

5 May 2017

Climate Change Authority,
GPO Box 787,
Canberra ACT 2600

By email: submissions@climatechangeauthority.gov.au

Dear Sir/Madam,

Re: Special Review on power system security, electricity prices and emission reductions

Hydro Tasmania is Australia's largest producer of renewable energy, and is internationally recognised for its expertise in renewable energy operation and development. We are an integrated energy business providing retail energy products through our Victorian-based retailer Momentum Energy, power and water consulting services through our specialist consulting business Entura, and are a material participant in the National Electricity Market. Hydro Tasmania's assets generate around 9000GWh from hydropower and 1000GWh from wind generation in an average year (around 5% of NEM demand). In addition, Tasmania's hydropower system can store up to 14 000GWh of energy.

Hydro Tasmania has been strongly engaged in the development of national energy and climate policy for more than a decade. We have recently made a submission to the 2017 Review of Climate Change Policies and have provided technical and policy input into the Dr Alan Finkel NEM Security Review.

In light of the complexity of the challenges facing the sector at this time, it is difficult for any business to support one singular and clear solution (or combination of policies) that would provide for investor confidence, energy security, affordable energy and a reduction in emissions. If designed efficiently, there are many approaches which could have broadly the same impacts and could achieve longer-term targets. What is important is that any policy or mix of policies proposed by the Government is rigorously tested against other options through simulation and experimental economics. This could avoid unforeseen consequences and inform policy design. There are, in our view, a number of policies, or combination of policies that could meet Australia's climate and energy objectives, however, each of these will involve judgment calls and trade-offs.

Climate Policy Overview

Australia needs a stable, long-term set of climate policies that can allow Australia to meet its 2030 emissions target as well as more demanding emissions reductions in the decades that follow. It may be possible for this set of policies to become more stringent over time, however, it must also be clear to investors from the start that this will happen and that the suite of policies will evolve in-line with Australia's international commitments. Clearly signposting the future direction of policy development is important to encourage investment and provide long-term signals. This is particularly true of the

energy sector which has suffered from short-term policy and decision making which has led to sub-optimal outcomes for investors, energy consumers and Governments.

If appropriately re-calibrated, the Emissions Reduction Fund (ERF) and the safeguard mechanism have the potential to guide a transition to a low emissions economy. The ERF auctions have demonstrated that the policy can purchase significant volumes of domestic emissions abatement through a market mechanism. However, in order to reduce emissions and to meet the 2030 emissions target, Hydro Tasmania believes that:

1. **The electricity sector has a central role to play** in national action to reduce emissions and should be aiming towards zero emissions by 2050 consistent with our Paris Agreement.
2. Effective emissions reduction policy(s) will: shift the NEM bid-stack towards cleaner generation; provide efficient signals for the exit of high-emissions generation; and provide incentives for zero/low-emissions generation.
3. The **safeguard mechanism is one of the suite of mechanisms** that can be used to reduce emissions.
4. Safeguard baselines **should include a degree of flexibility and avoid permanently locking-in** higher emissions levels, particularly post-2020. One option would be to evolve existing baselines into corporate emissions intensity targets to drive investment towards cleaner energy sources.
5. Policy must facilitate appropriate investment and divestment signals for the energy sector. **Over time electricity sector emissions must progressively decrease not increase.**
6. Industries or sectors that do not have proven (or cost effective) abatement opportunities **should have access to a wide range of measures to reduce their emissions** below their safeguard baselines (for example: purchasing Clean Energy Regulator (CER) approved abatement credits; fuel switching; or direct investment in low emissions activities such as renewable energy).
7. **Sectoral policies should focus on continuous improvement** in the emissions intensity of production.

The attachment below provides further detail on our views with respect to the electricity sector. Please also find attached our 3 March submission to the Finkel Review which provides some technical commentary on power system security. Should you require more information or to arrange a meeting, please contact Colin Wain (email: colin.wain@hydro.com.au or telephone: 03 8612 6443).

Yours sincerely



Colin Wain
Policy Development Manager

Attachment - The electricity generation sector

Hydro Tasmania has consistently argued for the introduction of effective policies that can decarbonize the generation sector. If a sectoral approach is to apply beyond 2020 then it is important that this acts to reduce electricity sector emissions, consistent with national emissions reduction targets.

