

Submission Template

COAG Review Discussion Paper 1 – Eligibility of new small-scale technologies and heat pumps

Overview

This submission template should be used to provide comments on:

COAG Review Discussion Paper 1 – Eligibility of new small-scale technologies and heat pumps

The purpose of this discussion paper is to provide an introduction to the key issues relating to the eligibility of new small-scale technologies and heat pumps within the RET, and to encourage input on these issues from individuals, businesses and organisations to inform the review process.

Stakeholders are asked to use the template provided to answer the questions posed in the discussion paper. The Department will also accept any other documents, further information, costing tables etc that are attached to the submission template.

Contact Details

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Confidentiality

All submissions will be treated as public documents, unless the author of the submission clearly indicates the contrary by marking all or part of the submission as 'confidential'. Public submissions may be published in full on the Department of Climate Change website, including any personal information of authors and/or other third parties contained in the submission. If any part of the submission should be treated as confidential then please provide two versions of the submission, one with the confidential information removed for publication.

A request made under the *Freedom of Information Act 1982* for access to a submission marked confidential will be determined in accordance with that Act.

Do you want this submission to be treated as confidential? **Yes** **No**

Submission Instructions

Submissions should be made by **close of business 30 October 2009**. The Department reserves the right not to consider late submissions.

Where possible, submissions should be lodged electronically, preferably in Microsoft Word or other text based formats, via the email address - [**RET@climatechange.gov.au**](mailto:RET@climatechange.gov.au).

Submissions may alternatively be sent to the postal address below to arrive by the due date.

Renewable Energy Sub Group Secretariat
Department of Climate Change
GPO Box 854, Canberra ACT 2601

For more information phone: 02 6159 7428

Existing eligibility of small-scale technologies under the RET

Question 1: Are there any new small-scale renewable energy technologies not currently eligible under the RET which may be considered for eligibility to participate in the scheme? Details are sought on:

- a description of the technology and how it works (including how it uses renewable energy to generate or displace electricity); and
- the extent to which the technology has been or is ready to be deployed to the market, such as industry size, capacity and market penetration.

WA SEA has no specific comments in respect of this question.

However in general terms, it is our view that the RET scheme should be open to new technologies not yet available in commercial form and prescription of particular types of systems provide a disincentive for the adoption of new technologies. As such, the RET scheme should avoid prescriptive approaches that might prevent newer and potentially better renewable energy solutions from being adopted.

The RET eligibility in this case needs an element of “technological neutrality”, which does not favour one Renewable Energy technology over another, which creates an artificial market dynamic and can disadvantage some businesses and their technology due to fiat rather than reason. In that context, the following comments on alternate technologies that may be considered, should also take into account our comments on energy generation vs. displacement made in Question 3 of this response.

WA SEA is aware that some technologies, such as ground source heat pumps / geothermal heat pumps (GSHP/GHP) have been excluded from the RET program. The inclusion of these technologies for either direct use applications (e.g. HVAC) or power generation should be included in the scheme and be eligible for generating RECs. This technology is mature and is used extensively in the Northern Hemisphere, but to a much lower extent in Australia. WA SEA is aware of providers of the technology and services for GSHP/GHP installation in Australia and that they are currently in use. As such the exclusion of these systems as being eligible for the REC is an example of market distortion mentioned above.

Another example of a technology that has not been included under the current scheme is solar powered air conditioning (SPAC) that combines a solar hot water system (SHWS) and an adsorption chiller. This acts as a reverse heat pump to cool water for air-conditioning and both technologies are well known and established. If SHWS' are eligible for the REC, then there is no logical reason for SPAC to be excluded. Such systems are commercially available in North America.

Where appropriate sustainable biomass generation may also be included as an eligible generation system (either on or off grid) where this is used in a combined heat and power (CHP) generation system and electricity generation is part of the system.

Question 2: Where possible, provide examples of the amount of renewable energy produced by a system in a particular application, noting: geographic location; size; and the amount of fossil fuel based energy also used in producing the total energy output (if any).

WA SEA does not have any specific information to provide in relation to this question and believes that such questions are best addressed by businesses directly involved with the technology.

