

# *COAG Review of Specific Renewable Energy Target Issues*

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*29 October 2009*

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## Executive Summary

The Renewable Energy Target (RET) is vital to the development of a renewable energy industry in Australia and in the next decade will drive emissions abatement in Australia. However the integrity of the RET is currently threatened due to significant market distortion created by a recent boom in installation of demand-side technologies.

Over the last 12 months the quantity of RECs created by roof-top solar technologies, including solar hot water, heat pump hot water and solar photovoltaics, has leapt from approximately 30% to over 60% of the market. Recent REC market projections, sourced from a range of industry analysts, show that they could rise to as high as 80% of the market by the end of 2009. The underlying cause of the unprecedented rise in solar PV, solar hot water and solar heat pump hot water is the support across federal and state jurisdictions by multiple policy drivers acting in addition to the RET.

It is generally accepted that this market distortion has led to a crash in REC spot prices during 2009. Prices are currently at \$28, down from \$50 in April. This has material implications for utility-scale renewable energy developers who rely on long-term fixed price REC contracts to underpin investment decisions and financing.

A range of industry modelling suggests that under the current situation, including forecast growth rates of demand side technology, only approximately 50% of the 2020 annual targets will come from sent out electricity.

Solutions are urgently required which address the current market distortions if the large-scale supply side renewable energy industries in Australia are to avoid going into recession in Australia and moving offshore. Any amendments made to the RET through the COAG review should therefore aim to solve this fundamental flaw in the RET and increase the scheme's efficacy and certainty for utility-scale developers. The objective of any short-term response to these issues must be to reduce the oversupply and support the REC price to recover.

In the longer-term a more coordinated policy framework that incentivises reduced demand for energy and increased uptake of clean energy options through clear and long-term policy commitments is required.

## Summary of Recommendations

1. Amend the Renewable Energy Target only where it increases the scheme's efficacy in supporting utility-scale renewable energy projects towards achieving the objectives of the RET;
2. Only include new small-scale technologies in the RET where they contribute to sent out energy supply;
3. Remove solar hot water and heat pumps from the RET but continue with direct fiscal support;
4. Replace all phantom RECs from the Solar Credits multiplier in the scheme annually to maintain the integrity of the RET, ensuring that the 45,000 GWh target is achieved; and
5. Do not include support for off-grid renewable energy projects in the RET, but provide a new targeted program to replace the RRP GP.

## Introduction

The Renewable Energy Target (RET) is vital to the development of a renewable energy industry in Australia and in the next decade will drive emissions abatement in Australia.

The objective of the Renewable Energy (Electricity) Amendment Bill 2009 is *“to encourage the additional generation of **electricity from renewable sources**”* (bolding added) to achieve 20% of Australia’s electricity from renewable energy by 2020. This objective was reiterated by Minister Wong in a speech on 30 September 2009: “We have already passed laws to increase our renewable energy by four times over the next decade, so that by 2020, 20 per cent of our electricity will come from renewable sources.”

Despite this commitment to electricity supply, the RET has been used as a support mechanism for a range of demand side technologies which do not provide sent out energy towards achievement of the target.

Pacific Hydro is fully supportive of encouraging demand side industries, including solar hot water, heat pump hot water and solar PV, and recognises they require sustained government support to ensure industry development. However their inclusion in the RET diminishes the ability of all supply side industries to establish themselves and is threatening the integrity of the scheme which, in its current state, is unlikely to deliver the 20% renewable energy target objective.

We note that the Victorian Renewable Energy Target (VRET) differentiated solar hot water from power producing technologies. The VRET was designed to create a market for deployment of solar PV and large-scale, low-cost renewables. The Victorian Government (correctly in our view) considered that it was not appropriate to include energy efficiency measures competing in the same market as utility-scale renewable projects as it would likely create market distortions. The Victorian Government therefore created the Victorian Energy Efficiency Target to provide support for solar hot water and other energy efficiency measures in Victoria, while maintaining the integrity of the VRET scheme.

Over the last 12 months the quantity of RECs created by roof-top solar technologies has leapt from approximately 30% to over 60% of the market<sup>1</sup>. Recent REC market projections, sourced from a range of industry analysts, show that they could rise to as high as 80% of the market by the end of 2009<sup>2</sup> given the current combination of market and cash based assistance.

