Hydro Tasmania
the renewable energy business

The Secretary
Senate Economics Legislation Committee
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CANBERRA ACT 2600

Email: economics.sen@aph.gov.au

24 July 2009

Dear Sir or Madam

Re: Inquiry into the Renewable Energy (Electricity) Amendment Bill 2009 and a related bill.

Thank you for the opportunity to provide comment on the Renewable Energy Amendment Bill 2009 and Renewable Energy Amendment Regulations 2009. Please find attached Hydro Tasmania's submission to the Senate Economics Committee Inquiry.

Hydro Tasmania is the largest generator of renewable energy in Australia, and is internationally recognised for its expertise in renewable energy operation and development. Hydro Tasmania continues to make a major contribution to the production and growth of renewable energy and reduction of greenhouse gas emissions. This includes through wind developer Roaring 40s (a joint venture company between Hydro Tasmania and China Light and Power), a Consulting business providing expertise internationally, and the majority shareholder of energy retail business Momentum Energy.

The development of renewable energy has effectively been on hold in Australia since the former Government's deliberations on the 2003 Tambling Review. While various State Governments have proposed and/or implemented renewable energy target schemes, these schemes have been deferred or stalled following the election commitment for an expanded Renewable Energy Target by the Rudd Government. Over 18 months has now passed since the election of the Rudd Government. The massive amount of pent up investment in renewable energy continues to await the safe passage of legislation containing the simple amendments necessary to underpin further investment.

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While noting there are no specific terms of reference for this Inquiry, Hydro Tasmania's submission addresses the following key issues:

- **RET is a proven and effective market measure**

  The RET is proven and has demonstrated, beyond doubt, its effectiveness as a policy instrument to encourage the deployment of additional renewable energy generation including the upgrade and refurbishment of existing renewable energy assets.

  The design and operation of MRET has undergone significant review, consultation and refinement over a prolonged period of time.

- **RET should be legislated immediately**

  RET only requires a simple legislative amendment and can be introduced quickly and easily to ensure a seamless transition from the original MRET measure.

  Any delay in legislating the proposed emissions trading scheme should result in immediate de-coupling of the RET to unlock immediate and pent up investment in renewable energy.

  These renewable energy projects will provide energy security, jobs and investment throughout rural and regional Australia and an immediate and significant contribution to greenhouse gas abatement

- **The expanded RET design is right and requires no further changes**

  The design elements outlined in the draft legislation are consistent with the existing MRET design and are therefore effective in providing long term incentives for the deployment of least cost renewable energy projects.

  The proposed design of the expanded RET is also consistent with the original MRET, the 2003 Tambling Review, 18 months of consultation and COAG agreement reached in early 2009.

- **Hydro Tasmania development opportunities are on hold**

  Hydro Tasmania has a significant project development pipeline that is on hold, awaiting the legislative certainty of the expanded RET.

  The RET will underpin Hydro Tasmania's ongoing investments in a range of additional projects including modernisation, upgrades and enhancements to existing hydro power stations and new wind developments through Roaring 40s.

This submission addresses these key issues and also refers to the key points made in Hydro Tasmania's earlier submissions to the *Draft Legislation* and *Design Options Paper*. Much of this submission draws upon and provides updates on these previous submissions. We welcome the opportunity to present to the Committee or provide further information about the contents of this submission or any other issues. Should you have any queries or require further information, please contact Kane Thornton, Senior Advisor Renewable Energy Policy on (03) 8628 9735 or email kane.thornton@hydro.com.au.

Yours faithfully

<Original signed>

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Inquiry into the Renewable Energy (Electricity) Amendment Bill 2009 and a related bill

HYDRO TASMANIA SUBMISSION

1 RET is a proven and effective market measure

The MRET is proven and has demonstrated, beyond doubt, its effectiveness as a policy instrument to encourage the upgrade and refurbishment of existing renewable energy generation as well as deployment of additional renewable energy generation and therefore must be retained and extended. The design and operation of MRET has undergone significant review, consultation and refinement over a prolonged period of time.

In the years leading up to implementation of the MRET in 2001, there was considerable opposition to the scheme on the grounds that it would have significant adverse impacts on industry, and that it would not deliver renewable energy targets in a cost effective manner.

The actual experience in the intervening years has been refreshingly different. Contrary to its critics, the Australian MRET set the international benchmark for the large number of similar schemes that have since followed it across the world. MRET has demonstrated its effectiveness as a market mechanism to achieve the desired policy outcome, without adverse economic impacts.

The 2003 review of the MRET concluded:[1]

> *"By August 2003, MRET had contributed significantly to additional renewable energy generation with 190 power stations accredited. Of these, 84 have been commissioned since MRET came into operation. MRET's interim targets for electricity generation during its first two years of operation have been exceeded with no evidence of significant shortfalls by liable parties…*
>
> *...By 2007, sufficient capacity is expected to have been installed to meet the MRET target of 9500 GWh for 2010. As a consequence, investment is expected to fall away rapidly."*

This has proven to be the case with approximately 1,800 MW of additional renewable energy capacity installed by 2007[2]. Importantly, the MRET review concluded that the MRET should be extended and enhanced.

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[1] Australian Greenhouse Office (2003). *A Review of the Operation of the* Renewable Energy (Electricity) Act 2000.

