



**Council of Australian Governments (COAG)
Renewable Energy Sub Group**

**COAG review of specific
Renewable Energy Target (RET) issues**

Discussion Paper 1

**Eligibility of new small-scale technologies
and heat pumps**



INFORMATION FOR RESPONDENTS

Key Dates

9 October 2009	Discussion paper available on the Commonwealth Department of Climate Change (DCC) Website
30 October 2009	Submissions on discussion paper due

Submission Guidelines

These guidelines outline the requirements for submissions on this discussion paper in relation to a COAG review of specific Renewable Energy Target (RET) issues:

1. Submissions are invited from all interested stakeholders;
2. Submissions should utilise the **Submission Template** provided on the website to address the questions raised in this discussion paper. Additional comments are also welcomed;
3. Where possible submissions should be lodged electronically to the email address below, preferably in Microsoft Word or other text based formats. Alternatively, submissions may be sent to the postal address below to arrive by the due date;
4. **Submissions will not be treated as confidential** and may be made publicly available. Extracts of submissions may also be made publicly available in the final report provided to COAG. If a submission or extracts of a submission are to be kept confidential, please indicate this in the **Submission Template**; and
5. All submissions are due **Close of Business 30 October 2009**. The Secretariat reserves the right not to consider late submissions.

Submissions should be sent to:

Email: RET@climatechange.gov.au

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

Contact details

Further information relating to the review and copies of this paper are available on the DCC website at www.climatechange.gov.au/renewabletarget/consultation.

Hard copies are available on request via telephone: 02 6159 7428 or email RET@climatechange.gov.au.

Important Notice

This paper is intended as a basis for consultation with stakeholders. The views and opinions expressed in this publication do not represent Government policy and do not commit the Australian Government to any particular proposal. While reasonable efforts have been made to ensure that the contents of this publication are factually correct, the Australian Government does not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.

Introduction

The expanded national Renewable Energy Target (RET) scheme is designed to ensure that 20 per cent of Australia's electricity supply is from renewable sources by 2020. Legislation to implement the expanded national RET scheme was passed by the Commonwealth Parliament on 20 August 2009.

The Council of Australian Governments (COAG) agreed to examine further some of the eligibility provisions of the RET for new small-scale technologies as well as heat pumps and rules for off-grid resource projects to ensure that the eligibility rules remain relevant over time to reflect new technologies and recent developments in renewable technology and resource project development structures.

The COAG review is also considering the potential for introducing a measure to provide additional support to off-grid renewable generation within the RET.

Terms of Reference for the Review are attached. Three discussion papers have been released on the issues outlined above. In addition to this discussion paper:

- Discussion Paper 2 relates to the self-generation provisions of the RET for off-grid resource projects; and
- Discussion Paper 3 relates to support for small-scale, off-grid generation.

Focus and intent of this discussion paper – new small-scale technologies and heat pumps

The RET COAG review Terms of Reference state that the review will consider:

- whether any new small-scale renewable technologies that are not currently eligible should be included in the RET, as well as the eligibility of heat pumps. The review will have regard to:
 - the extent to which the technology is cost-effective, reliable, and able to be readily deployed in the market; and
 - the impact that inclusion in the RET would have on deployment of existing eligible technologies and the market for Renewable Energy Certificates (RECs), noting that there would be no change to annual targets under the RET legislation.

For the purpose of the review, new small-scale technologies are devices which, drawing from a renewable energy source, either generate electricity or replace and perform the same function as specific electrical devices (thereby displacing fossil fuel based electricity consumption). New technologies include devices which fit this description and which have been recently developed and are not currently considered eligible to create RECs. Small-scale technologies are generally considered to be for use by households and generally not for use on a commercial scale.

The purpose of this discussion paper is to provide an introduction to the key issues relating to 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.

Existing eligibility of small-scale technologies under the RET

The RET is designed to encourage the deployment of both large and small-scale renewable energy technologies, from large power stations to household renewable energy systems. Eligible renewable energy sources under the RET include hydroelectric, wind, solar, biomass, geothermal, wave and tidal energy.

The RET scheme guarantees a market for additional renewable energy generation, using a mechanism of tradeable Renewable Energy Certificates known as RECs (backed by a legislative obligation). In terms of small-scale technologies, eligibility to create RECs includes both small generation unit installations, as well as solar water heater installations which use renewable energy and displace conventional electricity generation.

Eligible small generation unit installations currently include small-scale solar photovoltaic (PV) systems up to a capacity limit of 100 kilowatts (kW), small wind turbine systems up to 10 kW, and micro hydroelectric systems up to 6.4 kW. Annual generation limits also apply, of 250 megawatt-hours (MWh) per year for small-scale solar PV, and 25 MWh per year for small wind and micro hydroelectric systems.

The RET's rules allow owners of small renewable energy systems to create at the time of installation RECs equivalent to the output of up to 15 years operation depending on the system type. In the case of small generation units, Solar Credits provide additional support. This review is not considering the extension of the Solar Credits mechanisms to new small-scale technologies. Solar Credits apply to small generation units, rather than technologies like solar water heaters which use renewable energy and displace conventional electricity generation.

The review is considering whether some recently developed technologies that are not currently eligible under the RET should be able to create RECs. The review is also considering the continued eligibility of heat pumps.

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.

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).

Eligibility of heat pumps

Solar water heater installations include installations of solar and heat pump hot water systems. Heat pumps are not specifically defined in the legislation but are eligible by way of their inclusion in the Australian Standard 2712 for solar water heaters. Solar water heaters and heat pumps are eligible to create RECs under the RET as they use renewable energy sources and

displace the consumption of fossil fuel based electricity. Solar water heaters have been eligible to create RECs under the previous Mandatory Renewable Energy Target (MRET) since 2001.

