



A U S T R A L I A N
SOLAR COUNCIL
THE NATIONAL VOICE OF SOLAR

Australian Solar Council Submission on Renewable Energy Target Review Issues Paper

PO Box 148

Frenchs Forest NSW 1640

Australian Solar Council Submission on Renewable Energy Target Review Issues Paper

Summary

The Australian Solar Council – formerly the Australian Solar Energy Society – is a strong supporter of the Renewable Energy Target (RET). The RET is a key part of a comprehensive suite of policies including a carbon price, Climate Change Authority, Australian Renewable Energy Agency, Clean Energy Finance Corporation and research and development tax credits, which now provide the necessary continuum of support for clean energy research and development, demonstration and early stage commercialisation. These policies, if implemented consistently, provide an opportunity for Australia to cut its carbon pollution and transition quickly to a clean energy future.

The Renewable Energy Target has been one of Australia’s most successful public policy measures of the past decade – one which has been developed over time by the Howard, Rudd and Gillard Governments and supported by all federal political parties. It is the sole Australian Government climate change and clean energy policy which has been maintained over a long enough period to provide a level of investment certainty.

The RET’s achievements are substantial:

- It has stimulated more than \$20 billion in private investment in household and large-scale renewable energy since it was established.ⁱ
- Four million Australians now have solar panels and solar hot water systems on the roofs of their homes and businesses, supported by the Renewable Energy Target.ⁱⁱ That represents unprecedented climate change action by householders.
- More than 20,000 Australians now work in the renewable energy sector.ⁱⁱⁱ

Through its Review of the Renewable Energy Target, the Climate Change Authority should recognise the tremendous success of the Renewable Energy Target.

Given the political uncertainty regarding the carbon price and the Clean Energy Finance Corporation, the abolition of the carbon price floor price and the recent failure to negotiate the Contract for Closure package, the Renewable Energy Target is more important than ever in ensuring the development of a strong clean energy industry and the reduction in Australia’s carbon pollution.

The political uncertainty regarding the Clean Energy Future package and the growing scientific certainty around the need for urgent action on climate change presents a very strong argument for increasing and extending the Renewable Energy Target over time. At the very least, the RET should

be increased to incorporate any renewable energy projects supported by the Clean Energy Finance Corporation.

The Australian Solar Council rejects any suggestion of a weakening of the Renewable Energy Target and, instead, urges the Climate Change Authority to explore opportunities to increase and extend the Renewable Energy Target after 2020.

The objective of the Renewable Energy Target is to encourage the additional generation of electricity from renewable sources and to reduce emissions of greenhouse gases in the electricity sector. Any proposal to reduce the Renewable Energy Target would be inconsistent with this objective and would be seen as a movement away from climate change action at the very time climate change science is showing the need for more urgent action.

The Australian Solar Council rejects any proposal to reduce the RET to a so-called “real 20%” target. This would be the equivalent of not building 220 fifty megawatt solar PV plants or around 60 two hundred megawatt solar thermal power stations with four hours storage. It would put Australia’s clean energy future on hold.

The Australian Solar Council does not support proposals to combine the large-scale and small-scale renewable energy schemes, to reduce the Clearinghouse price, or to further reduce support for residential solar. These measures are not justified and would undermine investor confidence and lead to job losses throughout the solar industry.

Whilst residential solar PV is increasingly reaching grid parity in many parts of Australia as a result of soaring electricity prices and significant reductions in the cost of PV, this does not diminish the need for PV to continue to be supported through the Renewable Energy Target. The high upfront cost of PV continues to be a barrier to investment and, as the solar hot water industry has found, grid parity does not automatically translate into increased demand. The Small-scale Renewable Energy Scheme plays a critical role in reducing the upfront cost of solar and encouraging deployment - which drives down the cost curve.

About the Australian Solar Council

The Australian Solar Council (formerly the Australian Solar Energy Society [AuSES]) is one of the world’s oldest solar associations. For 50 years, it has brought together industry, academics and the broader community to promote scientific, social and economic development through the environmentally sound use of solar energy. In August 2012, AuSES announced it was repositioning, rebranding and renaming itself as the Australian Solar Council, the national voice of the solar industry.

The Australian Solar Council’s membership is in the thousands and includes companies working in residential, commercial and large-scale solar; academics; and interested Australians. The Solar Council is a not-for-profit organisation and is governed by a volunteer board elected by its members. It is a leading member of the International Solar Energy Society.

