Australia needs to be smarter with its policy settings so that costs borne by its electricity consumers in funding the RET go towards long-lasting and strategic improvements for the nation.

With this in mind we reiterate that Origin supports the RET as part of a suite of climate change policies to promote a diverse renewable energy mix. Most relevant for emerging renewables are continuing support for research and development. Funding for pure and applied research has been found to have played an important role in expanding the early commercialisation phase[24]. This is an area where Australia has shown a comparative advantage, particularly in the area of solar energy research. We believe that the establishment of institutions such as the Australian Renewable Energy Agency (ARENA) are a positive step and we generally support its purpose.

Origin believes there is merit in allowing medium scale solar systems of above about 5-10 kW into the LRET. Due to their size, such systems may not require deeming arrangements but may involve some form of aggregation by sites. Allowing medium scale solar into the LRET would be one tangible way to encourage greater diversity of access to the scheme and give a greater opportunity for innovation.

Regarding the operation of the Clean Energy Finance Corporation (CEFC), we do not believe that any potential projects that are developed with its support require the LRET target to be adjusted at this stage. We draw similarities to the Solar Flagships program where our analysis indicates that any potential contribution from such large scale solar projects to the LRET up to 2020 is likely to be small. Likewise we see the potential for CEFC projects to contribute significant volumes to the LRET before 2020 as limited.

[24]Productivity Commission, "What Role for Policies to Supplement an Emissions Trading Scheme? Submission to the Garnaut Climate Change Review", 2008

In the long-term we believe it is feasible that the LRET could be linked internationally, in much the same way that is proposed for the Carbon Pricing Mechanism. Whilst this may seem to be a significant change there could be significant environmental benefit, at reasonable cost, in supporting emerging renewable energy options in our neighbours in the Asia-Pacific region. Such links could initially develop by means of an offset mechanism, in a similar way to the Clean Development Mechanism under the Kyoto Protocol, but aimed at supporting renewable energy exclusively. Regional linking and harmonisation of renewable energy technology support policies are currently seen as important means to enhance growth in some of the largest markets for renewable energy internationally[25]. Such linking of renewable schemes could provide another avenue for the development of global action on climate change.

3. Small-scale Renewable Energy Scheme (SRES)

Origin supports a continued subsidy to be provided to small-scale renewable energy. It is a legitimate form of renewable energy that should be supported. Our experience is that small-scale solar PV systems in particular are very popular with the general public as they are recognised as a simple, tangible form of energy and one which can provide a sense of empowerment to respond to both climate change and rising retail tariffs. This ground-up support is very important for building broader community engagement on climate change policies.

The key question is about the mechanism to support the continued deployment of small-scale systems. Origin does not support the SRES mechanism. As we warned in our previous submission on the enhanced Renewable Energy Target in 2010[26]:

> *"Origin does however have some major concerns with the proposed implementation of the SRES...We believe that the SRES is complicated and not the most efficient policy available to promote small-scale renewable technologies...Unfortunately it is energy customers who will bear the cost of these inefficiencies.*
>
> *The SRES creates costs which have the nature of a regressive tax. Electricity consumers on low and fixed incomes will subsidise those on higher incomes who are more likely to benefit from the scheme. We note in this context that the scheme is uncapped."*

Unfortunately these statements have proved prescient. Initial estimates of about 4 million certificates were grossly inaccurate. The current target for SRES for 2012 is about 45 million certificates, which equates to an annual total subsidy of $1.8 billion. IPART have estimated that SRES alone is estimated to cost the average NSW household (using 7MWh) $64 in 2012-13[27]. This amount does not take into account further costs from state-based feed-in tariffs. SRES also involves a number of administrative problems which are detailed at **Attachment A**.

We note that the solar PV "multiplier" has reduced significantly from 5 to 2 and is scheduled to reduce back to 1 from 1 July 2013. Combined with the trend back to more sustainable state-based feed-in tariffs this is likely to reduce pressure on the SRES "market". Further, the twin effects of falling solar panel costs and rising retail tariffs will create a situation where the subsidy required to support distributed solar PV will continue to reduce over time. There may be a point in the latter part of this decade when such subsidies are no longer required.

[25]The International Energy Agency has concluded that a lack of policy harmonisation was hampering competition and efficiency in the provision of renewable energy in Europe and North America. See International Energy Agency, *Energy Technology Perspectives 2012*, 2012.
[26]Origin submission on "Enhancing the Renewable Energy Target Discussion Paper", 14 April 2010, p2.
[27]IPART NSW, "Fact sheet - Impact of green schemes on regulated electricity retail prices – June 2012, 13 June 2012.

In essence the SRES operates to provide an up-front subsidy to reflect the environmental benefit of small-scale renewable systems over their life. It is this "point of sale" discount that makes the up-front costs manageable for consumers and greatly increases the incentive to install solar panels. As we have previously advocated we strongly believe there are other more efficient and more equitable policies to provide this. In order of priority our suggestions are:

1) Simple rebate scheme.
2) Combine the SRES with the LRET, once again creating one scheme[28].
3) As a last resort, continue with the SRES as currently structured, noting the inefficiencies and that the subsidy should reduce further over time as capital costs reduce.

The main advantages of a rebate scheme are that is:

- administratively simple; and
- relatively equitable, as the progressive taxation system would be used to fund it (instead of being a cross-subsidy from electricity consumers).

The issue of equity is particularly important. The SRES has acted as a further cost on rising electricity tariffs which is borne by all electricity customers, irrespective of whether they share in the benefits of the scheme. However, a budget funded rebate would use the progressive nature of the Federal tax base to mitigate these cost impacts. Under either mechanism it is largely the same set of taxpayers/electricity customers who will bear the cost of the subsidy but one of the mechanisms has a more equitable way to distribute this cost. The funding mechanism should be transparent to the general public.

