



DEWNR Climate Change
GPO Box 1047
Adelaide SA 5001

Lodged online: www. <http://yoursay.sa.gov.au>

19 October 2015

Dear Sir/Madam,

SA Government: Development of a new Climate Change Strategy

AGL Energy (**AGL**) welcomes the opportunity to provide comment on the South Australian Government's development of a new Climate Change Strategy Roadmap (*the Strategy Development*).

AGL operates across the energy supply chain and has investments in coal-fired, gas-fired, renewable and embedded electricity generation, upstream gas production and provides energy solutions to over 3.7 million customers nationally.

Within the state of South Australia, AGL is responsible for supplying gas and electricity to over half a million customers and has generation operations at Torrens Island and in the Wattle Point and Hallett regions, as well as call centre operations in Eastwood, Adelaide. This has enabled us 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 (see appendix one).

AGL recognises the importance of our involvement in the development of long term goals supported by constructive and transparent public discourse on the impacts, risks and opportunities associated with these goals and the policies required to achieve them.

AGL acknowledges the long term aims of the South Australian Government, and encourage the integration of climate and energy policy. In light of altering market dynamics integration will require expert input from energy market regulators, academics and technical experts in addition to climate change specialists to assess appropriate responses to developing energy market challenges.

Our detailed feedback on areas identified in the Strategy Development is documented below. Should you wish to discuss any aspect of this submission, please contact Cameron Reid on creid@agl.com.au or 03 8633 7201.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Tim Nelson'.

Tim Nelson
Head of Policy & Sustainability

General comments

AGL welcomes discussion on the development of a new climate change strategy for South Australia including the transition to a decarbonised energy sector. These important policy areas require an integrated strategy which considers this interaction and overlap of costs, benefits, challenges, risks and opportunities and their impact on the community over the long term.

AGL is Australia's largest private owner, operator and developer of renewable generation and the 2015 AGL Greenhouse Gas Policy outlines a renewed commitment for AGL to contribute to Australia's climate change objectives. As the owner of significant greenhouse gas emitting assets, AGL has committed that it will not extend the operating life of any of its existing coal-fired power stations, and that by 2050, AGL will close all existing coal-fired power stations in its portfolio. AGL will also continue to advocate for effective long-term government policy to reduce Australia's emissions, and that will enable further investment in renewable and low-emissions power generation.

AGL supports the Commonwealth Government's commitment to work towards a global agreement to limit global warming to less than 2°C above pre-industrial levels (2° goal). This is likely to require complete decarbonisation of the world economy by 2100 and emission reductions of up to 70% by 2050. As a significant source of greenhouse gas emissions in Australia, the decarbonisation of the electricity sector over the coming decades will be critical to achieving this goal, and both renewable and lower emissions fossil fuel generation are likely to be required. Consideration needs to be given to both the transitional nature of the challenge and the essential service nature of a reliable and affordable supply for electricity users.

Climate change is an issue of global significance, and international coordination is required if dangerous climate change is to be prevented. It is therefore preferable that Australia's response to climate change occurs at the national level, including the setting of emissions reduction targets and policies. A long-term, bipartisan approach to climate change policy at the Commonwealth level is required to provide investors with the certainty required to develop the long-lived and often capital intensive projects that will enable Australia to reduce its emissions efficiently over time, and at least cost.

Climate change programs developed by State Governments should give due consideration to Australia's commitments under international climate change agreements and policies implemented at the Commonwealth level to achieve these targets.

A national approach is particularly important for the transition to a decarbonised electricity generation sector given the existence of the interconnected National Electricity Market (NEM) and South Australia's position within it, importing and exporting energy to and from NSW and Victoria via the Heywood and Murraylink interconnectors. These interstate implications involve the importing or exporting of emissions associated with electricity generation, and mean that any state-based



electricity sector policies are likely to be sub-optimal unless careful consideration is given to their interaction with the NEM (and its associated markets).

The generation mix in the NEM, including in South Australia, is old and emissions-intensive by international standards, and around 75% of the installed capacity is already operating beyond its original design life. The decarbonisation and modernisation of the electricity sector will span several decades, and a long-term vision and trajectory for this transition is essential, to ensure continued investment in zero-emissions energy sources, and the orderly retirement of old and emissions-intensive power stations. Establishing long-term policy certainty will be critical to attracting investment to the large-scale renewables sector.

Governments at all levels have a role to play in this decarbonisation process, and South Australia should, in particular, consider opportunities for the State Government to provide support to or enhance Commonwealth and nationally consistent initiatives, such as through planning approval processes, and energy market regulatory settings.