In 2012, the Australian Solar Council has convened a series of face-to-face and phone meetings between various solar industry associations, including the Clean Energy Council, Australian PV Association, Australian Solar Thermal Energy Association, Solar Energy Industry Association (representing solar installers), the REC Agents Association (representing companies that create and trade renewable energy certificates), the Alternative Technology Association, the Solar Business Council and 100% Renewables, to help achieve a coordinated solar industry approach to the RET Review. The communique from the first meeting of these industry associations is attached.

This submission reflects some of the discussions across industry associations, and shares similar messages to those expressed by the associations listed above.

General Comments on Issues Paper

The Australian Solar Council welcomes the opportunity to comment on the Issues Paper and appreciates the clear consultation process underpinning the Review of the Renewable Energy Target.

The Australian Solar Council acknowledges the Issues Paper is very broad, and has the potential to open up all aspects of the RET to review.

The Australian Solar Council believes the RET has been a highly effective piece of public policy, although not without its faults, and recognises the Review is being undertaken as a statutory obligation under the *Renewable Energy (Electricity) Act 2000* [the Act]. We note that some commentators and industry bodies have mischievously and erroneously argued the Review is being undertaken because of flaws in the RET and concerns within Government about the RET. It is important the CCA strongly reinforces the fact the Review is a statutory requirement and is being undertaken to meet a statutory timeframe.

Whilst the Australian Solar Council supports the RET Review, the Review itself has created further uncertainty for Australia's solar industry, which in turn creates a barrier to private sector investment. We urge the CCA to narrow the focus of the Review in its forthcoming Discussion Paper, and make it clear there is no intention to recommend the abolition of the RET, or its component parts, the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES). We continue to urge the Government and the Coalition to restate their ongoing support for the Renewable Energy Target.

The Australian Solar Council notes the Climate Change Authority has a statutory obligation to ensure the RET Review's recommendations are consistent with the objectives of the Act, that is, to:

- Encourage the additional generation of electricity from renewable sources;
- Reduce emissions of greenhouse gases in the electricity sector; and
- Ensure the renewable energy sources are ecologically sustainable.

Any proposal to significantly weaken the RET would be inconsistent with the objectives of the Act, in that it would actually discourage additional generation of electricity from renewable sources and would certainly lead to a less diverse mix of renewable energy sources.

The Climate Change Authority also has a statutory obligation to ensure the RET is consistent with the following principles:

- Be economically efficient;
- Be equitable;
- Be in the public interest;
- Take account of the impact on households, business, workers and communities;
- Support the development of an effective global response to climate change;
- Be consistent with Australia's foreign policy and trade objectives; and
- Any additional principles the Authority considers relevant.

The Australian Solar Council believes the RET meets the above principles, and this is expanded upon throughout this submission.

There are a range of issues relating to the successful uptake of renewable energy in Australia which are beyond the scope of the RET Review, but which could usefully be reviewed subsequently by the Climate Change Authority as part of its mandate as an independent advisory body on climate change. This includes the structural and legislative barriers to greater uptake of commercial and industrial scale solar PV and solar thermal, and the need for further energy market reform to address these barriers. The CCA should encourage all governments to support a reasonable price for solar power and acknowledge the right of all Australians to have their solar power systems connected to existing electricity grids.

The CCA should call on all governments to support measures, including and beyond the RET, that encourage innovation and deployment of renewable energy capacity to drive Australia's quick transition to a low carbon economy.

Solar Data

A report as important as the Issues Paper should use current data on the uptake of renewable energy. The Australian Solar Council is disappointed the CCA has used 2009-10 data, when more recent data is readily available. The Issues Paper states the "amount of solar PV is 278 GWh" (p11 and p44). In fact, the true figure today is likely to be about 1.9 gigawatts of installed capacity. Installations to the end of 2011 can be expected to produce 1,800 GWh of energy in 2012, before accounting for the likely near-doubling of installed capacity set to occur in 2012.^{iv}

The Solar Council urges the CCA to work closely with the Clean Energy Regulator, the Australian Solar Council and solar industry experts to ensure its deliberations are based on the latest installation data, and the most reliable projections of cost and uptake. In particular, the CCA should refer to the Bureau of Resource and Energy Economics 2012 Australian Energy Technology Assessment (BREE) for PV and the Australian Solar Institute's *Realising the Potential of Concentrating Solar Power* Report for concentrating solar.

Renewable Energy Target Overview

Success of the RET

The RET is the most successful and effective public policy measure to move Australia from excessive reliance on fossil fuels for electricity towards a clean energy economy, and the only long-term measure providing investment certainty.