[2] Clean Energy Council, April 2008

"The Review Panel considers that a continuation of the current gradual build-up of the MRET target would stimulate progressive growth in the renewables industry and provide opportunities for innovative Australian companies to gain experience in the domestic market, providing a sound base for future exports. Such an approach would also provide useful preparation for the larger contribution renewables may make at a later date"

In the long term, an Emissions Trading Scheme (ETS) will play a key role in supporting the deployment of renewable energy. However, an ETS is only one element of the suite of policy responses required to achieve greenhouse gas emissions abatement across the economy.

"Establishing a carbon price alone will be an incomplete approach to mitigating climate change; additional measures will be required"[3]

Support from an expanded RET is critical if the Government's 20% by 2020 renewable energy target is to be achieved. This was clearly illustrated by a late 2007 study commissioned by the Renewable Energy Generators of Australia (REGA) which concluded that by 2020, with low to moderate carbon prices and no target for zero and low emission generation, renewable energy generation increases to around 26,000 GWh.[4] This is well below the Government's proposed target of 45,000 GWh by 2020.

The current cost to deploy renewable energy is significantly higher than current wholesale electricity costs, which are currently in the order of $45/MWh. Unless this 'cost gap' is closed, additional renewable energy generation projects will not be commercialised and continued investment in these technologies will not occur.

Box A provides an instructive case study for wind energy – the technology with currently the greatest scope for large scale deployment.

Box A: Wind Energy Case Study

The mid-range estimate for the levelised cost of new wind energy is $100/MWh.

At an average wholesale energy price of $45/MWh, and in the absence of support from the expanded RET new wind energy projects will require an average electricity price uplift of $55/MWh to ensure financial viability.

We estimate this uplift to be equivalent, in theory, to an average carbon price of ~$69/$tCO_2$-e.[5]

[3] *Garnaut Climate Change Review Issues Paper 4, page 2.*

[4] MMA (2007). *Increasing Australia's Low Emission Electricity Generation – An Analysis of Emissions Trading and a Complementary Measure*. Report to Renewable Energy Generators of Australia.

[5] Based on a ratio of wholesale price uplift ($/MWh)/Carbon price ($/tCO_2-e) of 0.8. This is the approximate average carbon cost pass ration for the Australian electricity market.

There is no currently no certainty that the proposed ETS will deliver this level of carbon price in the short to medium term. There is therefore a continuing need for an enhanced MRET to facilitate the commercial viability of the development of wind and other renewable energy technologies in Australia until such time as the full cost of carbon is realised.

While technology costs for wind energy will continue to fall due to learning effects, current installed capacity costs have actually increased in real terms due to spiralling global demand and increasing material and labour costs. To the extent that this upward pressure impacts on the effect of long term learning effects, new projects are likely to temporarily require even higher carbon pricing levels to support commercialisation.

The RET, through the creation of new revenue streams associated with the sale of renewable energy certificates (RECs), has provided a means to close this gap since its introduction in 2001. An expanded RET has the potential to further decrease this gap until such time as the cost of carbon is fully included in the wholesale electricity price.

Under the RET, renewable energy project developers are able to secure long term contracts (for RECs only or electricity plus RECs) which has provided the basis for commercialising new projects. In contrast, under an ETS there is no certainty that:

(a) There will be an effective mechanism for long term (in the order of 10 – 15 years) price discovery in carbon;

(b) Long term carbon price expectations will be incorporated into long term electricity derivative pricing; and

(c) Project developers will be able to capture the uplift in electricity prices in long term power sales arrangements now.

Even if carbon prices reach levels that in theory would support commercialisation of new renewable energy projects, conditions (a) – (c) above would need to be fulfilled before practical financial viability is assured.

2 RET should be legislated immediately

Hydro Tasmania supports the Government's intention to achieve at least 20 per cent renewable energy by 2020. The introduction of a 45,000 GWh target is welcomed by the renewable energy industry as a necessary and appropriate means of increasing Australia's renewable energy contribution and commencing a transition towards a lower emissions intensity electricity generation sector.

This can be achieved by a simple legislative amendment to the existing MRET and can be introduced quickly and easily to ensure a seamless transition from the original MRET measure. Any delay in legislating the proposed emissions trading scheme should not delay the passing of the RET bills. If necessary, the RET legislation should be de-coupled from emissions trading legislation to immediately unlock pent up investment in renewable energy.

Any further delay in RET legislation, is a delay in jobs, investment and climate change action. RET will ensure the immediate deployment of renewable energy projects throughout Tasmania and Australia. These renewable energy projects will deliver:

- Energy security for Australia, including mitigation against the impacts of drought and future climate change;
- 26,000[6] jobs throughout rural and regional Australia; and
- Investment worth approximately $20 billion[7] in new renewable energy projects nationally which will stimulate regional economies.
- An immediate and significant contribution to greenhouse gas abatement, reaching approximately 28.5 Million tonnes per annum by 2020[8].

Clearly debt markets are currently constrained globally. While this presents challenges for project financing, a well designed RET can provide the long term investor certainty that can see major investments in renewable energy throughout rural and regional Australia proceed.

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[6] McLennan Magasanik Associates, *Regional Employment and Income Opportunities Provided by Renewable Energy Generation*, Climate Institute, May 2009.
[7] IES, *Modelling the effects of design parameters on the expanded National Renewable Energy Target*, Clean Energy Council, December 2008.
[8] Department of Climate Change, *Stationary Energy Sector Greenhouse Gas Emissions Projections 2007*, Australian Government, February 2008.