A range of industry modelling consistently suggests that under the current situation with forecast growth rates of demand side technology, only approximately 50% of the 2020 annual targets will come from sent out electricity. This is a reasonably conservative estimate as it includes the assumption that large-scale renewable energy projects are built from the present time, which under the current conditions is very unlikely. The rest of the target will be met with demand side installations of solar hot water and small generation units, and RECs banked from previous years<sup>3</sup>.

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<sup>1</sup> Monthly REC Review, September 2009. Green Energy Markets

<sup>2</sup> Utilities, Investment View, 24 September 2009. Royal Bank of Scotland

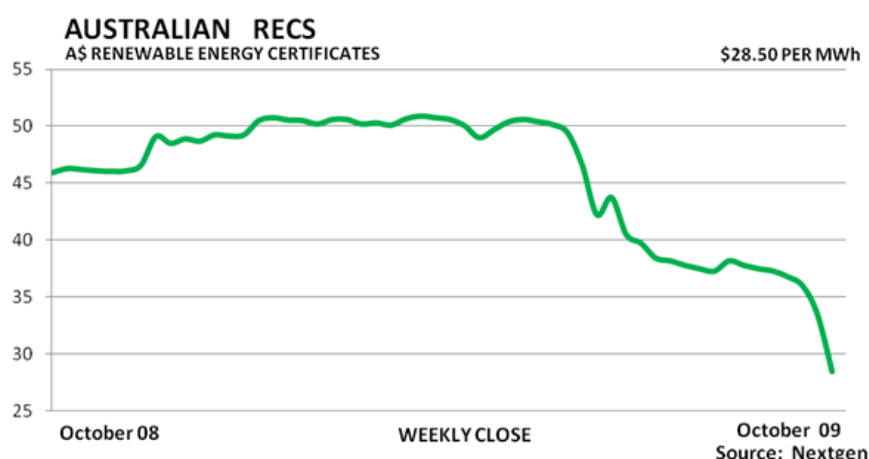
<sup>3</sup> Based on current forecasts, banked REC relinquished in later years are likely to also be from demand side solar technologies.

9 October 09 (year-to-date)	Creations	Percentage of Total
Solar PV - SGU solar (deemed)	789,172	8.28%
Solar Water Heater (deemed)	5,262,870	55.25%
Wind	2,587,867	27.17%
Total REC creation YTD	9,525,333	
Target for 2009	9,500,000	

On top of the supply of RECs already in the market, this increase in RECs from roof-top solar technologies is leading to a significant oversupply of the REC market. Current forecasts suggest that the REC market will be 13.5 million RECs in excess for 2009, and 18 million RECs in excess in 2010<sup>4</sup>. As a result of this market distortion, the REC market is likely to be in oversupply until 2016<sup>5</sup>.

An oversupply of RECs has been a feature of the market since its inception. This reflects the mandatory nature of the scheme and gives confidence that minimum obligations can always be met. However, it is becoming clear that a persistent oversupply will occur at levels well beyond those seen in the past.

This market distortion has led to a crash in REC spot prices during 2009. Prices dropped as low as \$28 in late October and are currently at approximately \$30, down from \$50 in April. This has material implications for utility-scale renewable energy developers who rely on long-term fixed price REC contracts to underpin investment decisions and financing. Typically the starting REC prices in these contracts are not greatly divergent from the prevailing spot prices.



The underlying cause of this unprecedented rise in solar PV, solar hot water and heat pump hot water is the support across federal and state jurisdictions by multiple policy drivers acting in addition to the RET, namely:

<sup>4</sup> Monthly REC Review, September 2009. Green Energy Markets

<sup>5</sup> Utilities, Investment View, 24 September 2009. Royal Bank of Scotland

- Solar PV: the five times multiplier, coupled with state-based feed in tariffs; and
- Solar water heaters and heat pumps: supported by the federal rebate (\$1600 for solar water heaters and \$1000 for heat pumps), deemed RECs under the expanded RET and may qualify under state-based rebates (ef. \$900 - \$2500 in Victoria) and state-based energy efficiency schemes such as the Victorian Energy Efficiency Target.

