

16 May 2014

Renewable Energy Target Review
Department of the Prime Minister and Cabinet
PO Box 6500
Canberra ACT 2600

Lodged by website: <https://retreview.dpmc.gov.au/online-submissions>

ENA Response to the Review of the Renewable Energy Target

The Energy Networks Association (ENA) welcomes the opportunity to make a submission on the Review of the Renewable Energy Target.

The Energy Networks Association (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.

The ENA believes that the Government should consider changes to the RET that avoid creating artificial market distortions, limit the possibility of increased energy prices and create a level playing field for all low emissions technologies through the removal of unnecessary and unfair incentives to specific technologies. In particular the ENA has significant concerns about the distorting effect of the RET on small scale technologies under the Small-scale Renewable Energy Scheme (SRES). ENA believes that SRES does not offer a technologically neutral solution to reducing household emissions.

SRES has achieved its objectives

Even with changes in feed-in tariffs, SRES had already exceeded its aspirational target of 4000 GWh by 2020 in 2012¹. It is therefore hard to argue that solar water heaters, Photovoltaic (PV) systems and heat pump technologies should continue to require further subsidies at the expense of other electricity consumers. With over 2 million installations in a housing stock of around 9 million² private residences in Australia, ENA considers that the market for these systems is mature and these technologies do not require any further support. Installers have taken advantage of the availability of systems at low wholesale prices, high feed in tariffs in some States and the solar credits multiplier to create a surge of market interest, especially in PV systems. PV is now cost effective without any support and its relative cost will continue to decline.

SRES is expected to cost \$4.4 Billion over 2011-2020³. Abatement under SRES was estimated by the Australian Energy Market Commission (AEMC) to have cost up to \$500 per tonne CO₂-e in 2011, falling to \$300 per tonne in 2020. SRES therefore amounts to a very costly program for the abatement outcomes.

Abatement measures should be technology neutral

Residential water heating represents approximately one quarter of domestic energy use in Australia. It is usually either the largest single source of greenhouse gas emissions in the typical Australian home or the second largest source behind space heating and cooling. In Victoria an average electric resistance hot water system is estimated to produce 4.5 tonnes Carbon Dioxide equivalence (Co₂-e) per year. Australia wide, emissions due to electric resistance hot water systems approach 12 million tonnes of CO₂-e per year.

¹ Page 5, Review of the Renewable Energy Target Expert Panel Call for Submissions, Department of Prime Minister and Cabinet. http://retreview.dpmc.gov.au/sites/default/files/papers/RET_Review_Call_Submissions.pdf.

² ABS 2011 data http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/0

³ Source: AEMC (2011) INTERIM REPORT Impact of the enhanced Renewable Energy Target on energy markets

The ENA supports incentive programs that provide a technologically neutral solution to emissions reduction. SRES is not fuel neutral and discriminates against gas hot water systems by providing up to \$40 per Small-scale Technology Certificate (STC) through the Clearing House Mechanism for a heat pump or solar hot water system that replaces an electric resistance water heater. As shown in table 1 below, SRES provides incentives to the homeowner of around \$1,500 to install a high performing solar water heater.

Instantaneous gas hot water systems can achieve over 80% emissions abatement compared to an electric resistance water heater. These systems produce less than 1 tonne CO₂-e per year yet compete in an appliance market where the homeowners who install instantaneous gas water heaters receive no subsidy for the abatement they produce. This inequity is demonstrated in the table below that details the relative efficiencies of hot water heating options that receive incentives under SRES compared to gas alternatives and an electric resistance water heater.

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

	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.

As shown in Table 1, a 7 star gas instantaneous hot water system reduces emissions by around 83% over an electric water heater⁴. This is 13% more efficient than an electrically boosted heat pump which is \$1,100 more expensive. The effect is that electricity consumers are paying higher bills for an SRES that subsidises less efficient emissions abatement than is available from 7 star hot water systems. 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.

Table 1 also demonstrates that a 7 star gas instantaneous hot water system achieves emissions abatement only slightly less than an electrically boosted solar water heater. However the solar water heater costs more to install and, even after receiving \$1,300 in SRES incentives its installed cost remains approximately \$1,200 more expensive than the 7 star gas instantaneous system for a similar abatement outcome.

⁴ Rinnai web site for the Rinnai Infinity 26 Enviro model. <http://www.rinnai.com.au/hot-water/continuous-flow-hot-water-systems/infinity/26-enviro/>

Gas hot water heaters can achieve additional abatement penetrating markets in areas unsuitable for solar or heatpumps (e.g. highrise buildings or cold areas) – yet SRES promotes the unsuitable technology over better alternatives. In some cases, such as Canberra, sub-zero nights are not uncommon in winter. In these conditions, heatpumps may cease to be effective meaning that SRES is providing an incentive for an inappropriate technology.

Does SRES meet the original objectives of the *Renewable Energy (Electricity) Act 2000*?

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. Solar water heaters and electrically boosted heat pump water heaters do not generate renewable electrical energy. Rather they increase the efficiency with which fossil fuels are consumed by using solar inputs or ambient air temperature to contribute to water heating. There is potential to improve the efficiency of all appliances irrespective of the fuel they use, for example, highly efficient 7 star natural gas water heaters are now available yet SRES distorts the market towards a specific technology.

The Climate Change Authority (CCA) in its' review of the RET in December 2012 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 Review also stated that '*This issue, incidentally, highlights the difficulties inherent in technology specific measures rather than broad-based measures... that require that boundaries be drawn around eligibility*'.⁵

Gas instantaneous systems for water heating have a comparable reduction in emissions to an electrically boosted solar water heater and offer considerably more emissions abatement at a lower cost per unit than electrically boosted heat pumps. Instantaneous gas hot water heaters are therefore more effective at reducing emissions in the electricity sector but receive no incentives under SRES. The ENA does not support programs that support specific technologies over others, believing this to be creating a market distortion that is then difficult to adjust if a more effective technology emerges during the life of the program.

Government action on RET.

The RET Review Panel should recommend that the Government abolish SRES on the basis that SRES has achieved its objectives, the market for small scale renewable technologies is mature and incentives are no longer needed, that SRES does not meet the objectives of the RET and that SRES disadvantages other more effective abatement technologies.

⁵ Renewable Energy Target Review, Final Report, Climate Change Authority, December 2012, http://climatechangeauthority.gov.au/sites/climatechangeauthority.gov.au/files/20121210%20Renewable%20Energy%20Target%20Review_MASTE%20R.pdf

Summary of ENA position

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;
- The continued inclusion of heat pumps under SRES.

Any questions about our submission should be addressed to ENA's Director of Energy Infrastructure and Gas Markets, Dougal Torrance, by email to dtorrance@ena.asn.au or by telephone on (02) 6272 1511.

Yours sincerely



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