



2014 CCA REVIEW OF THE RENEWABLE ENERGY TARGET

ENERGY NETWORKS ASSOCIATION SUBMISSION

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ENA RESPONSE

INTRODUCTION

The Energy Networks Association (ENA) welcomes this opportunity to provide a submission to the Climate Change Authority's (CCA) review of the Renewable Energy Target.

The ENA is the national industry association representing the businesses operating Australia's electricity transmission and distribution and gas distribution networks. Member businesses provide energy to virtually every household and business in Australia. ENA members own assets valued at over \$100 billion in energy network infrastructure. ENA members supply gas to 4.5 million users and 120,000 businesses.

The ENA understands the CCA will consider previous submissions to the Warburton Review of the Renewable Energy Target. The ENA made such a submission in May 2014 which noted that, at 6,400 GWh, the output from subsidised technologies under the scheme is now 60% greater than the aspirational target of 4000 GWh by 2020¹. As a result ENA recommended that SRES was no longer required to support market entry of small scale renewable technologies and should be abolished or made technology neutral.

Modelling undertaken for the Warburton review by ACIL Allen suggested that the costs of abatement offered by SRES were \$95 to \$175 per tonne². The ENA supports economically efficient methods to reduce greenhouse gas emissions and position Australia to fully meet its international emissions abatement commitments. ENA considers that technology neutral mechanisms such as the Emissions Reduction Fund provide least cost abatement outcomes to consumers and the community and ENA does not support the

retention of very expensive abatement offered by SRES.

SOLAR POLICIES INCREASE GAS PRICES

In April the ENA commissioned Core Energy Group (CORE) to assess the incremental impact of identified risk factors on projected gas volumes through Australian gas distribution networks, including wholesale gas price changes, demand substitution and a range of existing and potential government policy options. The intent of the analysis was to identify the existing challenges to Australia's domestic downstream gas markets; the incremental impact of distortionary government policy settings; and the consequences for consumers of government policy choices.

The ENA has since published the Core Report and welcomes the opportunity to raise awareness of the report with the Climate Change Authority (CCA).

One of the key findings of the CORE analysis is that the most significant policy measures impacting on gas demand in the residential and commercial markets are Government solar policies.

As **Figure 1** demonstrates, these subsidies result in a significant distortion of the gas market. The high solar impact curve closely reflects the effect of all policies that have a negative effect on gas demand.

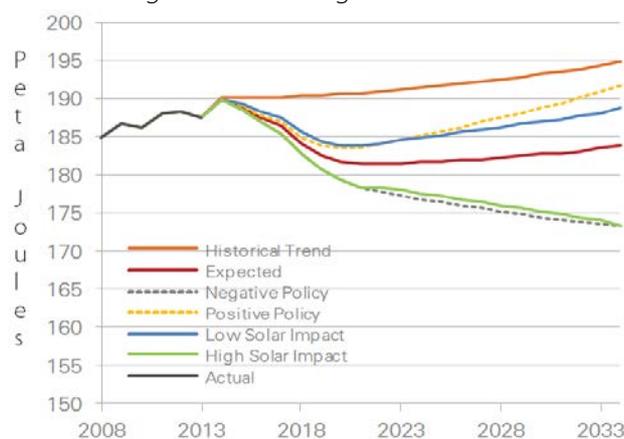


Figure 1: Effect of solar policies on residential and commercial gas demand.

¹ Page 5, Review of the Renewable Energy Target Expert Panel Call for Submissions, Department of Prime Minister and Cabinet.

² Page 72, Renewable Energy Target Scheme - report of the Expert Panel, August 2014 (the Warburton Review).

The analysis by CORE indicated that if governments remove distorting solar policy measures like SRES, there is the potential for an additional 170,000³ gas connections over and above the business as usual scenario by 2034. The CORE Report found that despite wholesale prices doubling, this increase in residential and commercial gas consumers would mean that all consumers could pay lower retail gas bills in 2034 if the distorting subsidies to solar technology were removed. Retail gas bills for residential and commercial customers in 2034 would be about \$50 per year (or 5.4%) lower than current levels.