We are also aware that volume discounts and a reduction in production costs have led to a more permanent price reduction in some of these technologies.

The RET as it was intended is a very good piece of public policy, proven by the success of the original scheme. However its efficacy has been eroded due to its use as a substitute for a range of discontinued targeted fiscal programs and the lumping of both supply and demand side technologies into the one policy despite their very different business models. This creates friction within the scheme as demand side technologies create all the RECs upfront as a cash substitute, whereas supply side developers generate RECs over the lifetime of the project and require long-term revenue certainty from the sale of RECs to underpin very large capital investments.

The current situation is untenable for both the supply and demand side industries. Large-scale renewable energy developers cannot fund construction of utility-scale projects on a very low REC price, while available markets for demand side technology companies will contract as the value proposition for customers becomes less compelling.

The oversupply situation could be exacerbated if the demand for Green Power were to wane, as some market analysts suggest may occur especially if the voluntary actions loophole in the CPRS is not amended, leading to RECS that would otherwise have been used for the Green Power market become available for RET compliance purposes.

The recent approval of 55,000 solar PV panels under the now defunct federal PV rebate, the Queensland Government's 200,000 solar hot water system election commitment, increasingly stringent state building codes and the intention to phase out electric hot water units by 2013, will also have significant impacts and feed more RECs into an already oversupplied market.

Solutions are urgently required which address the current market distortions if the large-scale supply side renewable energy industries in Australia are to avoid going into recession in Australia and moving offshore. Any amendments made to the RET through the COAG review should therefore aim to solve this fundamental flaw in the RET and increase the scheme's efficacy and certainty for utility-scale developers. The objective of any short-term response to these issues must be to reduce the oversupply and support the REC price to recover.

A more coordinated policy framework is required that incentivises reduced demand for energy and increased uptake of clean energy options through clear and long-term policy commitments. We believe that demand side renewables should not be supported through the RET, but should form a key plank of an integrated demand side policy framework which provides certainty for this industry going forward.

Pacific Hydro wishes to stress that the views raised in this submission are not intended to pit wind energy against solar technologies for Government support. Our aim is merely to preserve the integrity of the RET and ensure that all technologies are provided with clear and stable government support to ensure the transformation of Australia's energy sector. If this could be achieved via the RET without the unintended consequences currently being experienced then there would be no need to alter the technology mix of the RET.

We have not attempted to respond to all the issues raised in the discussion papers, but only those that we see as critical to rectifying the current distortions to the market which are preventing renewable energy development in Australia.

## D1: Eligibility of new small-scale technologies and heat pumps

Are there any new small-scale technologies not currently eligible under the RET which may be considered for eligibility to participate in the scheme?

Small-scale technologies are vital to transform energy consumption patterns on the demand side of the meter. As such, they warrant targeted government support to ensure they are affordable to households and businesses and that strong and prosperous small-scale technology industries are developed in Australia.

Demand side technologies however very rarely lead to sent out electricity generation (solar PV technologies do lead to some sent out energy generation during peak generating times) and therefore make only a small contribution towards achieving one of the key objectives of the RET, being the production of an additional 45,000 GWh of renewable energy per year by 2020. Furthermore, inclusion of a greater number of demand side technologies in the RET would exacerbate the REC oversupply problem outlined above, leading to a greater level of market distortion due to their likely eligibility for the Solar Credits multiplier if included.

Specific small-scale technologies should only be considered for inclusion in the RET where they are intended for use on the supply side of the meter and contribute to sent out electricity supply. These technologies should be subject to the same conditions under the RET as all other supply side technologies currently eligible and should therefore not qualify for a Solar Credits style multiplier.

In the longer-term, COAG should aim to remove small-scale technologies from the RET, using them instead as a key plank in a comprehensive demand side policy framework. This would provide appropriate targeted support to small-scale technologies and maintain the integrity of the RET.

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?

A recent analysis by AGL shows that heat pumps are significantly cheaper than other solar hot water systems and conventional gas technologies when all state and federal financial incentives are taken into consideration (see table below).

It is widely accepted that it is due to this level of support that heat pump installations have boomed in Australia over the last 12 months. While it is difficult to quantify RECs created by heat pumps due to their classification as solar hot water systems for the purposes of the REC Registry, anecdotal evidence from the industry suggests that there has been unprecedented levels of growth in recent months which has been a strong contributor to the REC oversupply from solar technologies.