In the table below we have estimated the potential size of the rebate required to support solar PV panel installations of system sizes ranging from 1.5 kW to 4 kW. As noted above, we suggest that systems from about 5-10 kW should be eligible under the LRET (but possibly without up-front deeming arrangements). Taking the example of a 1.5 kW system (which was previously the most popular system size) we suggest that the subsidy now required is less than $1000. This compares with the $8000 rebate that was previously offered under the Howard Government for similarly sized systems.These estimates are based on average prices and we aware of less expensive systems currently available. Further, as these subsidies would apply from 1 July 2013 there is the potential for further reductions in panel costs.

If changes are made to the SRES we request that sufficient notice is given to the market to ensure a smooth transition.

Table 2: Estimates of illustrative subsidies for small-scale solar pv systems

System size (kW)	Annual generation (MWh)	Deemed generation over 15 years (MWh)	Proposed subsidy at $30 per MWh ($)	Estimated system cost after subsidy ($)
1.5	2.1	31.5	*945*	3000
2	2.8	42	*1260*	4000
2.5	3.5	52.5	*1575*	5000
3	4.2	63	*1890*	6000
4	5.6	84	*2520*	8000

Source: Origin analysis

[28] If the scheme was combined the total target should be about 35 TWh in 2020 (based on our recommended LRET target of 27 TWh and an estimate of 8 TWh from small-scale systems in 2020).

We understand that the Federal Government prefers not to have such measures on the Federal Budget. However, we believe there are ways of designing appropriate safeguards to protect the Budget position from potential blowouts, which have occurred in the past. The first is that the size of any subsidy is significantly smaller than under previous rebate schemes. The size of the subsidy could also be shaped so that it reduces as the panel size increases, or caps out at a maximum amount (say $2000). There would also be flexibility to reduce the rebates as panel costs fall further and/or retail tariffs increase. In summary, there are many reasonable features that could be built into a well-designed but simple and equitable solar panel rebate system.

4. Administrative improvements

Origin also proposes a number of administrative improvements, particularly to the SRES, which are explained in **Attachment A**. In summary these include:

- allowing the Regulator some discretion to exercise judgement in unforeseen circumstances;
- revising the SRES quarterly surrender rules to deal with reduced load;
- flexibility for the Regulator to return surrendered certificates under LRET and SRES; and
- Improving the Partial Exemption Certificate (PEC) processes.

We look forward to continuing constructive discussions with the Authority as the review progresses. Origin would be pleased to provide further detail to the Authority on our estimates of the cost of the RET and encourage the Authority to undertake detailed analysis in this area.

If you have any questions regarding this submission, please contact me on (02) 8345 5250 or Matthew Kaspura (Manager Carbon Policy) on (02) 8345 5287.

Yours sincerely

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Attachment A - *Administrative issues*

There are some significant improvements required in how the LRET and SRES are administered, particularly around calculation of the quarterly liabilities and the need for the Regulator to be able to return certificates to entities.

Discretion: The Regulator has very little discretion to exercise judgment – most of the Regulator's powers are binary and are limited to a very few circumstances. We would support to the Regulator having broader powers to deal with special or complex circumstances that may not have been contemplated in the Act or enabling Regulations.

Revising the SRES quarterly surrender rules to deal with "reduced load": The rules around establishing quarterly liabilities and quarterly surrender transactions are impractical. Currently, quarterly surrenders are based on previous year's load data. Adjustments can be made if a company's load is going to be significantly reduced compared to the previous year. However these adjustments have severe penalties if the forecast is incorrect. We would support an option for using actual data for quarterly surrender, as well as the historic data or forecast data options currently provided for in the legislation. Having the ability to calculate liability based on "actual data" would most likely reduce the administrative burden for both the Regulator and the liable entity in some circumstances.

Flexibility for Regulator to return surrendered certificates under LRET and SRES: Provisions in the LRET and SRES restrict or prevent the Regulator from returning surrendered certificates. In LRET and SRES any excess of certificates surrendered can be carried forward to offset future liabilities. However where a company ceases to trade "accepted" certificates cannot be recovered resulting in a financial loss to the company. We would like to see the Regulator *not* accepting any certificates for surrender in the Registry until the full compliance year true-up has been completed. The combination of poor quarterly liability calculation rules and inability to return surrendered certificates can unfairly disadvantage liable parties who are participating in the scheme in good faith. Where companies have a significantly reduced load or are ceasing to trade, they need to weigh up the relative risk of facing penalty because of incorrect forecasts of their reduced load against the risk of losing certificates unnecessarily.

Origin typically offers a "buffer" of extra certificates for surrender in the event that we have underestimated our liability. Once certificates in excess of the liability are "accepted" they cannot be returned, only rolled over to the following compliance period. This is problematic where liabilities are greatly reduced in the following compliance period. Rollover is generally a reasonable process, but there may be future circumstances where we may want access to the certificates rather than waiting for them to be applied at the next compliance period.

We would like to see an additional step in the process, that is, the Regulator should not "accept" certificates for surrender until they have confirmed liabilities *and* given the liable entity the choice of certificate return or rollover.

Partial Exemption Certificate (PEC) processes: Liable entities receive PECs from qualifying customers in the middle of the compliance year. This creates an administrative burden for both the customer and the liable entity in the way that the customer is billed. It would be preferable for PECs to be issued before the compliance year starts (e.g. in November or December) so that appropriate customer billing can occur throughout year.

Origin would be pleased to discuss these issues further with the Authority.