If, however, Governments were to extend solar subsidy programs (such as through the previously proposed Million Solar Roofs program), it would lead to a predicted loss of 130,000 potential gas connections exacerbating wholesale price impacts. CORE predicted that this would result in retail gas bills which are about \$80⁴ per year (or 8.24%) higher than current levels in 2034.

In summary, the modelling and analysis by CORE demonstrates that gas demand is significantly affected by an SRES scheme which is notionally based on abatement achieved, yet is not technologically neutral. By excluding efficient gas hot water systems which have the potential to provide greater greenhouse gas emissions abatement than technologies supported by SRES, the scheme not only fails to achieve least cost emissions abatement, it also directly contributes to inflating retail gas prices, meaning consumers pay more. This is particularly concerning given the challenges for gas consumers in managing the transition to an internationally-linked wholesale price.

SRES SUBSIDIES ARE NO LONGER NECESSARY

Australia's penetration rates of small-scale solar panels are now amongst the highest in the world, reaching 25% in South Australia and 23% in Queensland. Factors other than feed-in tariffs are driving demand

³ Page 66, ENA Gas Network Sector Study, Core Energy Group, August 2014.
⁴ Based on an average \$1,000 per year gas bill. See Table 5.3 on page 130, AER State of the Energy Market 2013.

such as the dramatic drop in the costs of photovoltaic panels as illustrated in **Figure 2**⁵.

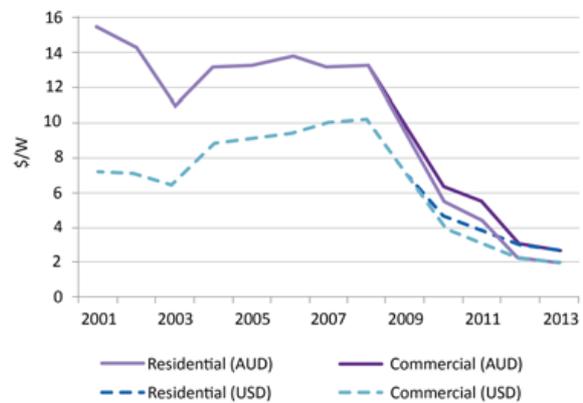


Figure 2: Reduction in costs of photovoltaic panels

At 6400 GWh, the energy output from the SRES has already exceeded both the original scheme target (of 4000 GWh by 2020) set in 2010, and the revised projection for 2020 released by the AEMC in 2011, as demonstrated in **Figure 3**.

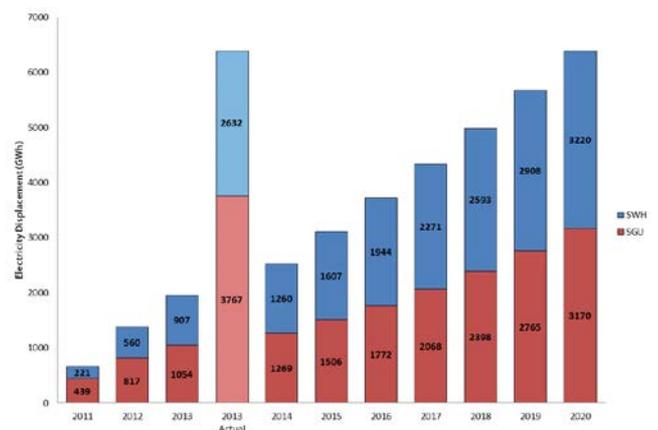


Figure 3: SRES has already achieved its aims and is no longer required (Source: 2011 AEMC Interim Report⁶ and figures supplied to the Warburton Review by the Clean Energy Regulator⁷)

The SRES is no longer required to support the installation of solar panels and solar water heaters in Australia. The market for photovoltaic technology is demonstrably established.