Technology	Cth Rebate	Other jurisdiction	RECs	Net cost to purchaser
SHW unit (cost \$4,000)	\$1,600	Most States \$400 – \$600	\$1,040	~\$950
Heat pump unit (cost \$3,000)	\$1,000	Most States \$400 – \$600	\$1,040	~\$550
Gas (cost \$2,000)	-	Most States \$400 – \$600	-	~\$1,500

This growth has in part been a result of increasingly stringent state building codes, which now frequently require the installation of a solar hot water system (including heat pumps) as part of minimum building performance standards. With a number of compounding state and federal drivers, solar hot water and heat pump installations have boomed.

Another key factor in the oversupply has been the eligibility of heat pumps in commercial applications. The low cost of systems and their eligibility for RECs has seen oversized installations used in many applications where the developer stands to make a profit from government stimulation for this technology. The eligibility of commercial-scale heat pumps is anomalous with other solar technologies under the RET, where system size is capped to domestic applications.

Pacific Hydro therefore argues strongly that, as they do not need the support of both the RET and the rebates available, heat pumps and solar hot water systems should be removed from the RET. In the short-term they could continue to be supported via direct fiscal measures, however in the longer-term they should form a key plank of an integrated demand side policy framework.

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

The integrity of the RET is currently severely threatened by the eligibility and installation growth rates of small-scale technologies. As stated previously, solar hot water installations (including heat pumps) are currently approximately 60% of the REC market, could be up to 80% of the market by the end of the year, and are likely to leave the REC market in gross oversupply until at least 2016. The bulk of these RECs are not associated with sent out electricity.

In combination with the resultant REC spot price crash, this leaves little or no scope for investment in large-scale, low-cost projects, and jeopardises the value of the RET to support the development of emerging technologies such as geothermal, solar thermal and ocean technologies.

Including further small-scale technologies in the RET, especially if they were eligible for a REC multiplier, would merely exacerbate the current market distortions and make it even more difficult for large-scale developers to construct projects in Australia.

Under the current market conditions very few investment decisions for new large scale renewable energy projects will be made in the next three to four years. The gap between the long-term contract price and the spot price has grown to levels where it will be difficult to make long-term investment decisions and raise finance. There has already been a noticeable delay in new projects which are "shovel ready" and have been waiting on the introduction of the expanded RET legislation. It is most likely that the only projects built in the near-term will be those which had investment decisions made prior to the market collapse or are underpinned by an alternative revenue source, such as a desalination plant.

It is expected that the wind industry in particular will experience a slump over the next few years. The impacts include:

- Loss of fabrication, construction and engineering jobs in industries which rely on the current wind industry (e.g. wind tower manufacturing);
- Retreat of wind turbine suppliers back to established markets;
- Lack of creation of green jobs;
- Transfer of local resources and capability to more active renewable energy destinations; and
- Refocus of company strategic direction and investment to more attractive markets.

Rather than fuelling the problem by increasing the supply of RECs from small-scale technologies, COAG should seek to reduce the supply by removing heat pumps and solar hot water from the RET. As stated previously, Pacific Hydro believes these technologies should continue to be supported with direct fiscal support measures in the short-term and be moved to a clear and stable demand side policy, tailored to their unique business model, in the longer-term. This could be based on the Victorian Energy Efficiency Target scheme.

### D3: Support for small-scale off-grid renewable generation

Solar Credits currently apply up to the first 1.5kW of capacity installed. Should Solar Credits or a similar REC multiplier mechanism under the RET be used to provide further incentives for off-grid renewable generation?

The Remote Renewable Power Generation Program (RRPGP) filled an essential function of public policy in ensuring that communities with no access to the major existing grids had secure and clean alternatives to traditional diesel generation. Pacific Hydro believes that the objectives and parameters of the program remain relevant, and in light of the urgent need to undertake all possible measures to avoid greenhouse emissions, introducing a new policy measure to replace the RRPGP is essential.

It must be recognised however that the objectives of the RRPGP – to decrease reliance on imported diesel and provide secure and clean energy supplies to remote communities – differs from that of the RET. In addition, off-grid

technologies are underpinned by a similar business model to demand side technologies, requiring REC generation up front to lessen the financial impact of investment.

