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Independent Review into
the Future Security of the National Electricity Market

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SUBMISSION ON THE PRELIMINARY REPORT OF THE INDEPENDENT REVIEW INTO THE FUTURE SECURITY OF THE NATIONAL ELECTRICITY MARKET

Thank you for the opportunity to make a submission on the Preliminary Report of The Independent Review into the Future Security of the National Electricity Market.

The Review comes at a critical time for the Australian aluminium industry. Aluminium is an electricity-intensive industry facing difficult global market conditions. The Australian aluminium industry directly employs or engages more than 15,000 people, in well paid, stable and skilled jobs; and indirectly sustains the livelihoods of many more, predominantly as the largest employer in certain regional areas – such as Portland, Launceston, the Hunter Valley, Gladstone, Western Cape York Peninsula and south-west Western Australia.

For Australia's four aluminium smelters, in only the last few months:

- one has suffered a significant interruption in power supply that led to the 'freezing' of pots and loss of the majority of production capacity, that will only be recovered through the reinvestment of substantial public and private capital and many months work;
- one has been forced to shed electricity load at a time of peak demand in order to protect the security of supply to other electricity customers; but putting at risk the stability and ongoing operation of the smelter; and
- one has been forced to reduce production in response to higher power prices (spot and forward contracts) unrelated to changes in the actual costs of generation and supply of electricity.

Our industry is feeling the full force of the 'trilemma' that the review has been asked to address – the difficulty of accessing reliable and globally competitive electricity supply while transitioning to lower greenhouse gas emissions. As the most electricity-intensive sector of the economy we are a leading indicator of issues that will soon be facing other parts of the manufacturing industry.

The attached document details the current situation facing the Australian aluminium industry and our recommendations for the Review. These are also summarised below:

CURRENT SITUATION

Over six decades, Australia has developed into a major exporter in the global aluminium industry based on our competitive advantages – including bauxite supply, political stability, workforce skills and (until recently) reliable and cost-competitive energy supply.

The aluminium industry delivers important economic benefits including high value employment in regional areas, export income, investment, and value adding to natural resources.

Aluminium's light weight, durability and ability to be endlessly recycled, ensures there will continue to be a strong increase in global demand for aluminium in a carbon-constrained world.

Aluminium production anywhere in the world requires continuous, reliable, competitively priced electricity. Aluminium smelters are one of the few time sensitive loads that are unable to provide on-site backup generation and require baseload electricity supply. The major power sources globally for aluminium smelters are coal, hydro and gas. There are no aluminium smelters in any country that are powered primarily by wind or solar.

If required, aluminium smelters are able to reduce electricity demand quickly and in large amounts. However a loss of supply for extended periods up to a few hours causes instability from which it may take weeks to recover or lead to a more permanent loss of capacity. A loss of supply for more than a few hours is often catastrophic and could trigger costly remediation or closure.

In recent years, Australia has fallen significantly behind our global competitors on the comparative cost of electricity supply for industrial loads. The reliability of Australian electricity supply is also declining. Together these issues are threatening the long term viability of Australian aluminium smelters.

In the short-term, there are few options in Australia other than coal-fired generation for continuous, reliable, competitively priced electricity. Hydro power is the dominant source of supply in Tasmania, the home for one of the four Australian smelters, but additional hydro power capacity is not currently available. Energy policy at both national and state levels is not adequately addressing the need to develop industrial-scale, low- or zero-emissions electricity sources in the medium- and long-term.

Market design, policy instability and uncertainty are also increasing price and undermining reliability in the short-term.

Significant economic benefits that accrue to Australia from electricity dependent industry are at risk if these problems remain unaddressed.

Also at risk is the provision of many important services to the electricity grid – economies of scale, securing baseload generation, reduced volatility of demand, load shedding capability and start-up capacity - the loss of which may worsen the 'trilemma' faced by all electricity users.

