Climate Change Consultation
Department of Water and Environmental Regulation
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Climate Change in WA Issues Paper September 2019

The Australian Energy Council (AEC) welcomes the opportunity to make a submission to the Department of Water and Environmental Regulation on the 'Climate Change in WA Issues Paper'. The AEC is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia and sell gas and electricity to over 10 million homes and businesses.

Summary

The AEC supports the development of a long term roadmap that assists with the careful planning and investment required to ensure the continued prosperity of Western Australia, and acknowledges the state's commitment to working with all sectors of the economy to achieve its target of net zero emissions by 2050.

The AEC has a long-standing policy of supporting a technology and geographically neutral market-based approach to addressing emissions. In that regard we prefer approaches that are taken at the national level rather than sub-national.

In particular we see value in laying out a long-term emissions pathway combined with periodic interim targets. This provides a good balance between industry certainty and flexibility with respect to developments in the economy, climate science and international negotiations. We consider this approach to be most valuable when applied in the following ways:

- As a model to be promoted to the Commonwealth for setting national targets to apply to national schemes;
- As a guide for developing the Western Australian Government's position with respect to the development of national emissions policy negotiated through the Council of Australian Governments (CoAG).

Consistent with a preference for a national approach, the AEC believes any state targets should relate to national reference points, and these should preferably be consistent with Australia's existing international legal commitments. We therefore encourage the WA Government to advocate for its net zero emissions target by 2050, to the Federal Government via CoAG.

In addition, we urge the WA Government to consider that the most economically efficient abatement available to industry may be achieved outside of the WA state boundary. We therefore recommend that

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abatement projects undertaken to meet objectives of the WA Climate Change Policy, be allowed to occur physically outside of the WA state border. For reference:

- California and Australian Capital Territory both have abatement targets that rely heavily on electricity sector actions physically taken outside the borders of each jurisdiction. Both approaches employ careful accounting practices to achieve confidence in the verification and additionality of those actions;

- It is generally cheaper to integrate renewable energy into the National Electricity Market due to the high degree of inter-connection between geographic regions, unlike the stand-alone nature of the South West Interconnected System. That is to say, a geographically-neutral competitive path is likely to discover cheaper solutions for abatement by considering projects outside of WA. The Australian Carbon Credit Units may be a mechanism for accounting for offsets outside of WA.

Finally, the Government of Western Australia can foster the development of clean industries and technologies by encouraging the federal government (via COAG) to pursue a national carbon price mechanism.

Transport sector

Whilst stationary energy emissions are best addressed nationally, there are likely to be significant benefits in state-based action in the land transport sector. This is because:

- Land transport infrastructure and regulation is almost entirely the responsibility of sub-national jurisdictions;

- Unlike stationary energy, transport emissions are on a consistently strong growth path and show no sign of plateauing in a business-as-usual future;

- The transport sector is likely to be more responsive to direct state and local government actions, through its existing regulatory role, such as vehicle registration and parking controls. These roles are likely to be more effective in encouraging improved consumer choices than the Commonwealth's more indirect role in fuel excise and vehicle standards;

- Government actions in the land transport sector to reduce liquid fuel consumption are frequently shown to have negative costs to users, by overcoming informational and other barriers.

The AEC agrees there are substantive opportunities to reduce transport emissions as listed in the paper, particularly in relation the electrification of transport combined with decarbonisation of the electricity grid. In addition to further electrification of public transport (e.g. electric busses) we would also identify the opportunity for electrification of municipal service vehicles, such as rubbish collection. With respect to vehicle electrification we note that:

- Electric vehicles are considerably more energy-efficient in an urban setting than conventional vehicles and therefore less emissive even if supplied with fossil-fuelled electricity;

- Electricity generation emissions intensity has already fallen considerably from its historical level, and this improvement is expected to continue under any scenario;

- New demand from electric vehicles will be met by marginal electricity generation over time. Coal plants are presently being retired at their ends of life and not being replaced. It can therefore be reasonably assumed that all additional marginal demand will be met by new renewable and low-emissions gas-fired generation.

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Mining

The AEC also notes there are growing opportunities to reduce emissions from the WA mining sector such as:

- Further integration of solar PV and wind into the generation mix in mine electricity supply. In particular, increased integration of networks in the Pilbara region will facilitate higher penetration of renewable energies;
- Electrification of rail in the Pilbara;
- Conversion to electric or hydrogen fuel cell powered heavy haulage:
    - Off-road haul trucks;
    - Road train haulage.

In addition to the broader comments above, we have provided specific responses below to questions tabled in the issues paper.

Transforming energy generation

What are the main challenges for decarbonising Western Australia's electricity supply while ensuring adequate generation capacity, security and reliability?

Maintaining a favourable environment for future investment:

- Ensuring appropriate investment signals in dispatchable generation, and that the capacity payment arrangements correctly recognise the need for firm capacity at different times;
- Ensuring that the ability to ramp firm capacity up and down can be appropriately valued and rewarded in the market;
- Reform to enable energy storage technologies to access multiple revenue streams across capacity payments, balancing market and essential system services;
- Ensure incumbent generators are not disadvantaged in allocation of capacity credits in a future constrained access environment;
- Ensure incumbent generators are compensated appropriately for existing access rights when transitioned to a constrained access model under the Energy Transformation Taskforce program of work.

