INVESTOR GROUP ON CLIMATE CHANGE

Submission to:

INDEPENDENT REVIEW INTO THE FUTURE SECURITY OF THE NATIONAL ELECTRICITY MARKET

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EXECUTIVE SUMMARY

Investors strongly support the development of A National Electricity Blueprint, setting out long term objectives and a pathway for transition in the energy sector.

A new National Electricity Blueprint must have as a core objective addressing investment considerations and facilitating efficient investment into Australia's energy sector.

A robust and stable policy framework will drive greater levels of investment into low carbon solutions and will help smooth the economic risks associated with structural decarbonisation of the Australian economy.

Unlocking investment is key to addressing concerns around security and reliability, affordability and reducing emissions.

Currently, policy and regulatory factors driving significant investment uncertainty are the key barrier for investment in the electricity sector, across all energy sources and technology types.

Key elements of a policy framework to support greater investment confidence can be summarised as follows:

1. A national blueprint for managing transition in the electricity sector which has broad based stakeholder endorsement and is likely to remain in operation for the medium term.
2. Explicit recognition of Australia's emission reduction targets in line with the stated ambition of the Paris Agreement to move to net zero emissions.
3. A price on carbon for the sector.
4. A technology neutral approach, where all aspects of technology performance and impact are properly taken into account in energy planning.
5. Recognition of the implications for energy infrastructure of the changing technology mix, and appropriate planning for managing the transition of the electricity sector by valuing storage or generation capacity availability.
6. Recognition of the changing physical impacts of climate change itself, and the need to incorporate adaptation requirements in long term planning for the electricity sector.

Overall, better collaboration between industry, investors, the community and government on energy sector management will increase Australia's competitiveness and resilience to the economic impacts of climate change.

1. Introduction and overview

The Investor Group on Climate Change (IGCC) represents Australian and New Zealand institutional investors with over $1 trillion of funds under management, along with members of the investment community focused on the impacts of climate and energy issues.

IGCC members are invested across the Australian economy and are part owners of most of Australia's large companies. As managers of retirement savings and pooled investments we are concerned with the evident and increasing impacts of climate change on the global and Australian economies and the flow through impacts for future investment returns.

There is no doubt that the Australian electricity sector needs a National Blueprint to help manage the transformation currently underway across the sector.

It is increasingly apparent that there is a global economic transition underway, aimed at reducing the emissions intensity of economic activity in order to stabilize global warming at less than two degrees Celsius below pre-industrial levels, and move towards a net zero emissions economy by the second half of the century[1].

As the largest source of national greenhouse gas emissions, the electricity sector is both significantly impacted by the transition risks associated with Australia's direct response to climate change, and by the broader global market forces driving technological and consumer changes arising from the international response to climate change. In Australia and globally, energy and climate change policy are now inherently interconnected and must be treated as such.

Investors have a unique perspective on many of the issues playing out in the energy debate. Investors are exposed to the financial risks associated with short term policy decisions, and look to the longer term market signals for guidance on capital allocation

All of which have cost implications for investment across the sector when the policy response is fragmented, incomplete or sending contradictory signals to the market.

Overall, better collaboration between industry, investors and financial policymakers on long term carbon risk management will increase Australia's carbon competitiveness and resilience to the economic impacts of climate change.

We therefore welcome the opportunity to contribute to the Independent Review into the Future Security of the National Electricity Market.