RECOMMENDATIONS

- Long-term policy should prioritise the development of industrial-scale, low- or zero-emissions energy sources that will regain Australia's competitive advantage in a carbon-constrained world without compromising energy security.
- Policy and market design should seek to bring electricity prices down from their current uncompetitive level – not merely minimise future price rises.
- Short-term policy must address important impediments including some which have previously been avoided or ignored as they have been seen as too difficult:
    - Ameliorate the impact of generator market power (particularly in Queensland and NSW);
    - Modify the electricity rules and increase the ability for the regulator/market operator to control the exercise of market power by dominant suppliers;
    - Remove constraints on the operation of interconnectors and make changes (where it is cost effective to do so) such that a more competitive market environment is created in the NEM;
    - Where network assets are under-utilised or stranded due to falling demand they should be written down in the regulated asset base.
    - Prevent warehousing or stockpiling of gas reserves; and
    - Remove gas exploration and development moratoria – particularly for onshore gas reserves and shale gas.
- Retirement of coal-fired generation needs to be carefully controlled to ensure stability in the system, given that the same stability cannot be supplied by gas-fired generation (insufficient supply) or renewables (intermittency).
- All generators, including renewables, should be required to ensure a full range of system services (e.g., minimum generation capacity, frequency control, inertia). For example, a quantity of despatched generation would require the provision of an equivalent proportion of the minimum level of other services. This would provide generators with an incentive to develop these services or procure them from others.
- Any policy interventions to reduce greenhouse gas emissions in the electricity sector (including changes to the Renewable Energy Target, or regulation) must consider flow-on impacts to trade-exposed electricity-intensive industry and include measures to offset any potential loss of competitiveness (and carbon leakage);

- Stable, long term and predictable policy is critical to attract the investment to address the current issues and undertake the transition.

Our industry encourages your review team to make recommendations that will deliver a competitive energy advantage for Australia in a carbon-constrained world, and to outline a pathway to manage the transition. I am happy to provide further information on any of the issues raised in this letter. Please contact me using the details below.

Yours sincerely

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ALUMINIUM AND AUSTRALIA'S ELECTRICITY MARKETS

Australia is a major exporter in the global aluminium industry

Australia's aluminium industry – 5 bauxite mines, 6 alumina refineries and 4 aluminium smelters – is a critical part of Australia's economy.

Through decades of investment, our industry adds value to Australia's natural resource endowments. From bauxite worth tens of dollars per tonne, to alumina worth hundreds of dollars per tonne, to aluminium metal worth thousands of dollars per tonne - we are a major player in the global aluminium industry. The combined value of alumina and aluminium makes our industry one of Australia's greatest successes in processed exports.

Exports of alumina and aluminium are worth an estimated $7 billion per year and Australia remains the second largest producer of alumina and in the top five for aluminium (as well as the largest bauxite producer).

Australia attracted aluminium investments through globally competitive electricity prices…

Investment in Australian alumina refining and aluminium smelting facilities has been based on our competitive advantages – including bauxite supply, political stability, workforce skills and (up until recently) competitive power supply

As with a large proportion of Australia's manufacturing industry, the competitive advantage previously provided by Australia's energy resources was critical in decisions to locate aluminium smelters and continue operating in Australia.

Historically, Australia's electricity markets have operated with large baseload coal-fired generation at the core of the supply side; and large industrial users of electricity, such as aluminium smelters and alumina refineries, providing large scale and stable demand with a profile that mirrors that of the baseload supply.

There will continue to be strong and growing global demand for aluminium…

Aluminium has an increasingly important role in a carbon-constrained world. While the initial production of aluminium is energy intensive, its light weight, durability and the low energy requirements and ease with which it can be recycled, deliver in-use and on-going life-cycle benefits. The use of aluminium in fuel-efficient transport, energy efficient buildings, technology components and light-weight packaging that minimises wastage in food production chains, delivers reduced life-cycle greenhouse gas emissions and will continue to drive increases in demand for aluminium greater than GDP growth.

Australian facilities are integrated into global production chains that are using innovation – for example, the increased use of aluminium in light-weighting vehicles such as the Ford

F150 – to drive consistent global annual increases in demand for aluminium of more than 6%. Australia retains key competitive advantages in this industry that position us well to take advantage of that growth opportunity.