3 The expanded RET design is right and requires no further changes

The majority of the design elements outlined in the draft legislation are consistent with the existing MRET design and are therefore effective in providing long term incentives for the deployment of least cost renewable energy projects.

The proposed design of the expanded RET is also consistent with the original MRET, the 2003 Tambling Review, 18 months of consultation and COAG agreement reached in early 2009. No further review of these key design elements is necessary.

Attachment 1 summarises Hydro Tasmania's position on these key design elements and is based on a previous submission to the *Design Options Paper*.

Hydro Tasmania has also reviewed in detail the legislation and believes this achieves the stated objectives and provides the necessary certainty for renewable energy project developers. As outlined in Attachment 3, a range of additional fiscal measures are also essential to support different technologies at different phases of the technology innovation cycle. RET is essential to commercialising proven least cost renewable energy technologies and any attempt to broaden its role beyond this risks undermining the integrity of the measure.

4 Hydro Tasmania Development Opportunities are on hold

Hydro Tasmania has a significant project development pipeline that is on hold awaiting the legislative certainty of the expanded RET.

The original Mandatory Renewable Energy Target provided the incentive for Hydro Tasmania to accelerate maintenance, refurbishment and modernisation of our hydro assets. Since 2002 Hydro Tasmania has spent approximately $180 million on these activities.

The RET will underpin Hydro Tasmania's ongoing investments in a range of additional projects including modernisation, upgrades and enhancements to existing hydro power stations and new wind developments through Roaring 40s. These are summarised below.

4.1 Maintaining existing renewable energy generation

In addition to the deployment of new renewable energy assets, the maintenance of existing renewable energy assets will be fundamental to ensure future low emission energy supplies. Currently 15,000GWh (approximately 5%) of Australia's total electricity generation is sourced from existing hydro power.

It is essential that sufficient investment incentive (from a carbon price and/or RET) is provided for the ongoing maintenance and refurbishment of existing ageing renewable energy assets. This includes a number of Heritage listed power stations with significant cultural value throughout Tasmania. Any replacement of these existing renewable energy assets with greater emissions intensive energy sources (for example, the decommissioning of aged hydro power plant and replacement with combine cycle gas turbines) will only further exacerbate Australia's carbon abatement challenge.

The operating life of hydro generation assets and the life and timing of major refurbishment can vary significantly from one asset to another. However, an overall life of approximately 80 to 85 years and an operating life to major refurbishment of approximately 40 years are fairly representative of typical hydro generating plant and associated assets.

The timing of maintenance and refurbishment activities is business driven and carefully assessed for each asset during development of asset management plans and business case evaluation. Timing is also significantly influenced by asset condition, risk exposure, sustainability requirements, production and trading requirements, and other commercial drivers.

Unless there is a viable business case for refurbishment and upgrade in the short to medium term, and replacement in the long term, these assets may not be renewed. In the case of hydro generation assets, this represents over two thirds of Australia's existing renewable energy base. Any retirement of renewable

energy plant would see resources and civil infrastructure wasted, and will have a consequential negative impact on national generation emissions intensity

The refurbishment and replacement projects require an appropriate policy framework to ensure the financial drivers exist for projects to proceed. MRET has encouraged existing generators to maintain and enhance production from their assets above 1997 levels, and because the expanded RET is appropriately designed, will continue to do so. The proposed emissions trading scheme with a sufficiently high carbon price will be an important long term driver for the viability of the upgrade, enhancement and replacement of assets. However, until a sufficient carbon price is achieved, the expanded RET will continue to be essential to provide the long term investment certainty and ensure this existing generation continues to contribute toward Australia's abatement challenge.

4.2 Renewable energy development opportunities

1,000GWh project

As part of a comprehensive strategic response to climate change, Hydro Tasmania has commenced investigation of a range projects (collectively referred to as the 1000GWh project) that will recover the lost energy from declining rainfall, possibly further impacted in the future from climate change.

These enhancement projects include:

- catchment diversions & diversion upgrades;
- raising existing storages;
- mini-hydro schemes; and
- new power station development or redevelopment of existing power stations.

A detailed overview of the 1000GWh initiative is found in Attachment 2.

New Wind Energy Development Opportunities

The expanded RET is crucial to supporting Hydro Tasmania's future renewable energy developments including new wind energy projects stemming from Hydro Tasmania's 50% ownership of Australian-based wind developer Roaring 40s. The R40s development pipeline includes over 500 MW already in operation and under development and a total construction pipeline of 1000-1500 MW potentially worth over $1.5 billion. Next key projects include the 114 MW Waterloo Wind Farm (SA) and the 140 MW Musselroe Wind Farm (TAS).

The Bass Strait Islands Project

The Bass Strait Islands Renewable Energy Integration project ($61 million) includes an innovative portfolio of new and existing technologies:

- Biodiesel - convert the diesel engines from conventional diesel to bio-diesel ready
- Expand wind energy generation, installation of energy storage technology
- Demand Side Management (DSM) trials through the use of smart metering throughout the Island communities

Hydro Tasmania is seeking assistance (approximately $20 million) for these projects through the Government's $4.5 billion Clean Energy Initiative, the commercial viability of these and other projects are critically dependent on the expanded RET.