The energy sector is in a state of profound transformation

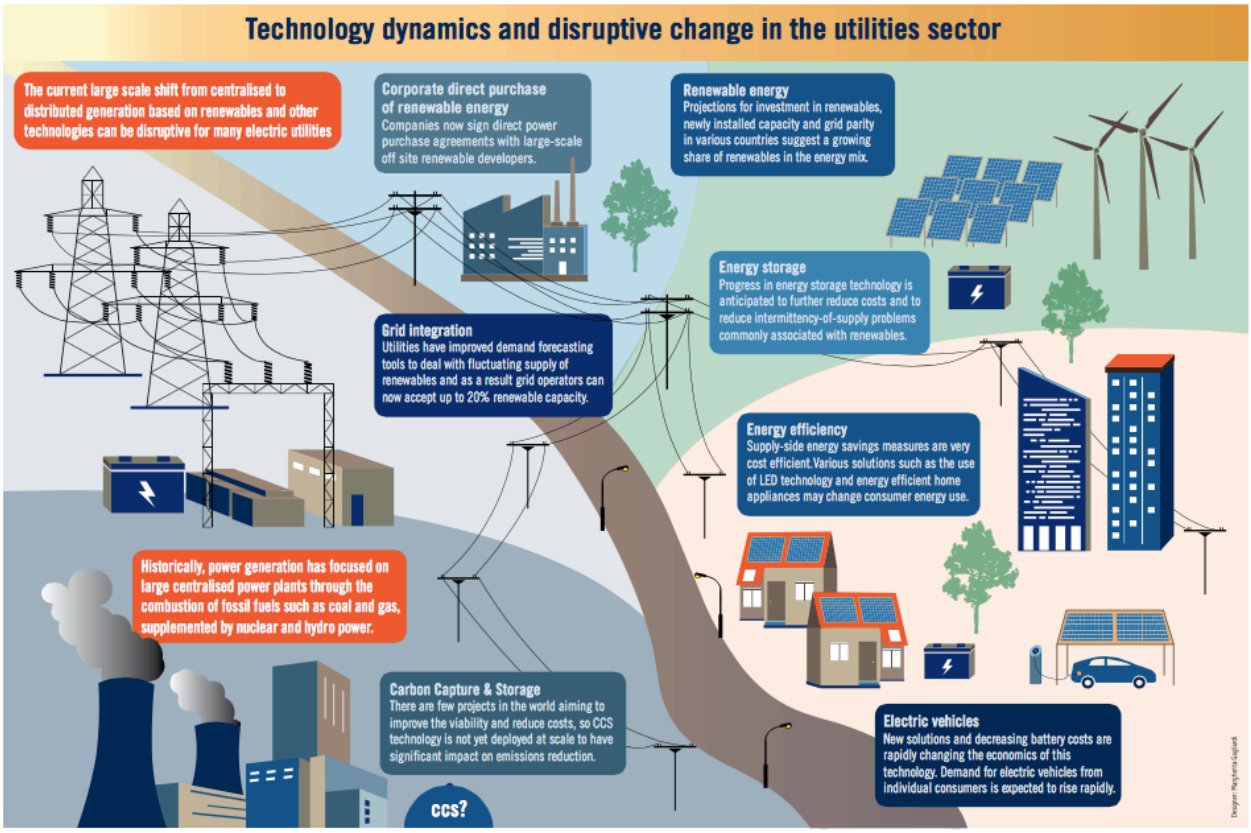
Investors are acutely aware of the profound disruption impacting the energy sector.

It is now widely acknowledged that the traditional business models of power generators and distributors are becoming increasingly challenged. Globally, investors and market analysts are observing a shift away from a centralised system of major plants feeding a national or regional grid into a more complex and distributed structure with more locally installed sources of renewable supply.

[1] The Paris Agreement states "well below 2°C and continue all efforts to limit the rise in temperatures to 1.5°C".

Climate change policy commitments and more competitive cost structures will likely drive the continued growth of distributed generation through renewables such as solar and wind, thereby, challenging existing baseload resources further and compounding pre-existing overcapacity in many developed power markets.

Coupled with low demand due to increasing energy efficiency and modest GDP growth, traditional centralised power generation is being pushed out of the merit order and may ultimately need to be shut down or receive capacity payments (for market backup). These developments are not unique to Australia and must be viewed through the lens of global industry transformation.



Source: Investor Expectations of Electric Utilities Companies: Looking down the line at carbon asset risk (2016)

2. The investor perspective

Australian institutional investors are seeing the policy response to carbon and energy issues in both developed and developing countries change the fundamentals of their investments globally, and are acutely aware that Australia will need to strengthen its response to climate change. The policy settings which Australia establishes today, will determine whether the process of decarbonisation required to meet the Paris goals will be smooth and efficient or abrupt and disruptive. There are also significant implications for investment flows and Australia's future economic competitiveness.

Investors are seeking an integrated policy framework where the key elements are grounded in broad-based bipartisan support and able to deliver a level of investment stability.

An incremental approach to climate policy development risks locking Australia into an inefficient policy framework. Long-term, transparent and predictable policy design can enable deep emissions

reductions, a steady economic transition and encourage investment to take advantage of new opportunities for the Australian economy.

This position is also reflected in the Climate Policy Principles of the Australian Climate Roundtable, a broad coalition of industry, business, environmental, union, community and investor groups, of which IGCC is a member[2].

Due to their carbon intensive nature, electric utilities are of particular concern since utilities now form a meaningful proportion of many indices – representing hundreds of billions of dollars in market capitalisation.