No size limits apply to solar and heat pump water heater installations under the RET.

Heat pump water heaters extract heat from the atmosphere, and transfer it to a water storage cylinder. This process uses significantly less electricity than an electric water heater. There has been significant uptake of heat pumps due to their relatively low cost compared to other high-efficiency and renewable hot water systems. There are a number of support measures that have encouraged uptake including the Commonwealth Solar Hot Water Rebate, state and territory rebates, and minimum energy efficiency requirements for new homes.

The review is considering whether heat pumps continue to require inclusion under the RET to support market uptake.

Concerns have also been raised¹ regarding the potential for heat pumps to create perverse outcomes on greenhouse gas emissions in some circumstances. For example, this may occur in climate zones where heat pumps operate at sub-optimal efficiency levels and the emissions intensity of the electricity grid is relatively high.

Recent changes to the RET regulations announced by the Minister for Climate Change and Water on 10 September 2009 have addressed a separate issue regarding the installation of inappropriately large solar and heat pump water heaters to create excessive RECs. The Regulations now require statutory declarations to ensure that, for units with a capacity over 700 litres, the unit is appropriately sized for its intended use and that there is an intention that it remain in its original configuration and location for the life of the unit.

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.

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

Cost-effectiveness, reliability and market deployment

In considering the need for incentives to provide support for the deployment of new renewable energy technologies, the review will take into account the costs and benefits of those technologies and the impact of their deployment on uptake of other technologies

¹ For example, in the Senate Inquiry into the *Renewable Energy (Electricity) Amendment Bill 2009 and a related bill*, August 2009.

within the RET. The review will also have regard to the RET's objective of promoting cost-effective renewable energy uptake.

In order to make a contribution to meeting the RET, the review will consider the extent to which any new small-scale technologies are cost-effective, reliable, and able to be readily deployed in the market.

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.

Impact on existing eligible technologies and REC market

Deployment of existing eligible technologies

Small-scale technologies that are currently eligible under the RET, including small generation units as well as solar water heaters and heat pumps are supported through deeming arrangements which assist with the upfront costs of installing these systems. Deeming arrangements allow for RECs to be created at the time of installation for the megawatt-hours of energy the system is deemed to generate or displace over the life of the system. Deeming arrangements may be appropriate for any new technologies identified.

Any decision to include new small-scale technologies or amend the eligibility of heat pumps will need to be assessed in terms of the impact this will have on other eligible technologies under the RET. As there would be no change in annual targets under the RET, this could affect the remaining amount of RECs available to support the deployment of other renewable energy technologies.

For example, the inclusion of new small-scale technologies may lead to the deployment of less large-scale generation. The magnitude of this effect would depend on the level of additional uptake of the new technologies.

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?

Attachment A: COAG Terms of Reference - Review of Specific Renewable Energy Target (RET) Issues

The expanded national Renewable Energy Target (RET) scheme will deliver on the Government's commitment to ensure that 20 per cent of Australia's electricity supply is from renewable sources by 2020.

Legislation to implement the expanded national RET scheme was passed by the Commonwealth Parliament on 20 August 2009.

As part of the process of designing the RET scheme the Council of Australian Governments (COAG) agreed to examine further some of the eligibility provisions of the RET for new small-scale technologies as well as heat pumps and rules for off-grid resource projects to ensure that the eligibility rules remain relevant over time to reflect new technologies and recent developments in renewable technology and resource project development structures.

Following discussions on the RET legislation, the COAG review is also to consider whether it would be feasible to introduce a measure to provide support to off-grid renewable generation within the RET.

The Review is to provide a report to COAG before end-2009 regarding:

1. Whether any new small-scale renewable technologies that are not currently eligible should be included in the RET, as well as the eligibility of heat pumps. The review will have regard to:
 - 1.1. The extent to which the technology is cost-effective, reliable, and able to be readily deployed in the market.
 - 1.2. The impact that inclusion in the RET would have on deployment of existing eligible technologies and the market for Renewable Energy Certificates. There would be no change to annual targets under the RET legislation.

New small-scale technologies will be limited to devices which, drawing from a renewable energy source, either generate electricity or replace electrical devices (thereby displacing fossil-fuel based electricity consumption).

The review will also consider whether a regular process for assessing the eligibility of new technologies under the RET would be appropriate, also having regard to the impact on investor certainty.

2. Whether changes should be made to the current provisions that allow for exemption from liabilities under the RET based on 'self-generation', which mainly affect off-grid remote resource projects. In particular, whether the rules continue to meet the original policy intent of excluding such projects, without creating unintended impacts on the RET's overall objective to support the deployment of renewable energy. The review will have regard to:
 - 2.1. Recent developments in resource project development structures.
 - 2.2. The potential for the self-generation provisions to create perverse incentives for companies to structure their operations, to avoid RET liability, or otherwise distort resource development decisions.

3. Whether the Solar Credits or a similar mechanism under the RET should be used to provide incentives for off-grid renewable generation, and the extent to which it would benefit remote communities, particularly indigenous communities. The review will have regard to:
 - 3.1. The experience of the former Remote Renewable Power Generation Program (RRPGP) and whether its program parameters remain relevant: notably with respect to remoteness from grid, connection costs and the current and likely future cost of small-scale renewable technologies and other power generation technologies.
 - 3.2. The impact that inclusion in the RET would have on deployment of existing eligible technologies and the market for Renewable Energy Certificates. There would be no change to annual targets under the RET legislation.

Based on these terms of reference, three short issues papers will be released for public consultation on specific issues.