Hydro Tasmania believes projects such as these are essential to ensure mitigation of emissions and adaptation to the physical impacts of climate change, though recognise that they will not be fully realised in a business as usual market context. With the right policy framework and market incentives, these projects can also make a valuable contribution to Australia's response to climate change and transitioning Australia to a lower carbon intensive economy.

ATTACHMENT 1: Hydro Tasmania position on key design elements.

1. ELIGIBLE SOURCES

Exposure Draft Position	Amendments	Hydro Tasmania Position
The design maintains the same eligibility criteria as under the current MRET scheme.	*No legislative amendments are required*	Agree. Eligibility under RET should be the same as the current MRET

Such an approach ensures simple implementation with no change to the current MRET eligibility rules. It also ensures maximum renewable energy generation will be encouraged on a least-cost technology neutral basis.

2. BANKING OF RENEWABLE ENERGY CERTIFICATES

Exposure Draft Position	Amendments	Hydro Tasmania Position
The design maintains the same treatment of banking of Renewable Energy Certificates (RECs) as under the MRET scheme. *Banking is permitted for the life of the scheme without restriction.*	*No legislative amendments are required*	Agree. Unlimited banking should be permitted.

The principles of banking have been well established in other market mechanisms, both in Australia and other jurisdictions. Unlimited banking has the following benefits:

- provides inter-temporal flexibility in meeting compliance obligations under the RET. Inter-temporal flexibility will improve allocative efficiency[9] by allowing RECs to be acquitted in a way that imposes least costs on the economy;

- has the effect of smoothing prices over time relative to not having banking, leading to less volatility in the REC market;

- provides a secondary market that allows for participants to manage risk more efficiently; and

- is consistent with keeping the design of the RET scheme as close as possible to the existing MRET.

Maintaining the 45,000GWh target beyond 2025 and indeed consideration of further target increases could ensure that any prior year surpluses are fully absorbed, as well as providing the certainty for sufficient additional installed capacity to meet the 45,000GWh target at some point after 2020.

3. PROJECT ELIGIBILITY PERIODS

Exposure Draft Position	Amendments	Hydro Tasmania Position
The design does not limit the timeframe within which projects may create RECs. *All projects, once accredited, would be able to create RECs until the scheme expires. This approach reflects the current MRET scheme.*	*No legislative amendments are required*	Agree. There should be no limit on the number of years for which a project is eligible to create RECs under the RET

This approach has the following merits:

- it is consistent with arrangements under the current MRET, under which projects can create RECs above their 1997 eligible renewable energy baseline for the life of the measure;

[9] Allocative efficiency refers to the market's capacity to channel RECs to their highest value uses across the economy and through time at low cost and minimal risk.

- it requires only a minor change to the existing legislation – only a change to the end date contained in Part 1, section 4 of the current MRET Act is required;

- it would be simple to administer – as projects can create RECs for the life of the scheme, there are no administrative arrangements required for tracking when each project becomes ineligible to create RECs; and

- it will encourage ongoing refurbishment and enhancement of renewable energy assets – this is important to ensure that the target of 20% renewable energy is maintained after 2020, and not eroded as projects are abandoned once they become ineligible for RECs.

4. TREATMENT OF EXISTING GENERATORS

Exposure Draft Position	Amendments	Hydro Tasmania Position
All existing projects eligible under the MRET scheme will be eligible to participate in the expanded RET for the life of the scheme. Current generation baselines above which existing projects are able to create RECs would be extended to the end of the new scheme.	*No legislative amendments are required*	Agree. All existing (pre-1997 and pre-2007) generators should be eligible to create RECs for generation above their 1997 renewable energy baseline for the life of the measure.

The *Draft Options Paper* stated that:

> *The Australian Government has committed to implementing an expanded national RET scheme that will…increase the MRET to 45,000 GWh to ensure that, together with the approximately 15,000 GWh of existing renewable capacity, Australia reaches the 20% target by 2020.*

Treatment of pre-1997 generators under the RET will play a significant role in determining whether or not the 15,000 GWh of pre-1997 renewables is maintained to 2020 and beyond.

To achieve the target in the most cost effective and efficient manner, it is important to prolong the lifetime and encourage expansion of output from existing renewable energy assets. This eligibility for RECs provides an appropriate incentive for pre-1997 generators to maintain and increase production from their existing assets.

To date, the current baseline approach has encouraged existing generators to maintain and enhance production from their assets above 1997 levels, and an appropriately designed RET will continue to do so. For example, Hydro Tasmania has identified opportunities for achieving 1,000 GWh of potential additional renewable energy from its existing power stations through specific system enhancement projects should the right conditions prevail.

5. COMPLIANCE MECHANISMS — SHORTFALL CHARGE

Exposure Draft Position	Amendments	Hydro Tasmania Position
The design includes a fixed (un-indexed) shortfall charge penalty for non-compliance to be set at a level marginally above the projected peak REC price. This approach is similar to the MRET scheme which includes a fixed shortfall charge.	*Amendment to* the *Renewable Energy (Electricity) Charge Act 2000. The level of the shortfall charge will be set prior to COAG consideration of the final design.*	The shortfall charge should ensure compliance and be fixed significantly above the forecast peak marginal cost of renewable energy and indexed to the Consumer Price Index (CPI).