The Finkel Review has noted that: Australian electricity is among the most emissions intensive of OECD countries. While the national emissions reduction target does not directly translate to a sectoral target, it is reasonable to expect that the electricity sector will at least provide its 'fair share' of emissions reductions. Fortunately, the technologies and expertise needed to achieve this already exist in Australia. The challenge for Governments and energy market bodies is to ensure a market structure and incentives that can facilitate a stable and effective transition are in place. We look forward to the release of the Dr Alan Finkel review which we expect to provide further insights to this challenge.

Hydro Tasmania believes that:

- **The electricity generation sector will deliver at least its 'share' of the national emissions reduction target** (26% to 28% below 2005 levels by 2030) and has the capacity to provide a higher share of the national abatement task;
- Policies that are inconsistent with delivering a proportionate share are unlikely to be seen as credible and enduring in the boardrooms of energy sector investors;
- **Agreement on the ultimate 'end-point' for the sector** can assist and streamline investment. This end point is the eventual decarbonisation of the energy sector by around 2050;
- **Relevant carbon pricing options should be considered;**
- A stable suite of energy sector policies is a prerequisite for substantial new investment;
- **Understanding the nature and timings of future station closures will be important.** This could warrant consideration of policies that facilitate a planned exit for high emissions generation.
- **NEM governance must be agile enough to respond to market trends.** A long-term vision for the sector can allow market governance bodies to operate in accordance with long-term aims.
- **Transformation of the generation sector will require alignment of energy and climate policy.** This can ensure a balance between the trilemma outcomes. Both supply-side (generation) and demand-side (consumption) approaches must be considered.
- **The integrity of NEM pricing signals should be preserved as far as possible.**

Low Emissions Targets, Emissions Intensity Schemes, Carbon Pricing, and regulated closure mechanisms could all work if carefully designed and will have broadly the same cost impacts if economically efficient. Effective emissions reduction policy(s) will: shift the NEM bid-stack towards cleaner generation; provide efficient signals for the exit of high-emissions generation; and provide incentives for zero/low-emissions generation. This could be achieved without the need for a sectoral or economy-wide carbon price if an effective combination of other policies is enacted. Economic simulations and experimental economic testing of policy design is important. This could aid policy design and avoid unintended consequences.

In considering future energy affordability it is clear that there is a need for strong uptake of energy efficiency across the economy. This has been recognised through the Federal Government's announced National Energy Productivity Plan. Frameworks should balance the need to facilitate uptake of energy efficiency against the creation of additional regulatory requirements on businesses.

The role of hydropower and the future role for Tasmania

Many of Australia's hydropower stations are more than 40 years old and have passed their half-asset life. Hydro Tasmania's forward capital expenditure requirement over the next ten years for the maintenance, refurbishment and upgrade of existing plant is in excess of one billion dollars. Hydropower (including pumped-hydro) will be increasingly important as the proportion of variable renewable energy increases. The modernisation and augmentation of existing flexible renewable energy assets should be a key part of any future energy strategy. As such any decarbonisation policy for the sector must support the retention and optimisation of these assets.

Pumped hydro is an established 'gold standard' energy storage technology. It provides several key characteristics including frequency stabilisation (inertia) and frequency control services and system strength (fault level). However, at present there is no policy or financial signal (beyond energy arbitrage) to develop "firming" projects in Australia. As a result, while there continue to be feasibility studies on potential sites, to date it has remained difficult to progress substantial investments. These studies should include examining opportunities to provide inertia, frequency control and system strength from existing waterways and hydropower assets. Hydro Tasmania's portfolio already operates like a 'virtual' pumped hydro system. When prices are low on the mainland or water resources are low, energy is imported over the Basslink interconnector and natural inflows into many of Hydro Tasmania's water catchments builds up energy storage. There is significant opportunity to invest in Hydro Tasmania's existing portfolio to increase renewable energy production into the NEM and provide additional system support services. Hydro Tasmania is pleased to be partnering with the Australian Renewable Energy Agency (ARENA) and the Tasmanian and Commonwealth Governments to assess the role that Tasmania can play in a future decarbonised NEM.

Our experiences in Tasmania have demonstrated that modifying the operation of existing plant as well as approaches such as tripping schemes can optimise a variable, interconnected grid and allow the deployment of higher levels of non-synchronous generation. The role of the existing electricity generation assets should be fully considered to ensure a least cost outcome for consumers. With respect to electricity generation this means assessing the ability to enhance the contribution from existing low and zero emissions generators such as hydropower and the role it can play in supporting the development of further variable renewable energy sources. Again, any future decarbonisation policy must support this goal and be consistent with NEM operation and governance. Hydro Tasmania has engaged the Finkel Panel on these issues and looks forward to the release of their report.