With stable policy settings, investors will make long-term, low carbon investment allocations. Delaying the resolution of a long-term policy framework is already leading to underinvestment in energy and emissions productive industry, limiting Australia's options for economic growth and income in future.

3. Investing in the electricity sector

Institutional investors are important for investment in the energy sector because their size, sophistication and long term investment horizons enable them to invest on terms and conditions that help reduce the financing costs of renewable energy.

Investment is affected by a number of factors, of which certainty in returns is potentially the most important one. This is particularly the case when investments are irreversible, due to large sunk costs.

Barriers to investment in the electricity sector

Policy and regulatory factors driving significant investment uncertainty are the key barrier for investment in the electricity sector, across all energy sources and technology types.

In identifying the policy and regulatory factors inhibiting investment in the electricity sector, it is important to distinguish between uncertainty and risk. *Risk* can be defined as the variance in expected returns over the life of an investment, where it is usually possible to insure against such risk in most cases. In contrast, the term *uncertainty* is reserved for a range of factors that can affect the profitability of the investment which may not be known or quantified to any degree or level of precision. Such factors can range from the possibility that new technology will be introduced by a competitor making existing ones redundant, to shifts in consumer taste, to changes in policy and regulation. Since these contingencies are difficult to predict, it is difficult to write contracts insuring the investor against them.

Uncertainty has particular implications when investors incur significant sunk costs that cannot be recovered. In these circumstances, investors will always attach a value to delaying investments until further information can be obtained. The option of delaying has real value, derived from the increased profitability that can arise from making a more informed decision. The greater the option value, the more worthwhile it is to delay an investment decision, even if the current NPV of a project is positive.

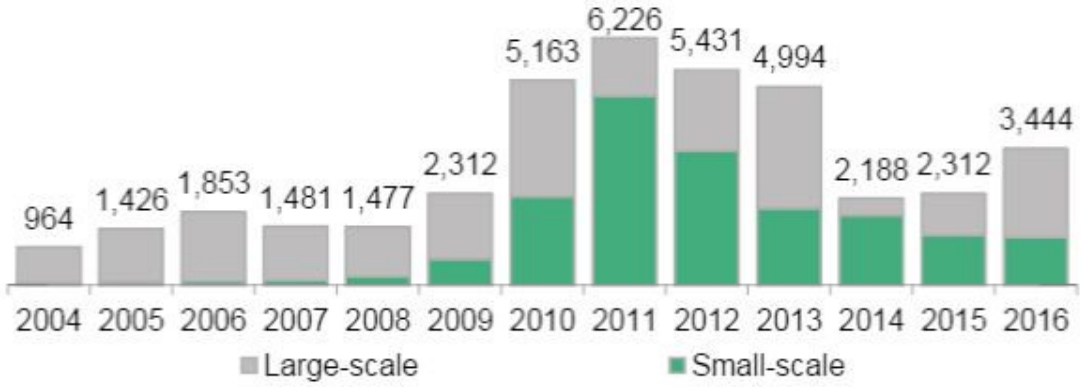
[2] www.australianclimateroundtable.org.au

The greater the uncertainty and the potential required for waiting, the greater the option value, hence the greater the incentive of delaying investment. The investor is likely to factor in the cost of the option value into its required rate of return. The greater the 'hurdle' rate of return, the greater the price society has to pay for potentially desirable investments[3]. In summary, uncertainty leads to delays in investment and an increase in the required rate of return.

While technology costs, falling demand and changing consumer behavior are all important factors contributing to changing dynamics in risk pricing for investors in the electricity sector, in recent years it is regulatory and policy driven uncertainty which is the greatest barrier for investment.

This can be seen, most starkly, in the dramatic drop in investment in renewable energy projects in the immediate aftermath of the unforeseen and unexpected changes to the Renewable Energy Target (RET) following the 2014 review and amendment to the target. Investment evaporated, in the wake of sudden regulatory shifts, and is only now returning to market levels more consistent with global investment trends as investors take comfort from Government statements that the RET will stay in place to end of its operating period.

Figure 1: Total new clean energy investment in Australia (USD m)



Source: Bloomberg New Energy Finance

Reducing the RET also affected the financial performance of assets already built and operating under the scheme, with impacts reflected in lower revenue, greater difficulty in servicing debt obligations, lower/no distributions to investors and negative movements in periodic asset valuations.

For long term investment with large sunk costs, stable, predictable policy frameworks which accurately account for market expectations on major influencing factors are critical to securing investment into the sector.