The shortfall charge is essential to drive compliance with the RET scheme and ensure investment is made in renewable energy projects. The level of the REC shortfall charge in no way determines the overall cost of the measure; this will be determined by market forces and the range of factors outlined below. For this reason, Hydro Tasmania believes that the REC shortfall charge should be set significantly above the forecast peak marginal cost to deploy sufficient renewable energy to achieve the 45,000GWh target.

Hydro Tasmania accepts that over the long term, costs for deploying renewable energy technologies are likely to decline. The peak price of RECs during the life of the RET scheme will be determined by a range of complex factors. Economic modelling has limited utility in calculating or forecasting the extent of these factors. Upon reflecting on pressures on project costs over the past year and

potentially the year ahead, there are many unforeseen circumstances which can have dramatic impacts on these costs. These could include:

- changes in global supply/demand for renewable energy technologies;
- significant reduction in wholesale electricity prices as a result of ongoing economic down turn or carbon price shock which could result in reduced energy demand within Australia;
- significant technological breakthrough in non-renewable form of technology introducing significant low cost supply and lowering wholesale electricity prices;
- significant shifts in Australia's currency situation, changing the relative cost of major technology components (such as wind turbines). For example, the Australian dollar weakened by 31 per cent against the US dollar during 2008; and
- economic recovery or stimulus resulting in increased inflationary pressure and increased interest rates, increasing the cost of project financing.

Clearly there are significant challenges in selecting a shortfall charge at the peak price.

It should be noted that a fall in the value of the penalty due to a lack of indexation may reduce the incentive to invest in renewable technologies in later years and thus impede meeting the objectives of the RET. For example, a penalty price of $80 upon scheme commencement in 2010 could depreciate in value (assuming CPI of 3%) to approximately $50 by 2025 and $44 in 2030 in real terms.

While it is likely that the impact of this will be lessened with the introduction of a carbon price, it is not possible to predict when this might occur. Hydro Tasmania therefore recommends that the penalty remains indexed to the CPI for the life of the measure.

6. SCHEME DURATION AND PHASE-OUT

Exposure Draft Position	Amendments	Hydro Tasmania Position
The design includes a dual linear ramp-up of annual targets from	*Amendment to the Renewable Energy (Electricity) Act*	The target should be maintained at

2010 rising to 45 000 gigawatt-hours in 2020. The target is maintained at 45 000 gigawatt-hours before being phased down from 2025 and terminating at the end of 2030.	*2000*.	45,000GWh from 2020 for the life of the scheme. RET should continue beyond 2030 until there is a high level of certainty that the emissions trading scheme will ensure that the 20% share of renewable energy will be maintained.

Hydro Tasmania acknowledges the intended transitionary nature of the RET. Once the full cost of carbon is priced into the energy market, the wholesale electricity price should be sufficient to commercialise renewable energy projects. There is no certainty when this will occur. The level of Australian carbon prices will be heavily dependent on the design parameters for the emissions trading scheme, including the emissions cap, international linkages and the penalty for non compliance.

Designing the RET to anticipate when this may occur will simply introduce uncertainty and risk undermining investment confidence in renewable energy projects. Further, the interaction of RET and emissions trading scheme is such that these two measures can coexist effectively and achieve both the strategic development of an Australian renewable energy industry and a nationally efficient and environmentally sustainable energy sector.

The recent modelling by MMA for the Department of Climate Change stated that:

> *"once the carbon price reaches a level at which it strongly influences investment decisions, the effects of the RET scheme will phase out naturally, reflected in the decline of the price of RECs".*

Hydro Tasmania believes that maintaining the 45,000GWh target until at least 2030 captures all the benefits associated with retaining the RET without imposing additional costs on the market, as REC prices would be expected to tend towards zero as the carbon price bridges the price 'gap' filled by RECs. During this transition, the RET should be set at a level to at least maintain the 20% target.

IES modelling recently commissioned by the Clean Energy Council analysed the various design options proposed in the Design Options paper. In assessing the two proposed schemes for phasing out the RET (by reducing either the penalty or the target from 2025-2030), both fail to encourage sufficient investment in renewable projects and hence do not meet the target.

Consequently, Hydro Tasmania submits that the RET should feature:

- a 45,000 GWh target in 2020;
- targets from 2020 onwards that are commensurate with a 20% share of national electricity demand; and
- reviews of the continued need for the scheme at five yearly intervals from 2025.

Hydro Tasmania strongly believes that any intention to phase out the measure prematurely, unnecessarily risks the integrity of the RET and the likelihood of delivering on the Rudd Government election commitment.

Hydro Tasmania does not support a dual linear trajectory for the target between 2010 and 2020. While the impacts of this trajectory are ameliorated to some degree by the use of banking, a dual linear trajectory may result in sub-optimal levels of investment in proven technology. This could in turn result in reduced scale for these technologies, a factor that is essential to achieving cost reductions and long term strategic investments in the Australian renewable energy sector. A linear target will ensure least cost technology deployment over the life of the measure.

7. SCHEME REVIEW

Exposure Draft Position	Amendments	Hydro Tasmania Position
The design includes a review of the scheme to be conducted in 2015.	*Amendment to the Renewable Energy (Electricity) Act 2000.*	Agree on the basis that any review can consider only an increase to the target or extension of the scheme.

