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Committee Secretary
Senate Standing Committees on Environment and Communications
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Parliament House
Canberra ACT 2600

By email: ec.sen@aph.gov.au

10 November 2016

Dear Sir / Madam,

Parliamentary Inquiry: Retirement of coal fired power stations

AGL Energy **(AGL)** welcomes the opportunity to provide a submission to the *Parliamentary Inquiry: Retirement of coal fired power stations* (the Inquiry)

As a leading integrated energy retailer AGL is well placed to provide comment on the issues presented. AGL operates across the supply chain and has investments in coal-fired, gas-fired, renewable and embedded electricity generation, upstream gas production and provides energy solutions to over 3 million customers. The diversity of this portfolio has allowed AGL to develop a detailed understanding of the risks and opportunities presented by energy and climate policy. AGL economists have published a range of peer reviewed research on impacts associated with energy and climate policy.

AGL welcomes discussion on a critical element of the transition to a decarbonised energy sector. The transition must acknowledge the costs, benefits, challenges, risks and opportunities commensurate with their importance to the community over the long term. The decarbonisation of the electricity sector will span several decades, and a long-term vision and trajectory are essential.

As a central component of decarbonisation, the retirement of existing aged emission intensive generation must be addressed in a considered, pragmatic manner sensitive to the extensive impacts on communities. The following principles must underpin any consideration of retirement policy:

- Communities deserve and require certainty to plan for a transition;
- Irrespective of the mechanism used, a closure policy should result in an orderly and predictable closure/transition process;
- Direct and complementary mechanisms intended to effect this transition must integrate the three key, but sometimes competing objectives of competitiveness, energy security and decarbonisation; and
- Political and policy cooperation must recognise the critical role of state governments in energy policy and as such Federal-State cooperation should be of primary concern in the development of approaches.

Further information is provided below. To discuss any aspect of this submission, please contact Cameron Reid [redacted]

Yours sincerely,

[redacted]

Dr Tim Nelson
Head of Policy & Sustainability, AGL Energy

This submission focusses on core elements of the transition and the need to better integrate the three key, but sometimes competing objectives: competitiveness; energy security and decarbonisation.

Background & Context

The National Electricity Market (NEM) was created as an 'energy-only' market. Electricity generators are paid for the 'energy' they produce but not the reliable 'capacity' they make available.

The energy system requires a range of attributes to be safe, secure, affordable and reliable including energy, inertia, frequency control and other ancillary services. However at present, payment for energy is the mechanism by which generators receive their investment returns. While there exists some market revenue for other services (FCAS) this represents a trivial and non-bankable revenue stream for investment purposes and there is no value ascribed to capacity being available for dispatch as required.

Around three-quarters of the NEM's thermal (coal and gas) plant is well past its original design life. These plants will need to be replaced with low emissions capacity (such as renewables, gas and advanced batteries) over the coming decades to ensure that system reliability is maintained. However, potential barriers to exit and relatively stagnant electricity demand have consistently supressed wholesale electricity revenues below the level required for new investment. This is a problem for investment in both renewable and complementary capacity (e.g. open-cycle gas turbines, pumped storage and advanced batteries).

If the electricity market architecture is not updated, renewable generators will be overwhelmingly reliant upon policy-based subsidies rather than market revenue. This potential scenario deters new investment, raising costs and risking system security unnecessarily as the NEM increasingly relies on ageing, legacy plant.

Orderly transition

Eventually ageing emissions intensive power stations will close. However, due to a range of factors, any closure announcements, particularly from large generators, are unlikely to be made in a timeframe consistent with longer term planning. As such there is likely to be little to no ability to allow new capacity and system planning considerations to account for such a closure in a timeframe commensurate with an efficient transition. The factors highlighted would include the lumpy nature of capital investment, barriers to exit and the range of organisations and stakeholders involved in any closure scenario.

There is a role for governments to establish policy that facilitates 'orderly' rather than 'disorderly' exit of emissions intensive aged power stations. Such policy could be based upon age (e.g. Canadian rule which requires power stations to be closed or retrofitted with carbon capture and storage when they turn 50), emissions intensity or a market mechanism (as proposed by Jotzo and Mazouz). Ultimately, policy makers should view such a closure policy as not only an important means of securing energy supplies from modern generation equipment; but also an effective way of systemically reducing greenhouse gas emissions and providing communities the certainty they deserve to plan for such a transition.

Orderly phase out of coal fired generation

In excess of 80% of electricity generated is sourced from the combustion of fossil fuels, the majority of which is provided by coal fired generation. The transition to a decarbonised and modernised generation sector requires large scale investment, recent AGL analysis estimates this at $23 billion in renewables alone to achieve an emission reduction consistent with a 27% reduction in GHG emissions by 2030.

Such investment will be supported by policy that provides macro level certainty as to the timeframe and operating life of incumbent plant.

Such certainty has the potential to benefit a range of factors contributing to the efficient transition including new investments, management of existing capital stock, policy development, community transition and energy market development.