The proportion of electricity generation from intermittent renewable sources in South Australia is very high relative to other markets internationally, and with the announced retirement of significant fossil fuel generation capacity, South Australia will be at the forefront of transitioning to a lower-emissions generation mix.

The South Australian Government has the opportunity to play a leading role, working with market institutions and other technical experts, to investigate whether any technical or regulatory response is required to ensure the design and function of the NEM is fit for purpose in the future, and will continue to deliver secure and affordable electricity supplies.

It is critical that any policies or programmes are assessed against defined objectives. AGL notes that different solutions are likely to emerge depending on whether the Government's primary aim is to reduce greenhouse gas emissions or increase the use of renewable energy, and it is therefore crucial that objectives are clearly defined, so that market participants are able to propose their most competitive projects, products or offers that will meet key criteria. This is particularly important considering that the costs of energy programs, if not funded directly by Government, are ultimately borne mostly by electricity consumers (as participants will seek to recover cost to the extent possible in competitive markets). Clear, well understood objectives enable market participants and consumers to transparently assess the costs and benefits of different proposals.

AGL analysis has shown that on average, customers experiencing financial hardship use much more energy than the average household, and are therefore particularly affected by increases in energy prices. As such, the interaction and impacts of policy mechanisms and objectives must be carefully assessed to ensure that complementary or parallel policies are considered where appropriate. In particular, vulnerable and high-consumption households could receive targeted energy savings measures. Such an approach should be technology neutral and include both available energy efficiency and renewable energy measures (such as solar PV). AGL supports the government removing barriers for customers living in public housing and private rental properties which prevent them from accessing the benefits of this technology. AGL has dedicated \$1.5 million over the next three years to invest in

energy savings technologies for this customer group and would welcome a co-investment approach with state governments.



New technologies such as distributed generation, digital metering, electric vehicles and battery storage (along with the products and services that are enabled by these technologies) have the potential to unlock widespread benefits in Australia's energy markets, including reducing customers' energy bills. To realise these benefits, regulatory frameworks should provide competitive neutrality with regard to existing energy supply arrangements, so that existing and emerging business models can compete on their merits and enable consumers to choose products and services that suit their circumstances. Regulated revenues should not be able to be used to support business activities in contestable markets. AGL is a strong supporter of customer choice in relation to new energy technologies, and has an aspirational target to establish a 'smart connection' in one million Australian homes and businesses by 2020.

It is important the South Australian Government consider policy that enables innovation. The introduction of contestable metering can facilitate a greater uptake of digital meters, providing the cornerstone of customer focused solutions that can be enabled by this infrastructure.

AGL's detailed responses to the REDUCE and Carbon Neutral Adelaide consultation papers are provided below. Feedback on the remaining papers is of a general nature and is included within this overview section.

Response to the REDUCE strategy paper

- The suitability of an increased target and whether any new target should be included in the Climate Change & Greenhouse Emissions Reduction Act
- Whether the 50% renewable energy target should be legislated
- The value of setting interim reduction targets

The energy market is a combination of the physical generation of electricity and the financial markets designed to facilitate the most cost-efficient delivery of electricity to consumers over the long term by enabling a range of risk management strategies (e.g. hedging contracts). The increased level of intermittent renewable generation capacity impacts the risk management options available (e.g. intermittent generators not able to provide hedging contracts) to market participants. This, when combined with the exit of firm capacity, reduces the ability of market participants to effectively manage their exposure to market risk. These impacts must be given due consideration by policy makers. Any renewable energy target applicable to South Australia may impact financial markets as well as physical energy markets and therefore have implications for the delivery of reliable and affordable energy for South Australian homes and businesses.

AGL recommends the inclusion of any technology able to contribute effectively to the decarbonisation of the electricity generation sector over the coming decades and that any policy suite should remain technologically agnostic. The market will ultimately determine which technologies are cost-effective in these timeframes.

AGL economists have performed detailed analysis of the interaction of renewable energy and energy only markets (a link is provided in the reference section of this document). AGL believes that given the state of the market, the level of decarbonisation required and the timescales over which the reform is required, that



appropriately designed regulatory mechanisms, drawing upon international experience, may provide the most effective outcome that balances the needs of a range of stakeholders.

Given the market based policy mechanism of the Renewable Energy Target (RET) and the energy-only market design of the NEM in particular, it is unlikely that the investment in large scale renewable projects required to meet the RET will be forthcoming without complementary policy being introduced.

For long-term transformation to be effective, AGL considers that energy market design and climate change policies need to be integrated to allow energy affordability, reliability and environmental sustainability to be pursued jointly by market participants over time. Government policy should most importantly create a stable investment environment conducive to the efficient transition to a decarbonised generation sector over the coming decades.