The RET has strong bipartisan support because it works. The RET was originally introduced by the Howard Government in 2001 as the Mandatory Renewable Energy Target. The target was expanded by the Rudd and Gillard Governments, ensuring that more than 45,000 gigawatt hours of electricity will be generated from renewable energy sources in 2020. The RET is a market-based mechanism that drives a cost-effective transition to clean energy, with associated investment in new clean energy industries and employment in Australia.

The RET has delivered cost-effective clean electricity for consumers, helped to reduce wholesale electricity market prices, and will help to reduce electricity network costs that are causing retail electricity price increases.

Four million Australians now have solar power and solar hot water, assisted by the RET, reducing their electricity bills and cutting Australia's carbon pollution. The vast majority of these homes are low to middle income households.

More than \$20 billion has already been invested in domestic and industrial-scale renewable energy since the RET was established.

The renewable energy deployed as a result of the RET is significantly reducing wholesale energy costs for all Australians. Solar and other renewable energy deployed with assistance from the RET has helped to reduce electricity demand and network capacity pressures and has major potential to contribute to reducing network costs.^v With \$120 billion planned network expenditure to 2030 the RET must not only continue but also be extended, to ensure Australia's electricity network is equipped to deliver greatest cost efficiency for Australia's future.

Cost of the RET

The Australian Solar Council supports the analysis of the Clean Energy Council (CEC) that the cost of the RET is relatively small and getting smaller, particularly in light of the significant benefits in terms of energy diversity and security, reduced energy demand (especially when combined with action on energy efficiency), reduced wholesale energy prices, jobs and carbon abatement that are generated when delivered alongside effective investment in energy efficiency.

Research commissioned by the CEC suggests the RET contributes just 7 per cent of the average Australian power bill, falling to 4 per cent by 2020.^{vi} According to the Australian Energy Market Commission, renewable energy schemes are projected to comprise only 3% of residential electricity price increases across Australia.^{vii}

The ongoing reduction in the solar multiplier, coupled with reductions or elimination of state based feed-in tariffs has seen a significant reduction in the cost of the Small scale Renewable Energy Scheme.^{viii}

Renewable Energy Policies in other countries

The Australian Solar Council welcomes the Issues Paper's reference to renewable energy targets around the world. It is again worth reminding Australians that there are legislated or planned renewable energy targets in 85 countries.

Since the Issues Paper was released, it is believed China has doubled its domestic PV installation target to a staggering 40 gigawatts by 2015, with a potential target for 2020 of 100 gigawatts. No one should pretend Australia is acting alone, or ahead of the world, in promoting renewable energy and taking action on climate change. Such assertions are simply not supportable by the facts.

The Australian Solar Council encourages the CCA to highlight the significant successes of the RET, and continue to remind Australians that renewable energy targets are core public policy measures throughout the world.

20% by 2020 Commitment

The Issues Paper makes three threshold points in referring to the so-called 20% Renewable Energy Target (pp22-23). The RET has never formally been a 20% target:

1. The RET was originally a legislated target of 45,000 gigawatt hours. The Large-scale Renewable Energy Target (LRET) now has a fixed target of 41,000 gigawatt hours. The Howard Government's 2003 Tambling Review outlined the reasons for a fixed gigawatt figure and the CCA should endorse that conclusion.
2. The original policy objective (not legislated) was for the equivalent of at least 20 per cent of Australia's electricity generation to come from renewable sources by 2020.
3. The Australian Government has acknowledged the RET will likely deliver more than 20 per cent of electricity generation.

As the Issues Paper notes, the 2003 Tambling Review concluded:

"By their nature, projections of electricity demand contain a degree of uncertainty...The Review Panel considers that a fixed target is more compatible with market certainty, with [the Target's] industry development objective, which defines a level of renewable energy generation rather than a percentage of a fluctuating electricity market over which the industry has no control".

The fixed gigawatt hour Renewable Energy Target has been national policy, supported by all political parties, since its establishment in 2001.

The concept of a 20% target has been a useful communications tool in describing the broad policy objective, but it is not a legislated target. This is expanded upon later in this submission.



AUSTRALIAN
SOLAR COUNCIL
THE NATIONAL VOICE OF SOLAR

Response to Specific Questions

***Are the existing 41,000 GWh LRET 2020 target and the interim annual targets appropriate?
What are the implications of changing the target in terms of economic efficiency,
environmental effectiveness and equity?***

The existing targets are sufficient to achieve the objectives of the RET.