Investment

- Greater investment certainty for capital providers and proponents likely to result in lower cost of capital
- New investment can better coincide with decommission of existing plant to maximise system efficiency
- Mitigation of wholesale price impacts through smooth transition of generation sources
- Greater foresight on generation attributes required

Incumbent investment

- Greater efficiency of capital and operational expenditure
- Enhanced integration of rehabilitation expenditure into planning cycles and other activities

Market and policy development

- More granular and predictable foresight on industry environment
- Enhanced ability to assess policy impact and potential for complementary policy requirements (e.g. NEM or market reform / gas policy / vehicle standards)
- Enhanced foresight for community transition planning
- Smoothest possible trajectory for emissions and wholesale prices

Community

- Enhanced ability to plan for structural community adjustment
- Ability to integrate rehabilitation requirements into local training and education requirements
- Potential to facilitate industry level impacts and responses as opposed to company specific considerations (e.g. rehabilitation and decommissioning activities)
- Firm basis upon which to engage with community, industry and government stakeholders
- Enables impacted individuals to make longer term planning decisions

Mechanisms for consideration

AGL notes that irrespective of the mechanism, the underlying principle to be achieved is one of an orderly transition of aged emissions intensive generation.

AGL is aware of a range of mechanisms that have been proposed for consideration across a range of stakeholders from industry, non-government organisations and academic organisations.

These mechanisms include:

- Regulation based on age, emission intensity or other such as the introduction of a 50 year rule similar to that utilised in Canada
- Market mechanism such as a baseline and credit scheme
- Government or market funded contract for closure (e.g. Jotzo model)
- Through a securitisation vehicle where costs are calculated and wrapped into investable bond-style financial instruments funded by consumers or government over 30 years

Community transition

AGL's Greenhouse Gas (GHG) Policy provides a framework within which we will structure future carbon reduction activities throughout our generation portfolio and the economy. Core principles of the policy include not to extend the life of our coal fired assets beyond their technical life and to advocate for effective long-term government policy to reduce Australia's emissions that will enable further investment in renewable and low-emission power generation.

This has the effect of AGL placing a limit on the operation of its coal fired assets and providing communities and the industry clear dates for the planned cessation of activity.

In 2022 AGL's Liddell Power Station is due for closure, followed by Bayswater Power Station in 2035 both located in the Hunter Valley region (NSW). In the Latrobe Valley (VIC), AGL's Loy Yang A Power Station and Mine site has a closure date of no later than 2048.

AGL recognises these assets are significant regional contributors to economic activity and employment. As these generation assets close, and in the lead up to these events AGL will strive to minimise negative impacts on regional communities and support the development of new opportunities for growth.

As significant industrial bases, the Hunter and Latrobe Valleys can play a key role in the growth of an energy technologies and services sector for NSW, Victoria and Australia more broadly.

AGL is driving strategies and initiatives principal objective to develop industrial ecosystems with Government, education providers and industry.

Our work has been informed by successful economic transitions in other jurisdictions, including the case of Sheffield in the United Kingdom. Through collaboration, the sites of former coking plants were re-established as one Europe's largest advanced manufacturing precincts.

This transition was driven by a creating specialised research ecosystem through a partnership of industry, government and the University of Sheffield and has developed into a world class advanced manufacturing precinct.

In Victoria, AGL provided support and analysis for the Committee for Gippsland's 2016 Report: Our Region Our Future: Securing an industry future for the Latrobe Valley.

AGL is a partner in the development of the Victorian Government's Latrobe Valley "Tech School" initiative. AGL believes that the integration of the 'Tech School' within a broader transition framework is critical if the region is to develop new economic ecosystems.

In NSW, AGL is collaborating with the NSW and local governments, business partners, organised labour and other regional stakeholders to set a path forward for community growth through its decommissioning process. In the Hunter, Energy Transition Alliances (Alliance). The Alliance is being undertaken in collaboration with the Newcastle Institute of Energy and Resources, and is an approved project under the New South Wales Government's Energy Innovation Knowledge Hub. This Alliance is made up of Hunter region businesses, the education sector, government and community organisations.

The Alliance is proving an effective engagement model through which AGL can proactively manage the economic and employment impact of the prospective closure in 2022 and 2035, respectively, of the Liddell and Bayswater power stations. The stability provided by the Alliance has already directly resulted in the location of a number of businesses in the locale.

Further reading

AGL economists have published a range of peer reviewed research on impacts associated with energy and climate policy. Links to relevant research are included below and form part of this submission.

Document title	**Location**
AGL Greenhouse Policy	http://www.agl.com.au/~/media/AGL/About%20AGL/Documents/Media%20Center/Corporate%20Governance%20Policies%20Charter/1704015_GHG_Policy_Final.pdf
Climate and electricity policy integration: Is the South Australian electricity market the canary in the coalmine?	http://www.sciencedirect.com/science/article/pii/S1040619016300306
Climate Policy – Where to From Here?	http://onlinelibrary.wiley.com/doi/10.1111/1759-3441.12114/full
Energy-only markets and renewable energy targets: complementary policy or policy collision?	http://www.sciencedirect.com/science/article/pii/S0313592615000156
Inertia Ancillary Service Market	http://www.aemc.gov.au/Rule-Changes/Inertia-Ancillary-Service-Market