Any climate change strategy, and energy generation strategies for South Australia must consider the treatment and utilisation of the Heywood interconnector. The net flow of energy from Victoria is a significant source of indirect greenhouse gas emissions for South Australia, whilst simultaneously enabling greater amounts of renewable energy to be built within South Australia.

It is AGL's view that there is considerable merit in South Australia supporting and working closely with the Australian Energy Market Commission (AEMC), the Australian Energy Market Operator (AEMO) and other academics and technical experts to investigate whether any regulatory responses may be required to address market changes, including the significant intermittent renewable generation (including growing quantities of small-scale, non-scheduled, distributed generation) and the mothballing or retirement of synchronous generation. This is a particular issue for South Australia, where the closure of several thermal power stations will occur in the coming years (most recently Alinta has announced of the full closure of its Northern Power station by March 2016), raising clear risks associated with system reliability and stability (or widespread outages in the event of interconnector failure).

As highlighted in the AEMO SA Energy report, with the planned closures (and mothballing) of existing thermal capacity SA energy market will face a range of challenges associated with the high penetration of renewables relative to synchronous generation. This is particularly likely in periods of high demand such as prolonged heatwaves which are forecast to increase in number and severity as a result of anthropogenic climate change¹.

The technical response to these issues is likely to require assessment of the needs of South Australia across a range of policy areas. AGL encourages the government to consider a broad range of technologies, and policy frameworks to encourage adoption of innovative approaches. This could range from the evolution of the regulatory environment to provide for greater competition in stability related services, co-investment in solutions that involve large scale storage, coordinated management of distributed energy generation and storage capability and demand management services.

¹ <https://www.environment.gov.au/climate-change/climate-science/impacts/sa>

- Opportunities for greater energy efficiency at industrial and household levels

There are opportunities for the South Australian Government to enhance the take up of demand-side products and services that enable households and businesses to increase their use of renewable energy, improve their efficiency and reduce their bills (such as distributed generation and storage).

Future energy markets will be considerably more customer-focused and decentralised than they are today, and it is important that regulatory settings that were developed for a fundamentally centralised energy system with clearly defined market participants (generators, networks, retailers, consumers) are reviewed to ensure they are suitable for the future. To facilitate this market transformation, regulatory frameworks need to be technology-neutral and flexible to support a range of innovative new business models to enter the market, and AGL considers that there are four key regulatory priorities:

- Appropriate standards for new technologies to ensure that products in customers' homes are safe, fit-for-purpose and of high quality.
- Provision of demand side services on a competitive basis, to drive down costs for consumers and to enable the market to innovate a range of products and services for customers choose from. Regulated revenues should not be able to be used to support business activities in contestable markets. AGL supports decisions by the Australian Energy Regulator (AER) to reduce allowances for network businesses, and further reform to network pricing regulation may be required to ensure that cost recovery and investment by networks is efficient, transparent and justifiable.
- Ring fencing of network businesses wishing to compete for the provision of new products and services. AGL supports the establishment of a nationally consistent ring fencing guideline to address the structural and financial separation of network businesses wishing to participate in the competitive market so that competitive neutrality between market participants is maintained. Situations where conflicts of interest may arise need to be carefully considered, such as where network businesses are seeking to offer contestable services, but continue have discretionary powers to authorise the connection of technologies to the grid by their competitors.
- Network tariff reform, to transition to cost-reflective tariff structures, to ensure that those with and without solar PV and other technologies (such as air conditioning) contribute equitably to costs of providing shared energy networks.

AGL supports the nationally consistent, market-led and contestable roll out of digital meters, which are a key enabling technology for increasing the range of innovative products and services available to customers.

Lastly, network businesses currently have the authority to approve or reject the installation of new technologies for consumers, and at times this process can lack transparency and create delays and barriers to uptake. Where network businesses engage in competitive activities (such as solar installation), a conflict of interest may arise, and there may be a role for an independent body to define and assess connection and installation requirements, to provide certainty for industry and consumers, and to streamline installation processes.



AGL noted above the need for a transition towards cost-reflective network tariffs. This move will ensure solar and non-solar customers are contributing towards shared network infrastructure in appropriate ways commensurate with their use of the infrastructure. This will have the advantage of providing the right pricing signals for demand response (e.g. investment in solar, storage, home energy management systems or energy efficiency) to occur in a way that reduces the long-term costs of electricity for all energy consumers.

Such an approach should ensure that current processes underway do not seek to compensate customers inappropriately for the value of energy provided, nor should they be provided for without consideration of support already received under other schemes (such as the SRES).

- How to encourage and best incentivise individuals to switch to cleaner forms of transport and which forms would deliver the greatest emissions reduction benefits.