Aluminium production anywhere in the world requires continuous, reliable, competitively priced electricity

To be internationally competitive, large users of electricity, such as aluminium smelters, require the following characteristics in electricity supply:

- *Affordability* – as a major proportion of the cost structure, aluminium smelters are critically exposed to the cost of electricity. Investment in both new and existing facilities is attracted to those areas offering viable and globally competitive electricity supply.
- *Large Scale, Continuous Operation* – baseload electricity generators are natural counterparties for aluminium smelters as they are able to contract at similar scales and their relatively flat supply profile matches the demand profile of aluminium smelters and alumina refineries which operate continuously. In the absence of baseload generators, finding counterparties willing to contract for the large loads and long terms required to underpin ongoing operation of these facilities will be problematic.
- *Reliability* –aluminium smelting is particularly vulnerable to disruptions in electricity supply. A loss of power for more than a few hours can lead to unrecoverable damage and associated large economic losses jeopardising viability of the facility.

It is noteworthy that even globally, relatively few electricity sources are able to meet these requirements. Despite substantial investments in many jurisdictions in technologies such as solar and wind, aluminium production globally is fuelled predominantly by coal (60%), hydro (30%), natural gas (9%) or nuclear (2%) with a negligible contribution from other sources. Solar, wind or renewable technologies other than hydro, are not utilised as the primary source of smelter supply due to several issues, principally around reliability and continuity.

There will be a longer-term trend to low- and zero- emission electricity sources for aluminium production. However, given the substantial electricity requirements of aluminium smelting, further technological change is needed before low- and zero-emissions sources other than hydro and nuclear become practical.

Furthermore, as is the case for electricity generation generally, the trend will be uneven and fossil fuels will be an important source of electricity for a considerable time. Currently more than two-thirds of global aluminium production uses fossil-fuel based electricity, the majority of which is based in China. The International Energy Agency estimates that coal will still be responsible for 28% of global electricity generation in 2040 and this proportion is expected to remain far higher for electricity used in aluminium smelting.

Aluminium smelters are able to reduce electricity demand quickly and by large amounts but…

The high electricity demand of aluminium smelters and the expertise and technology in electricity management within the facilities make them well placed to offer near-immediate and significant load shedding capability to assist grid management.

While this service has been readily provided in Australia when needed, it also comes at a cost and risk to the smelter. Any interruption in power supply reduces the stability of the smelting process, with the extent of the effect depending on duration. It may take weeks to fully stabilise the operation after the interruption and each interruption creates a risk that the instability will trigger an extended loss of productive capacity.

If power supply is lost for more than a few hours then it moves from a problem of instability to the likelihood of catastrophic loss of capacity as a result of 'freezing' of molten aluminium in the pots. This is what occurred at the Portland smelter in December 2016. Such an event requires either expensive and significant remediation or closure of the facility.

Australia has fallen significantly behind our global competitors on comparative cost of electricity supply.

Figure 6.1 of the Preliminary Report compares household electricity prices in OECD countries and concludes that Australian prices are "still below most other countries". In response to the implied comfort from that conclusion we suggest the Review consider that:

- The relevant comparison for industry is delivered prices to industrial users – where Australia is likely to fare much worse;
- Given our history as one of the lowest cost countries for electricity in the OECD we should be alarmed at the rate that we are moving up the table and the consistent upward trajectory;
- Observed investment behaviour shows that being below most other countries is not sufficient to be competitive in an electricity-intensive industry - a significant part of Australian manufacturing. It is notable that the only three other OECD countries with a significant aluminium industry are the three cheapest on a purchasing power parity basis for residential customers also (Norway, Canada and United States) and that countries near to Australia and above have lost most of the aluminium smelting capacity they once had.

For example, in previous meetings with members of the Review team, material was presented which showed that the Portland smelter is a good performer on efficiency of electricity use within the global portfolio of smelters managed by Alcoa, but once the costs of electricity are incorporated, the Portland smelter becomes the most expensive in the Alcoa portfolio and at the upper end of the international cost curve (for all producers). That

is, a technically efficient and well run facility becomes a high-cost operation as a result of globally uncompetitive electricity prices in Australia.

The reliability of Australian electricity supply is also declining, threatening the viability of aluminium smelters

Increasing concerns are being voiced from many quarters over the reliability of Australia's electricity supply, but in at least two cases in the last few months there have been material consequences to aluminium smelters as result of reduced reliability.

In the most significant incident, power supply to the Portland smelter was lost for a period of approximately five hours in early December 2016. As a result, a majority of the pots froze, and production can only be recovered through expensive remediation. Were it not for Government support and significant investment by the company – totalling hundreds of millions of dollars - the facility would have been forced to close with obvious consequences for employees and the community of Portland.