Reducing the 41,000GWh LRET target will have a number of implications:

1. It will mean that investments made based on detailed forecasting of the value of LRECs are likely to under achieve – as a result of direct Government intervention rather than market outcomes.
2. Investors, whose support is needed for all forms of energy and infrastructure will have less appetite for the Australian energy sector, increasing the cost of finance and reduce Australia’s ability to finance new infrastructure.
3. Australia’s inevitable investment in renewable energy will be further delayed. Australian and international research has demonstrated that delays in the transition to low/no emissions power generation will significantly increase the costs to the economy as a whole.
4. The Australian market for renewable energy is significantly constrained by the difficulty of contracting long term power purchase agreements at economically viable (for the producer) prices. Any downward movement of the target from 41,000 GWh would further exacerbate this issue.

A recent ACIL Tasman report for TRUenergy revealed that a reduction of the 41,000 GWh to what they claim represents a “real 20%” target would reduce the LRET by 16,584 GWh.^{ix} That would be the equivalent of not building 220 fifty megawatt solar PV power stations^x or around 60 two hundred megawatt solar thermal power stations with four hours storage^{xi}, and would mean withholding many billions of dollars of private sector investment in regional Australia.

Any proposal to substantially reduce the LRET is a proposal to put Australia’s clean energy future on hold. This would impose a major and unnecessary constraint on Australian participation the fastest growing business sector in the world today.

The Australian Solar Council believes Australia can, and should, be more ambitious with its renewable energy target, commensurate with the need for more action to address dangerous climate change and the need to remain internationally competitive in a carbon constrained global economy. The Australian Government should look to extend and expand the RET.

At a minimum, any clean energy projects supported by the Clean Energy Finance Corporation should be additional to the Large-scale Renewable Energy Target.

Is the target trajectory driving sufficient investment in renewable energy capacity to meet the 2020 target? How much capacity is needed to meet the target? How much is currently committed? Has the LRET driven investment in skills that will assist Australia in the future?

Australia is currently on track to meet the LRET, but it has failed to achieve an appropriate mix of renewable generation with the vast majority of LRECs being produced by wind. Other technologies such as large-scale solar can and will play a larger role between now and 2020, provided the target is not reduced.

If the target is reduced from 41,000 GWh, we will see a situation where almost all of our renewable generation is wind based. This will skew the generation profile of renewables away from peak times, reduce the benefit of reduced wholesale prices for electricity and leave Australia without large scale solar capability that will be crucial in meeting further targets.

In the context of other climate and renewable policies, is there a case for the target to continue to rise after 2020?

There is a strong case for the RET to continue to rise after 2020, and for it to be extended beyond 2030. Such a move is consistent with the need for more urgent action to address climate change, and would provide greater certainty for clean energy investors. This signal is particularly important, given the uncertainty over a carbon price and the Clean Energy Finance Corporation, the removal of the floor price for carbon and the failure of the Contracts for Closure program.

At a minimum, any large-scale clean energy projects supported by the Clean Energy Finance Corporation should be additional to the RET.

Should the target be a fixed gigawatt hour target, for the reasons outlined by the Tambling Review, with the percentage being an outcome?

As noted previously, the RET is, and should remain, a fixed gigawatt hour target. The Howard Government's Tambling Review outlined the arguments for a fixed target, and the CCA should endorse that view.

Importantly, it should be acknowledged that whilst energy demand is falling and is likely to continue to fall, the return of an El Nino weather cycle, compounded by warming, could lead to an increase in the demand for energy, particularly at peak times. Projections on energy demand are notoriously difficult and should not be incorporated into the legislated target.

In essence, the fixed GWh target is required for two key reasons:

1. Only a fixed GWh target informs the market in a way that will encourage investment in long term assets.
2. There are a number of elements in the approach to reducing emissions, including more efficient use of electricity and distributed and embedded generation. Using a moving GWh target that is calculated as a percentage of demand has the impact of penalising outcomes from energy efficiency and distributed and embedded generation.

The percentage target should be called for what it is – a communications tool, which provides a simple message to the general public. It is not an “outcome”, but rather an expression of what is trying to be achieved.

What are the costs and benefits of increasing, or not increasing, the LRET target for Clean Energy Finance Corporation-funded activities? What are the implications in terms of economic efficiency, environmental effectiveness and equity?

The Australian Solar Council supports increasing the RET to incorporate renewable energy projects supported through the Clean Energy Finance Corporation (CEFC). This will help deliver a more diversified range of renewable energy sources, including commercial, community and large-scale PV and solar thermal, and will ensure the CEFC is not duplicating the important work of the Renewable Energy Target in delivering least cost renewable energy.