Institutional investors are recognizing that reducing the emissions exposures in their portfolios is increasingly a strategic investment priority. While local investors favor local opportunities to increase these allocations, if Australia's energy markets remain on a higher emissions profile, with a poor policy environment, the only alternative to reduce emissions will be to diversify away from this market. In recent years, IGCC members have already shifted capital to offshore infrastructure funds and private equity funds. Others are seeking renewable energy and technology exposures through

[3] Emissions Trading in Australia: Discussion paper on the effects of alternative permit allocation approaches, Frontier Economics for IGCC, ACSI & IFSA (2008).

fixed income instruments (green bonds) which provide stable investment settings and high confidence in a lower emissions footprint.

Policy change and uncertainty is also influencing foreign investors seeking low carbon investments, making them less likely to invest in Australia. Institutional investors in Europe and North America have indicated to investors, their Australian colleagues, that retrograde climate policies introduce sovereign investment risk in Australia. Confusion on the Australian approach to climate and energy policy is the typical response, presenting a clear indication that Australia's risk rating on climate change has increased in the minds of international institutional investors.

At the company level, and taking into account broader carbon risks and opportunities impacting the electricity sector, investors are looking for the utility companies they invest in to also have an integrated approach to managing the various transition risk factors impacting their operations and potential returns.

These can be summarized through a Global Investor Coalition guide published in 2016, *Investor Expectations of Electric Utilities Companies: Looking down the line at carbon asset risk*[4].

This guide forms the basis for global investor-led corporate engagement with companies in the utility sector around six major areas of performance. For companies, as well as policy-makers, a strategic response to integrating carbon and energy is a core market expectation.

Key elements of an emissions reduction policy to support investor confidence and a transition to a low emissions system

Investors support an integrated approach to carbon and energy policy which seeks to balance the key factors impacting security and reliability, affordability and emissions reductions equally.

Australia needs an integrated carbon and energy policy framework which accommodates both a requirement to increase levels of clean energy investment and sustainably manage broader transformational issues across the system. Market price impacts resulting from falling demand through energy efficiency and increased household solar penetration must be managed concurrently with implications for transmission and infrastructure, for example, while increased renewables generation will need to be managed alongside the removal of ageing carbon intensive assets.

[4] Investor Expectations of Electric Utilities Companies - Looking down the line at carbon asset risk, (April 2016)

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Strong endorsement and buy-in across a broad range of energy industry, policy and community stakeholders will be critical for ensuring that the Blueprint addresses investor concerns about policy uncertainty. Without significant cross-party political support, as well as the right balance between industry and community endorsement, investors will continue to avoid investment decisions and price in uncertainties over the immediate term.

IGCC notes that an incremental approach to market reform with frequent regulatory interventions is unlikely to deliver certainty. A clear sense of agreed direction, a flexible approach for delivery subject to dynamic variables coupled with a signposted reform pathway is the preferred approach.

This also means that the blueprint must realistically address concerns over reliability and security of supply and emission reduction imperatives, without preferencing one technology solution at the expense of others in a manner which does not ring true with broader global investment trends or economic fundamentals.

The Blueprint should appropriately recognise implications for energy infrastructure of the changing technology mix, and required planning for managing the transition of the electricity sector. Given the intermittency of renewables, an incentive approach for valuing energy storage or generation capacity availability should be explored.

There may also be a role for greater planning of transmission infrastructure to facilitate the connection of renewables in areas currently not well served by existing transmission networks. The challenge remains, how to provide appropriate incentives to address high upfront capital costs, when the asset may only be increasingly utilised over time as more renewables are developed.

Policy frameworks which support the kind of structural transformation implied by the need to address climate change have historically worked best in Australia when they are founded in the principles of economic efficiency and are market based.

Market based responses allow business and the market to respond flexibly and effectively. They support greater innovation and competitiveness. They promote the efficient allocation of capital and investment and generate longer term prosperity. Policy responses which are short term, fixed and finite, or which have involved direct intervention in the market by Government, have usually proven to be less effective in supporting longer term structural change.

While politically unpopular, it remains the case that investors and the wider financial community (along with many sections of the business community) would prefer to see a carbon price introduced as a key policy response to managing investor uncertainty in the economy.

As investors, IGCC remains supportive of the need for a market based carbon pricing solution. This has been our historical position, and remains our preferred policy response. The IGCC supports robust, investment-grade policies to reduce emissions. IGCC members have long supported putting a price on emissions as the most effective and efficient way to provide a long-term, transparent and certain regulatory framework to address carbon risks in investment portfolios. Impacts on pricing for households (and wholesale price markets) can be explicitly addressed via scheme selection and market design.