⁵ Page 65, Renewable Energy Target Scheme - report of the Expert Panel, August 2014 (the Warburton Review).

⁶ Actual SRES figures for 2013 inserted into graph of predictions on page 12, Impact of the enhanced Renewable Energy Target on energy markets, Australian Energy Market Commission, November 2011.

⁷ SWH/PV breakdown taken from page 9, Renewable Energy Target Scheme - report of the Expert Panel, August 2014 (the Warburton Review)

With over 1.3 million small scale photovoltaic systems now in Australia, there is no public policy justification for subsidised installations of photovoltaic systems.

Specific issues with SRES support of Solar and Heat Pump Water Heaters

The continued support of solar and heat pump water heaters in SRES does not meet one of the main objectives of the *Renewable Energy (Electricity) Act 2000* which is to encourage the additional generation of electricity from renewable sources.

The 2012 CCA review of the RET stated that:

'One of the objectives of the RET is to encourage additional electricity generation from renewable sources. In principle, technologies that displace electricity, rather than generate it, do not further this objective and, while important, do not belong in the RET.'

The CCA also stated that:

Displacement technologies are better suited to an energy efficiency 'white certificate scheme' than the RET⁸.

The ENA suggests that the Emissions Reduction Fund is suited to supporting displacement technologies and has supported their inclusion on several occasions.

Table 1 formed part of ENA's response to the Warburton review in May 2014 and demonstrates that heat pumps receive an average of \$1,100 per unit whilst Solar Water Heaters receive around \$1,300 to \$1,500 per unit under SRES. By providing this support for more expensive but less efficient technologies, SRES supports higher electricity bills for consumers.

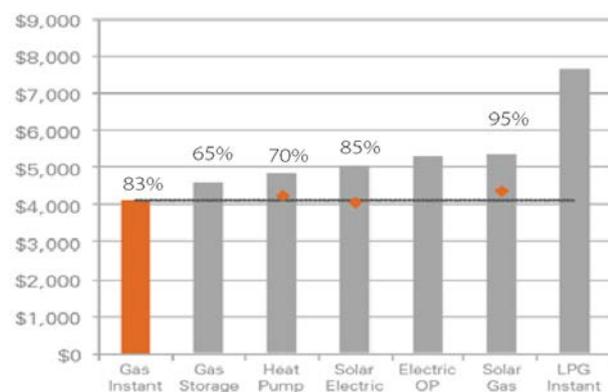
	Efficiency*	Appliance	Installation	Total	STCs	Net cost	Equivalent subsidy foregone
Solar (gas boost)	95%	\$4,000	\$1,900	\$5,900	\$1,500	\$4,400	
Solar (electric boost)	85%	\$3,800	\$1,500	\$5,300	\$1,300	\$4,000	
Gas (7 star instantaneous)	83%	\$1,800	\$1,000	\$2,800	\$0	\$2,800	\$1,200 - \$1,300
Electric heat pump	70%	\$3,200	\$600	\$3,900	\$1,100	\$2,800	
Gas (5 star instantaneous)	70%	\$1,400	\$800	\$2,200	\$0	\$2,200	\$1,100
Gas (5 Star storage)	65%	\$1,400	\$600	\$2,000	\$0	\$2,000	\$900
Electric resistance		\$1,200	\$500	\$1,700		\$1,700	

*Defined as the reduction in greenhouse gas emissions compared with electric resistance hot water heaters. Source: ENA research and Building Codes Queensland, Review of Hot Water System Laws 2012.

Table 1: comparison of hot water heating options under SRES, versus gas hot water heaters.

Both electricity bills and emissions would be lower if the customer replacing an electric resistance hot water system chose the 7 star gas appliance over the SRES subsidised heat pump. This highlights the poor public policy outcomes inherent in the design of the SRES.