Hydro Tasmania supports a review with very carefully defined terms of reference. The review of the original MRET scheme was ambiguous in nature and resulted in significant industry uncertainty and subsequent stalling of investment. Most importantly, any review must only allow the target to be increased, and not decreased in any way.

8. MULTIPLIER FOR RENEWABLE ENERGY CERTIFICATES CREATED BY SMALL GENERATION UNITS

Exposure Draft Position	Amendments	Hydro Tasmania Position
The design includes a multiplier to be applied for RECs created by micro-generation units (including rooftop solar PV systems, small wind turbine systems and micro-hydro systems). *The multiplier will decrease over time from five RECs for every megawatt-hour of deemed renewable energy to one REC for every megawatt-hour of deemed renewable energy for new systems, according to the following time profile: 2009-10, five times; 2010-11, five times; 2011-12, five times; 2012-13, four times; 2013-14, three times; 2014-15, two times; and 2015-16 onwards, no multiplier.* *The multiplier applicable to a system would depend on its installation date.* *For each micro-generation system, the multiplier would apply only to the first 1.5 kilowatts of system capacity.*	*Amendment to the Renewable Energy (Electricity) Act 2000 and to the Renewable Energy (Electricity) Regulations 2001.*	The creation of additional 'phantom' RECs as a result of the multiplier should correspond to an increased RET target in the following year.

9. RATE Industry Assistance

Hydro Tasmania acknowledges that some businesses may face difficulty in passing on any net costs associated with the expanded RET. The impact of the RET will generally however be an order of magnitude less than that of the CPRS. Hydro Tasmania understands that the Treasury modelling of CPRS

impacts, which forms the basis for determining CPRS compensation, accounted for the expanded RET (refer MMA report to Treasury of October 2008).

Hydro Tasmania believes that any assistance to RATE industries must:

- not diminish the overall expanded RET target and/or total electricity industry obligation of 45,000GWh, or the resulting investment certainty the REC market creates.

- be simple and avoid distorting the REC market. Any assistance should not reduce market liquidity, be overly complex (creating issues of information asymmetry or transparency) and should be designed to avoid windfall gains.

It must be recognised that exempting industries will shift the REC liability onto remaining electricity customers. In recognition of this, compensation claims should be carefully weighted against issues of equity.

The natural market dynamic between the emissions trading scheme and RET means that over time, as the cost of carbon and wholesale electricity prices increase, the price of RECs will naturally reduce. This is due to the competitive nature of the Australian electricity market and RET scheme. This means that as the carbon price matures, any additional cost impost on RATEs from the RET will reduce accordingly, reducing the need for additional compensation to RATEs outside of that received through any emissions trading scheme compensation package.

ATTACHMENT 2 – OVERVIEW OF HYDRO TASMANIA'S 1,000 GWH PROJECT

From the early 2000s, Hydro Tasmania has been pursuing greater insight into climate change and its potential impacts on its operations. A review of the existing 80 years of hydrological records has shown a decline in hydrological yields, especially over the past 31 years. This resulted in the business using the last 31 years of inflow data for business planning which has effectively reduced the expected annual inflows by 500 GWh to 9,500 GWh.

Hydro Tasmania has taken up the challenge to identify and develop opportunities from the current system which could be captured to restore the "lost" inflows rather than just accepting the reduced system rating. On this basis a target to identify 1000 GWh of additional energy from system enhancement of the Hydro Tasmania's assets was set.

The 1000 GWh project is focused on enhancing the amount of water captured and utilised through Hydro Tasmania's existing assets at minimum cost and with minimal environmental and social impacts. Projects will be targeted towards developing small infrastructure to use the existing large infrastructure (i.e. power stations, dams and transmission lines) more effectively, rather than investing in new large infrastructure.

The following projects have been targeted:

- catchment diversions and diversion upgrades
    - improving canal efficiencies by relining or upgrading the capacity of canals;
    - ensuring existing small weirs are operating effectively to maximise water transfers; and
    - investigating new diversion schemes to put more water through the existing power stations;
- new storages - build small (relative to current) storages to act as regulating storages to capture higher inflows in winter. This inflow can then be released through the current system;
- raising existing storages - the likelihood of more extreme inflow events may increase as a result of climate change. Raising existing storages to capture more inflow to release during drier periods may add significant value;
- mini-hydro schemes - there are opportunities in the current system where energy is dissipated (i.e. drop structures) to put in mini-hydro schemes; and

- new power station development or redevelopment of existing power stations – some of the Hydro Tasmanian system are approaching 60 to 70 years of age. There is an opportunity to look at improving these schemes with modern technology or even reconfiguring the schemes/stations.

Over the past 12 months, an initial review of opportunities was conducted. This unveiled a number of potential ideas that look to be economically feasible. Twenty four projects have been identified as having high potential to contribute to system enhancement. These have been classified as 'Top Projects'. A project is considered to be a Top Project if it performs well under the following criteria:

- low cost to generate;
- minimal environmental impacts;
- strategic priority; and
- ease of implementation.

The Top Projects identified this year have an estimated CAPEX cost of $203M and have the potential to provide an additional 439 GWh of renewable energy (refer Figure 3). The majority of the CAPEX associated with Top Projects is associated with dam construction, dam raising and mini-hydro projects.