In the second incident, the Tomago smelter was required to shed load over a period of a few hours in early February 2017 due to concerns over ability to supply other customers. The load shedding was spread across each of three potlines to reduce the likelihood of pots freezing, and reduce the probability that capacity would be permanently impacted. Further load shedding was requested the next day, though ultimately not required. Each load shedding event disrupts production, destabilises the smelting process, and creates a risk of more permanent loss of capacity.

It should be noted that both the frequency and duration of load curtailments has increased in recent years – and the duration in particular has exceeded the maximum required by the market operator (AEMO) to ensure system security. This raises the prospect that security supply issues and commercial forces are being conflated.

There are few options in Australia other than coal-fired generation for continuous, reliable, competitively priced electricity

As noted, globally aluminium smelting is powered by coal, hydro, gas and nuclear; with current technology, other electricity sources are not sufficiently reliable or continuous. In an Australian context, one smelter is based in a state that relies predominantly on hydro power – Bell Bay in Tasmania. For the other three, in states currently predominantly supplied by coal-fired generators, there are no short-term alternatives that are sufficiently continuous and reliable. Nuclear power is not available, gas supply is not available or too expensive to generate electricity at a suitable cost, and new hydro power is not available.

Developing alternatives to coal-fired electricity as baseload supply in the medium or longer term will require: continued technological improvements along with capital cost reductions; increases in availability of gas and reductions in price (if gas is to be the main source or as a

backup to renewables); changes in policy and approach to nuclear energy; or changed management of existing hydro generation resources.

Energy policy is not addressing the need to develop industrial-scale, low- or zero-emissions electricity sources

While recent Australian energy policy has been successful in developing intermittent renewable sources of electricity, which have proven suitable for household and commercial use, there has been very little progress in developing industrial-scale low- or zero-emissions generation capacity. Indeed this has not even been an objective of energy policy despite the large proportion of electricity use represented by industrial users and the acknowledgement that reducing emissions in the electricity sector is a critical policy goal.

Market design, policy instability and uncertainty are increasing price and undermining reliability in the short-term

Market power

Some elements of electricity market regulation have failed to keep pace with the changing structure of market participants. Government owned, and previously Government owned, electricity suppliers (particularly generators) hold significant market share and market power. In some cases this has increased materially as consolidation has occurred over time.

When generation is privatised, or managed with a greater focus on returning dividends to the Government, or increasing value for a future sale, there is a stronger focus on maximising revenue and profit and a greater willingness to use the available market power for those outcomes.

There have been a number of recent examples where the bidding strategies (including rebidding) by generators with substantial market power have led to a significant increase in spot prices and volatility and therefore forward prices. This has been a significant part of the recent increases in electricity prices which are straining the viability of large users of electricity across the NEM.

As operation under current rules is leaving this behaviour unchecked, the rules should be updated and the regulator given greater power to ensure that market dominance does not lead to commercial outcomes inconsistent with the fundamentals of supply-demand balance and grossly in favour of generators at the expense of customers.

Network pricing

The current market rules determine network prices that guarantee returns to owners of network assets into the future. This allows networks to push all the risks of over-investment on to customers – whether the over investment is the result of over-estimates, mistakes, or changing circumstances. This is at odds with almost any other business or industry sector.

The price-setting rules should be changed to expose network businesses to the risk of overspending, in the same way that any other business is exposed to the downside of over investment, whatever the cause.

There is a link between this issue and the commercial returns allowed for network businesses in the regulatory framework. Network businesses must be exposed to the normal range of business risks – such as having to take an impairment on the value of assets that have reduced in real value – consistent with the rates of return to which they are entitled.

Gas

The Preliminary Report has rightly identified gas as a crucial fuel for transitioning to lower emissions in an affordable way. It has also rightly identified that, despite Australia being rich in gas resources, there is a lack of availability in domestic markets and what is available is expensive and provided on challenging commercial conditions.

The issue has been much studied and reviewed in recent years with the inescapable conclusion that domestic gas supply needs to be increased. An essential part in achieving that is lifting the existing moratoria on gas exploration and development, and replacing them with a regime of rigorous, evidence-based, environmental and scientific regulation. Of particular concern are moratoria on conventional gas and shale gas resources, where there appears little justification for the current bans.