The transition to a decarbonised or carbon constrained future may entail modification and change in the industries that generate growth and opportunity. Programs to assist and foster change within specific communities and the state of South Australia as a whole should be long-term commitments with commensurate time to generate change and as early a commencement as practicable.

South Australia has a long history associated with the Australian automotive industry, and although the auto-manufacturing industry and associated component suppliers are impacted, there remains a solid base of networks, knowledge and understanding related to the motoring industry. This could prove an advantage for the fostering and development of Electric Vehicles (EVs) and associated policies. Based on the emissions intensity of South Australia's grid mix², EVs can provide a significant reduction in transport emissions that will further decrease through continued decarbonisation of the electricity system. Policies that support the adoption of EVs can therefore play an important role in South Australia's Climate Change Strategy.

The government could consider not only direct areas to enhance the uptake but also the implementation of a range of non-financial incentives associated with road use, parking and alternative measures under the control or administration of the state government. We note many of these issues have been considered in research conducted on behalf of the esaa by Energeia³ and include both direct (targets, quotas etc) and indirect (access to priority lanes etc) policy approaches for consideration.

² Scope 2 + 3 emissions factors for purchased electricity = 0.67 kg CO₂e/kWh, ref. Greenhouse, N., 2015. National Greenhouse and Energy Reporting (Measurement) Determination 2008, 10(2)

³ <http://esaa.com.au/Library/PageContentFiles/69ae0935-d7e1-4dfe-9d3d-0309a1ff8e62/Energeia%20Report%20for%20esaa%20%20Optimal%20AFV%20Policy%20Targets%20and%20Settings%20for%20Australia.pdf>



Response to the CARBON NEUTRAL ADELAIDE strategy paper

- What ideas do you have for how investment and job opportunities can be created from the Carbon Neutral Adelaide (CNA) initiative?
- What initiatives would create the greatest economy wide benefits?
- What actions and investments do you consider are important to achieve Carbon Neutral Adelaide?
- What ideas do you have for involving business and the community in the initiative?

The South Australian Government has identified that within the CNA area the two highest emission impact areas are grid supplied electricity and transport.

AGL has highlighted in its response to the REDUCE strategy paper (above) those areas it considers should remain the focus of the South Australian government. These are primarily the long term strategy to address grid supplied electricity and the ability to promote the use of electric vehicles for transport.

In addition to these areas the South Australian Government will need to consider the methods it utilises to encourage the offset of emissions by those within the CNA boundary.

The two primary mechanisms for consumers of electricity to minimise and eventually offset their emissions will be Greenpower (to reduce emissions) and carbon offsets.

Greenpower ensures the emission reduction is domestically sourced and is contributing to long term reduction in emission levels. At current prices, it is likely to represent a premium over and above the cost of appropriate carbon offsets.

The CNA strategy would benefit from a focus on increasing the level of Greenpower utilised by government and private entities and households within the CNA boundary. The Greenpower program was recently reviewed and noted that a confirmation of Greenpower's additionality is a key requirement to enable further promotion and investment in Greenpower inclusive products and services.

AGL would encourage the South Australian government to advocate for a resolution to this recommendation.

Energy retailers are well placed to work with Government in the development of both Greenpower and carbon offset products. AGL would welcome the opportunity to look at options available to increase the penetration of these products into the South Australian energy market in general and in the CNA boundary area in particular.

Appendix One

The following documents form part of this submission:

Document	Title	Location
AGL Policy	AGL Greenhouse Policy	http://www.agl.com.au/~media/AGL/About%20AGL/Documents/Media%20Center/Corporate%20Governance%20Policies%20Charter/1704015_GHG_Policy_Final.pdf
Working Paper 48	Climate Policy – Where to From Here?	http://onlinelibrary.wiley.com/doi/10.1111/1759-3441.12114/abstract
Working Paper 43	Energy-only markets and renewable energy targets: complementary policy or policy collision?	http://www.sciencedirect.com/science/article/pii/S0313592615000156
Working Paper 35	An analysis of Australia’s Large Scale Renewable Energy Target: restoring market confidence	http://www.sciencedirect.com/science/article/pii/S0301421513007398
Working Paper 26	Carbon taxes, toxic debt and second-round effects of zero compensation: the power generation meltdown scenario	http://www.emeraldinsight.com/doi/abs/10.1108/17576381211228970
SKM Report on AGL’s Hallett Wind Farms	2010 Economic impact assessment of the four Hallett Wind Farms in South Australia	http://www.agl.com.au/~media/AGL/About%20AGL/Documents/How%20We%20Source%20Energy/Wind%20Environment/Hallett5%20Wind%20Farm/Assessments%20and%20Reports/2010/July/AGL%20Final%20Economic%20Impact%20Report.pdf