The analysis conducted by Core Energy Group for ENA found that instantaneous gas hot water appliances are the lowest cost alternatives to traditional electric resistance water heaters for water heating when assessed on a full life-cycle cost basis. As the ENA submission in May 2014 to the Warburton Review noted, gas hot water systems can achieve approximately the same abatement (83%) outcome as solar hot water systems (85%) and greater abatement than heat pumps (75%). In **Figure 4** the full life cycle costs are demonstrated by the grey bars.



Source: Core Energy Group (2010 year)

Figure 4: Inefficient use of incentives for water heating technologies and appliance abatement

⁸ Both quotes on Page ix, Renewable Energy Target Review - Final Report, the Climate Change Authority, December 2012

The position of the orange diamonds shows the effective cost after taking into account subsidies and the percentage values over the grey bars demonstrate the potential abatement from each technology.

Figure 4 highlights the distortionary impact of SRES which subsidises solar and heat pump hot water heaters but provides no equivalent subsidy to gas hot water systems, which can deliver comparable greenhouse gas reductions, at lower installation, maintenance and operating cost.

In addition to concerns around continued support for displacement technologies, the Warburton Review indicated that the current level of support for these technologies may be overstating their abatement outcomes. The Warburton Review quoted Mr Alan Pears from RMIT University and Sustainable Solutions who stated:

There is some evidence that average electricity savings for those who install solar hot water are smaller than is estimated by the regulator. For example, a 2011 IPART study suggested a typical solar HWS in NSW reduced electricity consumption by 1 400-1500 kWh/year, which is around half of the number of STCs they now create.⁹

This is supported in a report published by the Department of Industry on behalf of the Equipment Energy Efficiency (E3) Program. The E3 Report was commissioned to conduct research into the actual performance of Solar Water Heaters and compare this SRES performance values. E3 found that:

...recent energy efficiency performance testing has revealed discrepancies with reported energy efficiency claims. ... Test results show that a number of components failed existing AS/NZ Standards and some claims being made to consumers were overstated when compared to the E3 Committee's independent tests.

Furthermore research conducted for the E3 found that:

...faulty or poorly designed systems may not be correctly modelled and the behaviour of some systems in cold areas is also not accurately accounted

for – hence energy savings claims may not reflect actual performance. In addition, there appear to be some poor installation practices that result in low or no energy savings¹⁰.

The E3 publication indicates that the provision of subsidies under SRES is based on faulty information that does not reflect actual performance.

ENA suggests that the continuation of the SRES at a time when the gas sector is undergoing unprecedented change continues to disadvantage the gas sector with a net loss of value to Australian consumers and taxpayers for a level of abatement that could be achieved more efficiently through abolishing SRES or ensuring the SRES supports fuel neutral solutions to abatement.

CCA SHOULD CONSIDER DISPLACEMENT TECHNOLOGIES AGAIN

The ENA supports least cost abatement with technology neutral measures. The SRES highlights the risk of technology-specific subsidies, continuing to fund high costs emissions abatement using established renewable or displacement technology. It creates a market distortion for home energy appliances and use, which fails to respond to changing efficiency performance of alternative (e.g. gas) technologies

ENA notes that the Warburton review offered two options for altering the SRES – its abolition or bringing forward the phase out of SRES. The Warburton Review did not consider a third option in respect of SRES, that of making SRES technologically neutral. This could be achieved through the removal of those displacement technologies from the scheme which have been selectively included (such as solar hot water systems or heat pumps).

The 2012 CCA Review stated that the support of displacement technologies in SRES '*highlights the difficulties inherent in technology specific measures*

⁹ Page 72, Renewable Energy Target Scheme - report of the Expert Panel, August 2014 (the Warburton Review)

¹⁰ Page 1, Product Profile: Solar Water Heaters, Department of Industry, August 2014.