There are two ways of increasing the RET to incorporate CEFC projects:

1. Increase the RET to account for new generation capacity delivered through the CEFC. This will ensure the existing RET market is not distorted and CEFC support delivers new and additional investment, and moves Australia closer to a low emissions future.
2. Replace RECs for CEFC projects. This would mirror the current approach taken by the Clean Energy Regulator for waste coal mine gas projects. Projects supported by the CEFC would be eligible for RECs, and must be bought by retailers. The CEFC RECs are subsequently replaced in the market to ensure they are additional to the existing RET.

Is a list approach to ‘eligible renewable sources’ appropriate?

A list is the only practical approach to take. Adding to the list without increasing the target in effect reduces the available target for technologies already on the list and will have a similar impact to reducing the 41,000 GWh target itself. For this reason, if a decision is made to provide incentives for technologies not currently on the list, this should be done outside the current target – and included in a new post 2020 target.

Are the LRET and SRES accreditation and registration procedures appropriate and working efficiently?

The Act creates a legislated monopoly for the accreditation of small-scale renewable energy technologies, ensuring that only one non-government agency has been given that power. Legislated monopolies are poor public policy, and the lack of competition appears to have resulted in some less than best practice outcomes. The CCA should recommend that the legislated monopoly for accreditation be abolished, and that this field be opened to competition, perhaps by the establishment of a small panel of accreditation agencies.

The Australian Government has in recent years strengthened the small-scale renewables compliance regime, and this was strongly welcomed by the Australian Solar Council. We continue to support a strong compliance regime for all participants in the RET. It should be noted the Solar Council has been contracted to undertake inspections of solar systems under the Act and has also been

proactive by investing heavily in a Solar Best Practice Program, which has included training for almost 1000 installers and the development of new Solar Best Practice software.

Should there continue to be a separate scheme for small-scale technologies?

The Australian Solar Council believes the small-scale and large-scale schemes should remain separate because:

- The drivers behind the investment in small scale and the investment in large scale systems are so different that a single scheme will not be effective.
- While decreasing system costs and increasing electricity costs means the level of support required to enable economic deployment of small systems to continue is also decreasing – and at some point will reach zero, access to the ability to generate electricity (and to generate clean energy) has become a significant social issue that cannot be ignored.
- While there are costs, as acknowledged previously, there are also significant benefits to the whole community and these could be maximised.
- Removing the stand alone SRES would effectively erode the target for large scale systems and cause the negative effects associated with reducing the 4,100GWh LRET target – reduced confidence, reduced investment and higher long term costs to the economy.
- While the costs of SRES has peaked (due to reduced multipliers and state based incentives), its value to the economy hasn't. Abolishing the Small-scale Renewable Energy Scheme (SRES) now would reduce the ability to access the benefits for minimum cost and reduce the stability of the sector.
- The SRES has been an extraordinary success story, with four million Australians having solar panels or solar hot water on the roofs of their homes and businesses, supported by the RET.

Is the uncapped nature of the SRES appropriate?

The SRES should remain uncapped. Indeed, the SRES has a natural cap by way of a limited total market size.

Introducing a cap would introduce significant challenges. History shows that getting the cap right – to meet the combination of economic, technical and social pressures - is unlikely to be achieved, is likely to cause the need for challenging revisions over time and be the catalyst for further boom/bust cycles.

What do you see as being the costs and benefits of an uncapped scheme in terms of economic efficiency, environmental effectiveness and equity?

Operation of the SRES in its current form has led to:

- Lower wholesale energy prices
- Less pressure on networks and generators at some of the key peak load periods and at a time when raising capital for electricity generation is challenging for traditional generation systems.
- An enormous change in consumer attitude to electricity and energy efficiency – consumers are more aware of how much energy they use, how to reduce their usage and the economic and environmental benefits of reduced energy consumption.

Evidence suggests that the highest rates of investment in solar panels and solar hot water are in lower income and regional areas and, conversely, the lowest rates of investment in small-scale renewables has been in higher income areas.

Is the SRES driving investment in small scale renewable technologies? Is it driving investment in skills?

The SRES has been an extraordinary success, unlocking around \$8 billion in private investment in household renewable energy. Around four million Australians now have solar on the roofs of their homes and businesses, an extraordinary sign of Australians taking action themselves to tackle climate change.