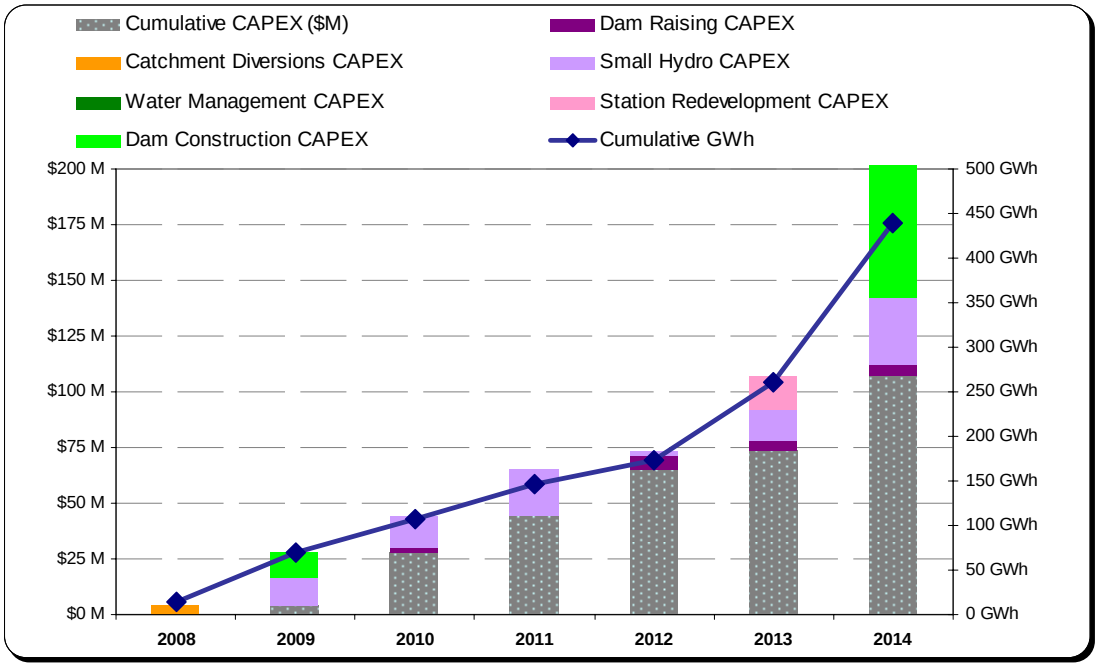


Figure 3 Top Projects proposed implementation schedule

Some of the top projects that are currently being evaluated include:

- Red Hills Diversion in to Lake Plimsol which was previously designed in the original Anthony Scheme but was cut due to costs and also the excess energy situation at the time (1996);

- Ouse River project which will capture winter flows in an off-stream storage and an on-stream storage to maximize the regulation through the Great Lake and Derwent Schemes;

- a pipeline of mini hydro projects and a business model to successfully develop these projects;

- assessment of storage raising of existing storages (i.e. Lake Plimsol which was reduced in size in the mid 1990's due to the need to cut costs, Lake Rowallan) to capture high inflows events which are lost from the system;

- upgrade of existing turbines to improve efficiencies; and

- application of a smoother lining to Tarraleah canals to increase the flow rate by up to 30% on current flows and reduce spill at the upstream storage (Lake King William).

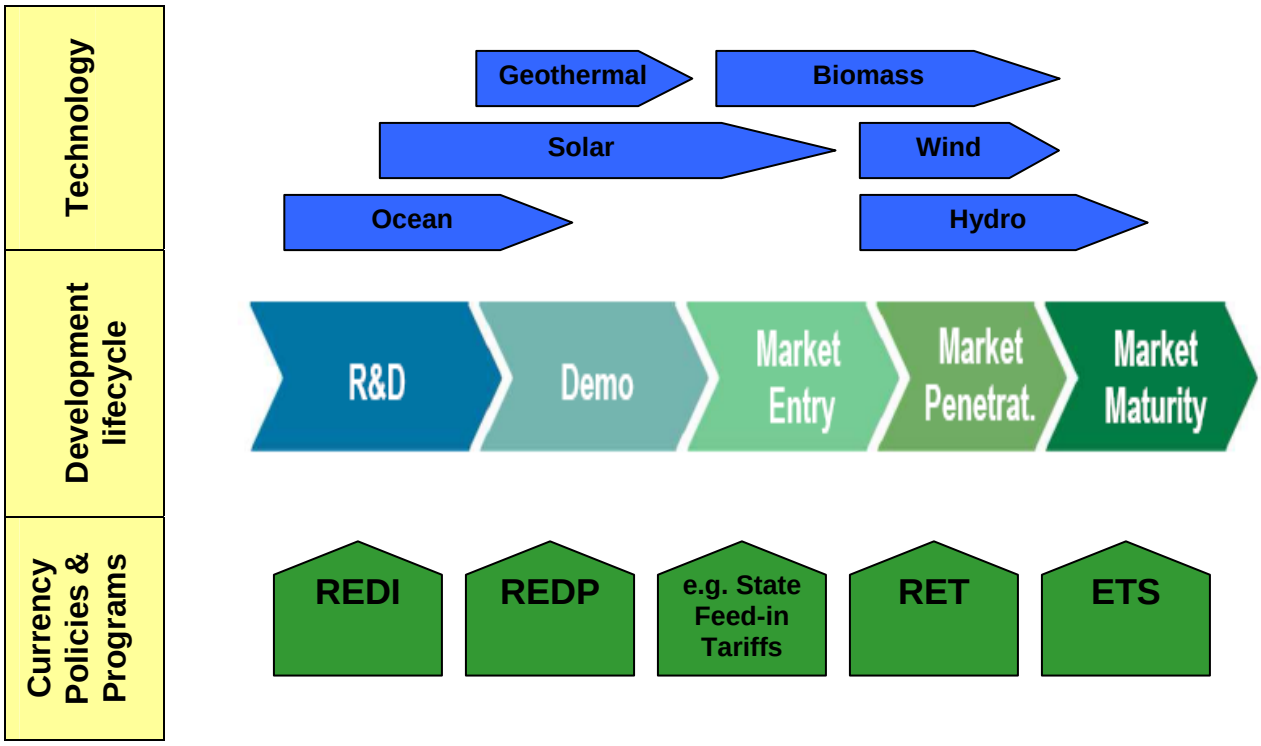
All projects implemented under the 1000 GWh project will need to be economically viable and ensure that the social and environmental impacts are minimised. Due to the amount of projects and the investment required, the development program is likely to span over many years (i.e. 15+).