*rather than broad-based measures... that require that boundaries be drawn around eligibility.*¹¹

The 2012 CC also observed that:

*...existing displacement technologies compete with electric and gas water heaters, but still at much higher equipment costs. Electric water heaters are being phased out in most states and territories, and the inclusion of renewable forms of water heating in the SRES supports this transition*¹².

While acknowledging the higher costs of renewable technologies, the 2012 Review did not acknowledge that gas water heaters offer a low cost, high abatement option for homeowners to transition away from electric resistance water heaters. The ENA suggests that the Australia's residential emissions profile could be lowered more effectively by supporting all water heating abatement technologies, not just the most expensive options.

The 2012 CCA report recommended against the inclusion of new displacement technologies noting that:

*...additional technologies including displacement technologies could increase the cost of the RET*¹³.

The retention of displacement technologies in the SRES results in 4.5 million homes and 120,000 businesses in Australia that are connected to gas networks continuing to be disadvantaged as demonstrated by the CORE Energy report.

The ENA suggests that the CCA reconsider its 2012 recommendation to retain displacement technologies as part of SRES. If such a change was made to the scheme, this would still permit these technologies to compete for subsidies in the technology neutral Emissions Reduction Fund (ERF). Alternatively, a fuel neutral approach can be achieved by the inclusion in SRES of those displacement technologies which are currently excluded (for example gas hot water systems).

GOVERNMENT ACTION ON RET

There is no economic argument that solar hot water heaters, photovoltaic systems and heat pump technologies should continue to receive further incentives at the expense of other electricity consumers who subsidise the users of these technologies. Photovoltaic systems are now found on 1.3 million roofs in Australia with a further 890,000¹⁴ solar water heaters and heat pumps installed. The market penetration for these systems is sufficiently mature and these technologies do not require any further subsidy. Consistent with competition policy and regulatory best practice, it is also desirable that government mandated subsidy measures in competitive markets be removed where the scheme has demonstrably achieved its purpose.

There is an opportunity for the Australian Government to take action that is in the long term interests of consumers, and which has the potential to reduce retail gas prices by 3.5% below CPI by 2034, without compromising Australia's international commitment to reducing greenhouse gas emissions.

It is clear that the Australian solar industry is no longer at a stage where it requires government mandated subsidies in a manner which distorts other competitive markets. Submissions to the Warburton review also noted that: *...the SRES can be abolished at short notice without stranding investments or causing sovereign risk*¹⁵

The abolition of the Small-scale Renewable Energy Scheme or the removal of displacement technologies from the scheme would return a level playing field to downstream appliance markets for hot water systems. The ENA supports the inclusion of efficient greenhouse gas abatement technologies in the fuel neutral Emissions Reduction Fund (ERF) and has made a number of submissions to the Government on this issue.

¹¹ Page ix, Renewable Energy Target Review - Final Report, Climate Change Authority, December 2012.

¹² Ibid, Page 119.

¹³ Ibid, Page 118.

¹⁴ Figures from the website of the Clean Energy Regulator November 2014

¹⁵ Page 70, Renewable Energy Target Scheme - report of the Expert Panel, August 2014 (the Warburton Review)

SUMMARY OF ENA POSITION

The CCA should recognise:

1. The SRES represents a high cost form of abatement which is not technology neutral.
2. If it has been justified as a market development scheme in the past, then this is clearly no longer relevant given the scale and penetration of small-scale renewables in Australia.
3. The SRES increase gas prices to gas customers as demonstrated by the CORE report and distorts downstream markets for hot water systems.
4. The SRES subsidises some forms of abatement, such as heat pumps, which result in more emissions than the unsubsidised gas hot water systems.

The ENA supports:

The immediate cessation of the SRES;

If the SRES is not immediately ceased, then displacement technologies should be immediately removed from the SRES.

The ENA does not support:

The continued inclusion of SRES under the RET;

The continued inclusion of displacement technologies in the SRES; or

The continued inclusion of heat pumps under SRES.