It is also important to acknowledge that many of the supply / demand variables which form the basis of investment decision making in the electricity sector will increasingly be influenced by changing physical risk factors, arising as a result of climate change itself. The record-breaking heat wave conditions experienced over the 2016-17 summer, along with the projected increasing frequency of extreme weather conditions mean that Australia's National Electricity Blueprint must also take account the climate conditions influencing supply, transition and demand in the longer term. The blueprint, must have capacity to adapt to the effects of a 2°C temperature increase as well as respond to the drive to decarbonize to limit global warming to 2°C.

4. The role of the electricity sector in meeting Australia's greenhouse gas reduction targets

The energy sector is a significant and disproportionate contributor to Australia's greenhouse gas emissions, relative to all sectors across the economy.

Electricity generation alone produces around 35% of Australia's greenhouse gas emissions. This high proportion of electricity emissions reflects Australia's comparatively high reliance on black and brown coal reserves for electricity generation. Since the removal of the Carbon Price Mechanism, electricity sector emissions have reversed the downward trends of recent years and are now increasing again in an upward trajectory.

Traditionally the debate around reducing emissions in the electricity sector has been characterized in a very binary debate of coal versus renewables. However, it is important to acknowledge that there are a range of activities will which need to occur across the sector to achieve substantive and sustained emission reductions over time. These range from generation to transmission and storage solutions, as well as demand management and changed behavioral patterns associated with pricing, to ensure return on investment.

The patchwork of policies aimed at achieving emission reductions in the electricity sector have been designed and implemented without reference to how they operate alongside or in an integrated manner with other policies, at either the state or the federal level. This has resulted in perverse outcomes, system instability concerns, inefficient pricing and heightened investment uncertainty, without delivering emission reductions.

Timeframes are also a key factor to both sectoral planning and decision-making over viable return periods for energy assets. While technology solutions (such as battery storage or pumped hydro) will likely be significant in addressing intermittency concerns, in the interim, gas will continue to have a role to play in ensuring stability of supply at times of high demand. This does not necessarily constitute a big increase in new generation capacity, but rather a rethink about valuing availability to

meet demand at the right time. Getting the right solution and role for gas along the transition pathway will be an important factor to address in the Blueprint.

IGCC notes that it will be important to avoid replacing one set of incumbents with another, as the sector transitions away from highly carbon intensive energy generation sources. Less carbon intensive assets such as gas fired generation may still have a role to play in delivering an efficient transition across the sector, but ultimately remain more carbon intensive than is considered to be compatible with a net zero emissions economy in the long run.

Finally, the need to address economic competitiveness implications should be incorporated into policy design, not seen as the basis for implementing a shallow or unambitious policy response. Failure to adequately position Australian business for the global low carbon economy of the future by being over-protectionist is just as likely to result in diminished economic competitiveness for Australian business as an excessively onerous policy response. This is a question of policy balance and transitional pathways which incorporate a full and frank acknowledgement of the direction and pace of decarbonisation in the future, rather than being based on the economic trajectory of the past.

5. Governance and oversight

IGCC would support further review of the interconnected governance and oversight processes around operation of the electricity sector, alongside implementation of the proposed Blueprint.

Investors believe that the current framework of overlapping state and federal policy, market operator and regulatory bodies could potentially be simplified and streamlined in line with agreed objectives of the Blueprint, once endorsed by all stakeholders.

IGCC would also support the establishment of a mechanism to support implementation and coordination of reform, as set out by the Blueprint, to ensure a smooth delivery and respond to market variables as they arise.

6. In conclusion

Investors strongly support the development of A National Electricity Blueprint, setting out long term objectives and a pathway for transition in the energy sector.

A new National Electricity Blueprint must have as a core objective addressing investment considerations and facilitating efficient investment into Australia's energy sector.

A robust and stable policy framework will drive greater levels of investment into low carbon solutions and will help smooth the economic risks associated with structural decarbonisation of the Australian economy.

Currently, policy and regulatory factors driving significant investment uncertainty are the key barrier for investment in the electricity sector, across all energy sources and technology types. These can be overcome through good policy and long term planning around how best to manage the transition of the sector.

Overall, better collaboration between industry, investors, the community and government on energy sector management will increase Australia's competitiveness and resilience to the economic impacts of climate change.