The viability of many of these projects will be dependent on the right policy incentives to help develop renewable energy project as has been achieved to date through the MRET. In the absence of either an appropriate RET incentive or suitably high carbon price, then some of the 24 projects identified so far will not be financially feasible.

ATTACHMENT 3: A comprehensive policy framework

The renewable energy sector requires a comprehensive policy platform to provide necessary incentives for the development of a range of technologies throughout the full technology development lifecycle as depicted in Figure 1 below.

Figure 1 – Comprehensive portfolio of renewable energy policies



This framework must address the range of market failures that impact the development and deployment of renewable energy and ultimately contribute to sub-optimal levels of deployment.

Key market failures were most recently summarised by McLennan Magazine Associates (MMA)[10] who noted five key market failures relating to the diffusion of renewable energy technology:

1. Knowledge spill-overs: A firm adopting technologies creates benefits for other firms while incurring most of the costs of adoption and therefore do

[10] *Renewable Energy – A Contribution to Australia's Environmental and Economic Sustainability*, 2006, Renewable Energy Generators of Australia

not have the incentive to increase those benefits by investing in technological development and diffusion.

2. Adoption externalities: The cost of a new technology to a user may depend on the number of other people who adopt the technology.

3. Learning by doing: Uptake of new technologies typically involves the adopter learning by doing. The benefits of this learning by doing may be passed onto other later adopters, even though they did not compensate the early adopter for the costs incurred during the learning by doing process.

4. Network externalities: These externalities occur where costs of a technology may reduce or its benefits increase, as adoption becomes more widespread. For example, the more renewable generation deployed in an isolated region, the lower per unit transmission cost of transmitting energy to load centres.

5. Incomplete information: There is a great deal of uncertainty around the potential outcomes of adopting new technologies which may result in investors being sceptical about the prospects of a technology and demand a premium on return in order to cover the risks of the investment.

MMA also identified a range of other market barriers that impede the deployment of renewable energy. This includes transmission pricing, connection fees and differing rules for new and existing generators.

With the correct policy framework, Australia can significantly increase the level of renewable energy generation as revealed in analysis undertaken by the Commonwealth Government[11] :

> "*Provided a suitable policy framework is in place, there appears to be no technical or financial impediment to renewables providing about 50 per cent of all Australian electricity demand by 2040".*

Such a policy framework should to the extent possible, provide streamlined support that both stimulates and avoids the stalling of technology development at any stage.

Direct grants have historically been the primary method of encouraging early stage research and development and demonstration while market mechanisms like RET have been effective and favoured for the deployment and commercialisation phases. This (illustrated in Figure 2 below) is often referred to as *Technology Push – Market Pull* and is considered to be the most effective framework for successful technology development.

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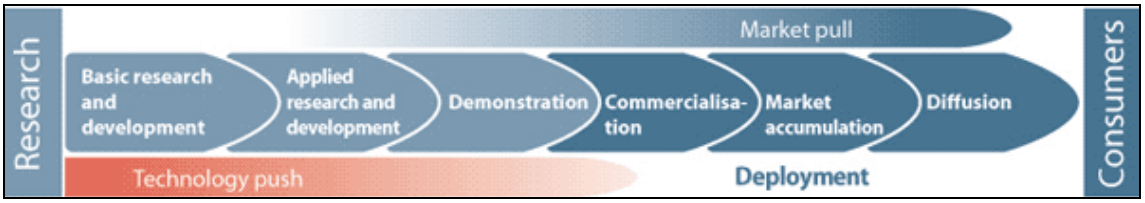
[11] *The potential for renewable energy to provide baseload power in Australia*, 2008, Australian Parliamentary Library.

Figure 2: Steps for successful technologies[12]



Such a comprehensive framework is essential to support all technologies at various phases of development, while recognising the ongoing role of RET to incentivise the deployment of least cost proven renewable energy technologies.

[12] *Report of the Task Group on Emissions Trading,* Prime Ministerial Task Group on Emissions Trading Report, 2007, p129