Using the RET as a replacement for the RRP GP would therefore introduce further distortions to a market which is already demonstrably threatened for reasons very similar to those in question here.

In addition, if the RRP GP were included in the RET and treated to a REC multiplier the effect of this market distortion would be magnified and could be catastrophic to Australia's renewable energy industry.

Therefore while there is great need for a program which has the same function as the RRP GP, Pacific Hydro does not support its inclusion in the RET.

### Would providing incentives for off-grid renewable generation have a major impact on the deployment of existing eligible technologies?

Providing support for off-grid renewable generation through the RET cannot be viewed in isolation. While such a program would have quite different objectives and business models to the RET, on its own including off-grid projects in the RET may be achievable without major effect on existing eligible supply side technologies.

However COAG must take into consideration the net effect of utilising a very good piece of public policy in the RET to support a basket of other policies with different objectives. Recent experience and the current state of the REC market has highlighted that government interventions in the market to cover a range of other policy objectives create distortions which threaten the market's ability to deliver the dual objectives of electricity generation and the development of a strong supply side industry in Australia.

A range of industry modelling consistently suggests that under the current situation with forecast growth rates of demand side technology, only approximately 50% of the 2020 annual targets will come from sent out electricity. This is a reasonably conservative estimate as it includes the assumption that large-scale renewable energy projects are built from the present time, which under the current conditions is very unlikely. The rest of the target will be met with demand side installations of solar hot water and small generation units, and RECs banked from previous years.

The effect of providing incentive for off-grid renewable energy projects through the RET would only exacerbate this already dire situation, especially if provided with a REC multiplier. It would therefore become highly unlikely that any utility-scale projects would be built under the RET as was the original intent of the policy.

Pacific Hydro therefore argues strongly that as the RET was intended to underpin the development of utility-scale projects, it should apply only to utility-connected assets. While support for off-grid, remote renewable projects is still a very important policy objective, it is more appropriately addressed through a separate policy driver.

## Conclusion

The integrity of the RET is currently threatened by market distortions created by unprecedented support for and uptake of demand side solar technologies, in particular solar hot water and heat pumps.

Pacific Hydro is fully supportive of encouraging demand side industries including solar hot water, heat pump hot water and solar PV, and recognises they require targeted government support to ensure industry development. However their inclusion in the RET diminishes the ability of all supply side industries to establish themselves and is threatening the integrity of the scheme, which in its current state is unlikely to deliver the 20% renewable energy target objective.

Amendments to the RET should therefore only be made where they increase the market's ability to meet the scheme's objectives and support the development of large-scale, low-cost renewable energy industries in Australia.

Many of the amendments suggested in the COAG discussion papers merely exacerbate the current problems with the RET and make it less likely that the Government will meet its stated objective of providing 20% of Australia's electricity from renewable energy by 2020.

In the short-term, changes to the RET are urgently required which reduce the scale of the current REC oversupply and support the REC price to recover. This could be done by removing technologies which have reached competitive market prices (heat pumps and solar hot water) or technologies which do not provide sent out electricity from the scheme while maintaining other financial support measures. Alternatively, the RET regulations could be amended to classify all RECs not associated with sent out electricity as phantom RECs and replaced in the market annually.

Furthermore, the integrity of the RET should not be further threatened by the inclusion of other programs which, while valid and valuable, do not have shared objectives with the RET.

In the medium- to long-term however, the government must move toward providing a comprehensive demand side policy framework which supports includes domestic solar technologies, energy efficiency actions and insulation programs.

## Summary of Recommendations

1. Amend the Renewable Energy Target only where it increases the scheme's efficacy in supporting utility-scale renewable energy projects towards achieving the objectives of the RET;
2. Only include new small-scale technologies in the RET where they contribute to sent out energy supply;
3. Remove solar hot water and heat pumps from the RET but continue with direct fiscal support;
4. Replace all phantom RECs from the Solar Credits multiplier in the scheme annually to maintain the integrity of the RET, ensuring that the 45,000 GWh target is achieved; and
5. Do not include support for off-grid renewable energy projects in the RET, but provide a new targeted program to replace the RRP GP.