Eligibility of heat pumps

Question 3: Should heat pumps continue to be eligible under the RET? How cost-effective are heat pumps compared to solar hot water systems and conventional systems such as gas and electric systems? In particular, details are sought on:

- the capital cost, including installation;
- annual running costs, including maintenance;
- the effective life of the system; and
- annual savings compared to using fossil fuel based energy such as gas or electricity.

It is the opinion of WA SEA that the use of heat pumps are an energy efficiency or energy displacement system and do not generate Renewable Energy, rather they are a direct use solution. In particular, where a heat pump is used in the recovery of waste heat, they should not be eligible for REC eligibility. The reason for this is that they either are utilising waste heat from fossil fuel systems or systems that are powered by Renewable Energy and consequently no REC should attach to the former and for the latter, the REC has already been created at the point of generation and no second REC should be created in heat re-use.

In addition to this, the scheme should also consider multiple small-scale systems where these are deployed on a large scale by a single entity or multiple entities working together (i.e. joint venture or partnership).

When discussing heat pumps, it is necessary to consider their eligibility overall as even systems directly powered by Renewable Energy are energy use displacement or efficiency systems rather than sources of Renewable Energy electricity. As such, the use of these systems, particularly in relation to the point above of multiple small systems may receive advantages under energy efficiency schemes and the CPRS which are inconsistent with also receiving RECs. That is, creating a situation where there is access to multiple cost saving or support mechanisms.

Question 4: What is the effectiveness of heat pumps in reducing greenhouse gas emissions in different circumstances?

Heat pumps are useful in reducing greenhouse gas emissions where they are either directly displacing fossil fuel energy sources (e.g. GSHP/GHP, Air heat pumps) as well as utilising waste heat sources to improve efficiency. However, as mentioned above, the issue of REC eligibility needs to be carefully considered where the original energy source has already received a REC, or is fossil fuel sourced. The RET / REC eligibility needs to ensure that 'phantom' RECs are not created from sources already receiving RECS or that are not eligible.

Cost-effectiveness, reliability and market deployment

Question 5: Information is sought on the cost-effectiveness of any new technology identified, in particular:

- the capital cost of the technology, including installation;
- annual running costs, including maintenance;
- the effective life of the system;
- annual savings compared to using fossil fuel based energy such as gas or electricity; and
- for electricity generation, the capacity factor of the system.

WA SEA is a technology neutral organisation, and as such is not in a position to recommend specific technologies. However, in the consideration of comparisons between new and existing Renewable Energy technologies, and existing fossil fuel technologies, we believe that a whole of life-cycle approach needs to take in cost-benefit analysis. That includes, in the case of fossil fuel powered systems, recognising that there is value in “sunk cost” and that depreciated value of assets does not provide an equitable reflection of the costs when comparisons are undertaken. To do so would provide a distinct and unfair advantage for established and legacy technologies.

Impact on existing eligible technologies and REC market

Question 6: Would including new small-scale technologies or amending the eligibility of heat pumps have a major impact on the deployment of existing eligible technologies?

It is possible that the amendment of heat pump eligibility and the introduction of new technologies will have an impact on the deployment of existing technologies. However, this is not necessarily a bad thing, considering that future developments may improve Renewable Energy outcomes for the RET and REC programs. For example, it had been noted by the Office of the Renewable Energy Regulator (ORER) that since the inclusion of SHWS in the program, three times as many RECS have been created by this technology alone compared to all others on the market. This flood of new RECs, boosted by SHWS inclusion has seriously undercut the value of RECs from around \$50 to approximately \$29. This 40% reduction in REC value has had a significant negative impact on larger scale Renewable Energy project economics through the reduction of future value of the RECs.

The eligibility of new technologies that generate electricity and their inclusion in the RET program may provide additional incentive for their adoption. Without incentive, new Renewable Energy technologies face a number of barriers to overcome from competition for consumer dollars and small scale economics as well as cost barriers that have attached due to the increase in the number of RECs due to the inclusion of SHWS in the scheme.

Any other additional comments