Management of intermittency in relatively small grids such as the SWIS and NWIS (i.e. small relative to the National Energy Market - NEM):

- Integrating large volumes of intermittent generation sources into non-interconnected grids whilst maintaining energy security and reliability is challenging;
- In the South West Interconnected System (SWIS), there is a no ability to import and export energy from/to other geographies when there are energy supply shortfalls or surpluses. In the NEM there is a greater ability to transfer firm capacity or intermittent generation with other states to benefit from a diversity of load, supply and weather. This issue is even more critical for generation outside of the SWIS (e.g. NWIS, Isolated mining loads);
- A significant volume of generation exists outside of the SWIS supplying mining loads. These loads are often supplied using stand-alone electricity systems leading them to be highly susceptible to the effects of intermittency at high levels of Renewable Energy (RE) penetration;
- High concentration of small scale solar (rooftop) with poor transparency of output and no controllability to curtail in a system event. The DER roadmap within the Energy Transformation Taskforce is expected to improve management of this issue.

Implementation of reforms:

- Reflecting the underlying costs of the energy transition will need reforms to the regulated market. As much of the customer base is not open to competition and has regulated prices, then any attempt to reflect the underlying costs must first be prosecuted politically;

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- Effective definition and procurement of essential system services to maintain system security in the SWIS will need to ensure revenue adequacy for the provision of these services;
- Planning and integration of new loads due to electrification of other sectors (transport) needs to be managed in a flexible manner to ensure adequate generation capacity, security and reliability.

What are the most effective ways to overcome these challenges by 2030?

The AEC supports addressing the above barriers in a planned and systematic manner. In particular attention should be brought to bear on:

- Ensuring a favourable environment for future investment is maintained and clarity provided with regard to the roles of the private versus public sectors;
    - A key aspect supporting future investment is to ensure reforms respect the rights of existing investments made in the energy system;
- Decarbonisation approaches that are technology neutral and where appropriate market based;
- Electrification of transport matched to incentives for charging during low demand periods;
- Delivery of the Energy Transformation Taskforce program of work particularly:
    - Reform to enable new and potentially unconventional technologies to access multiple revenue streams across capacity payments, balancing market and essential system services;
    - Transparency and controllability of DER output;
    - Reform to demand side signals such as cost reflective tariffs, to enable consumers to match load to RE generation profiles thereby reducing costs;
- Greater energy interconnection in the Pilbara.

Should the electricity sector make a pro-rata (or greater) contribution to Australia's national greenhouse gas emission targets?

Electricity typically offers cheaper abatement costs compared with decarbonisation of other sectors, but pathways such as energy efficiency also offer low abatement costs across multiple sectors. However, the extent to which the electricity sector should contribute a greater contribution to emissions reduction should be informed by the cost per tonne of abatement. We support carbon trading as a mechanism to identify and achieve the lowest cost of abatement regardless of what sector the abatement actually occurs in. We do not support a carbon price for WA alone but encourage the WA government to pursue a national approach via COAG.

We also note - Abatement may be much cheaper in other parts of Australia, and considering the higher costs of integrating RE into smaller grids this is a particularly sensitive issue for WA. We therefore support a national target that facilitates investments in abatement outside of the WA state boundary.

How fast do you think the transition of the electricity sector should occur?

The AEC supports Australia's existing international legal commitments under the Paris Agreement to achieve net-zero emissions in the second half of this century. The transition to net zero in the electricity sector should broadly be aligned to this commitment.

Future mobility

What can be done to facilitate the uptake of electric and other low-emission vehicles in Western Australia?

Electric vehicles are considerably more energy-efficient in an urban setting compared with conventional vehicles and therefore less emissive even if supplied with fossil-fuelled electricity. New demand from electric vehicles will be met by marginal electricity generation over time. Coal plants are presently being retired at their ends of life and not being replaced. It can therefore be reasonably assumed that all additional marginal demand will be met by new renewable and low-emissions gas-fired generation.

EV uptake together with achieving gains in decarbonisation can be greatly facilitated by:

- Purchasing of EV's for government fleet vehicles;
- Further electrification of public transport (e.g. electric busses);

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- Electrification of municipal service vehicles such as rubbish collection;
- De-regulation of electricity tariffs to support product innovation and the provision of low cost charging products for EVs.

This would create early stage demand allowing for the growth of the EV sector. Further support could be considered in relation to:

- Making charging stations more available to non-government vehicles;
- Incentives for corporate fleets to transition to EV;
- Temporary discounts on vehicle costs such as registration, parking;
- Access to off-peak low cost electricity.

Liveable towns and cities

What information or tools do you require to improve energy efficiency in your household or workplace?

The provision of Advanced Metering Infrastructure (AMI) will provide consumers valuable data on their electricity consumption and allow for the development of product innovations that can be better matched to customer needs. For example, this could allow future offers to customers that take advantage of periods of low cost wholesale energy supply.

Any questions about our submission should be addressed to Ben Skinner – General Manager Policy and Research by email to ben.skinner@energycouncil.com.au by telephone on 03 9205 3116.

Yours sincerely,

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