The RET has helped build skills that were previously in limited supply in Australia and now allows Australian companies to compete for renewable work in other countries. A number of the Australian Solar Council's members are now exporting their renewable energy skills to countries in the Asia-Pacific region.

Is \$40 an appropriate cap for small-scale certificates given the recent fall in cost of some small-scale technologies, particularly solar PV?

The \$40 REC price is a myth. Recent research from the REC Agents Association shows the average price of a REC is around \$30. It has often traded under \$25, and there is no evidence to suggest that it will consistently trade above \$40 in the future.

Utilities and retailers have used the figure of \$40 to successfully claim windfall profits from uninformed regulators, and ordinary Australians have paid the penalty for that through unnecessarily high power prices. The ACT Independent Competition and Regulatory Commission (ICRC) is the only regulator to have recognised this and taken action in relation to price determinations.

Some companies and commentators have used the \$40 REC price figure to mislead the public by significantly increasing the actual cost of the RET to taxpayers. The CEO of Origin Energy has done this in a number of speeches, including some reported to the Australian Stock Exchange.

ACIL Tasman used a \$40 REC price to provide an erroneous figure for the past and future cost of the RET in their recent report for TRUenergy.

There is no reason to change the cap for small-scale certificates, as the environment has changed significantly. The solar multiplier has now but the CCA should be very clear that the cap has never been reached in the spot market, and is unlikely to be reached often in the future.

The solar credit multiplier has now been reduced to 2 times, and will disappear on 1 July 2013. All governments have now wound back their feed-in tariffs. With the abolition of the solar multiplier, the STC supply and demand balance is not likely to be materially out of balance compared to that seen over the 2011-2012 period. The Australian Solar Council agrees with the REC Agents Association that very little needs to be done to ensure that the STC scheme works and achieves its objectives.

The CCA and the Australian Government should recommend that State Government energy regulators seek to recoup the windfall profits from retailers that have erroneously based their costings on a \$40 REC price.

What is the appropriate frequency for reviews of the RET?

The Australian Solar Council does not support a biennial review of the RET and urges the CCA to recommend the abolition of this review period. A biennial review is effectively a perpetual review, given the time it takes for the review to be undertaken, for the Government to respond and for legislation to be introduced and passed. This creates extraordinary instability for a solar industry that has been bedevilled by the rollercoaster ride of constant changes to State and Federal Government policies and programs. This also imposes a competitive constraint in the most innovative and fastest growing business sector in the country.

Recommendations

The Climate Change Authority should:

- acknowledge the success of the RET in encouraging additional generation of renewable energy, reducing carbon emissions, stimulating private sector investment and creating jobs.
- explore opportunities to increase and extend the Renewable Energy Target after 2020.
- recommend the RET be increased to incorporate any renewable energy projects supported by the Clean Energy Finance Corporation.
- explicitly state the RET Review is being undertaken as a statutory obligation under the *Renewable Energy (Electricity) Act 2000*.
- urgently update its statistics on the uptake and cost of renewable energy, particularly solar.
- recommend the continuation of a fixed gigawatt hour target, rather than a percentage target.
- recommend that the legislated monopoly for accreditation be abolished, and that accreditation be opened to competition.
- The CCA and the Australian Government should recommend that State Government energy regulators seek to recoup the windfall profits from retailers that have erroneously based their costings on a \$40 REC price
- recommend the abolition of the biennial review of the Renewable Energy Target.

ⁱ At the end of 2011, total investment in large-scale renewable energy power stations stood at around \$10.5 billion, Clean Energy Regulator (2012) *About the Renewable Energy Target*, p4. Private investment in residential solar has been around \$10 billion (Australian Solar Council).

ⁱⁱ REC Agents Association, *Gold Medal for Australian Solar*, 20 August 2012.

ⁱⁱⁱ Clean Energy Council (2011) *Clean Energy Australia Report*. In 2010, there were around 8,000 construction, installation and maintenance jobs, and around 12,000 in distribution, sales and installation.

^{iv} Data provided by SunWiz.

^v REC Agents Association, *Solar energy and energy efficiency major contributors to falling power consumption*, 20 June 2012.

^{vi} Based on analysis provided to the CEC by ROAM Consultants.

^{vii} REC Agents Association Fact Sheet, 15 April 2012

^{viii} RenewEconomy, *Solar Insights: China to double 2015 PV target to 40GW*, 10 September 2012.

^{ix} ACIL Tasman (2012) *Achieving a 20% RET*, p16.

^x Data provided by SunWiz.

^{xi} Dr Keith Lovegrove, IT Power.