Community support for projects would also be enhanced with improvements that ensured fair returns to landowners impacted.

Absent these changes, the State Governments that currently impose the moratoria will inevitably confront the consequences of the ban, not just on domestic industrial gas users who already suffering demand destruction, but also on electricity users (household, commercial and industrial) who are now suffering increased prices and reduced reliability. If they do not pursue the obvious solution (lifting the bans) then they must take full responsibility for achieving the same outcome through as yet unidentified alternatives.

Domestic gas supply will take some time to increase even after the lifting of moratoria – though it may immediately help free up some gas otherwise being held in reserve. To support the lifting of moratoria and provide gas in the shorter term there should also be greater scrutiny on the warehousing and stockpiling of gas reserves. Where gas is available, capable of being supplied to the domestic market, and not being used to meet export contracts, there should be a requirement to make it available to the domestic market (provided it will deliver a reasonable commercial return) – something more akin to a use-it-or-lose-it approach, but with a strong element of commercial viability.

Policy uncertainty

Instability and uncertainty of energy policy has led to a chilling of investment in electricity

supply and reliability. An investment will only proceed if it is viable under a range of credible future scenarios. As a result of the contested and changing nature of energy policy, the range of credible scenarios is so broad that virtually no investment can survive in all the possible futures that need to be considered. The only exception has been investment brought on through the Renewable Energy Target and Solar Feed-in Tariffs. While this has increased generation capacity, it has also reduced the viability of other existing generation capacity and led to an effective increase in total cost of electricity supply.

The combination of investment in renewable generation, and lack of investment in other parts of the system is contributing to the 'trilemma'.

A combined impact of the gas shortage and investment drought is that the market does not trigger expected investment responses. Ordinarily, higher prices (such as we have seen) would trigger investment in further supply (made viable by the higher prices). However that investment is not occurring (issues with confidence in policy and/or no gas available) and the market then appears to be resolving the situation by destruction of demand (from higher prices) or by unmet demand (forced load shedding, blackouts, etc.).

Combined Effect

The overall effect of all of these factors is that power prices (spot and forward contracts) have more than doubled in multiple States in the NEM in recent years, unrelated to changes in the actual costs of generation and supply of electricity. These price increases have recently triggered a reduction in production at the Boyne aluminium smelter. This leads to a perverse outcome more broadly as both generation capacity and aluminium smelting capacity sit idle when both could be operating and providing returns.

Retirement of coal-fired generation needs to be carefully controlled to ensure stability in the system

In addition to meeting a large proportion of electricity demand, coal-fired generation also supplies many important ancillary services to the grid – including consistent availability (opposite of intermittency), inertia, and frequency control services.

While these have been largely taken for granted in the past as they have been in plentiful supply, they are becoming more important as the proportion of generation that does not naturally supply them, increases.

Gas-fired generation is an obvious alternative but, as has been identified, is constrained or prevented by a lack of viable gas supply. Wind and solar are less able to supply these services, at least in their current modes of operation and technology.

Due to a lack of alternatives to supply these services, it will be important in the short term to carefully control the retirement of coal-fired generation to ensure that overall stability and durability of the grid is maintained.

Additionally, in the medium-term all generators, including renewables, should be required to ensure a full range of system services (e.g., minimum generation capacity, frequency control, and inertia). For example, a quantity of despatched generation would require the provision of an equivalent proportion of the minimum level of other services. This would provide generators with an incentive to develop these services or procure them from others.

Significant economic benefits are at risk if these problems remain unaddressed

A failure to address the rising cost, and reducing reliability, of electricity supply would have a range of negative impacts. Within the aluminium industry it could threaten the viability of existing aluminium smelters and alumina refineries – as it already has.

The flow on impacts of the loss of any of the facilities – or reduced production - would be significant including:

- Reductions in direct employment and engagement of more than 15,000 people, in well paid, stable and skilled jobs;
- Flow-on impacts in regional communities where the industry is a major, and often the largest, employer – such as Portland, Launceston, the Hunter Valley, Gladstone, Western Cape York Peninsula and south-west Western Australia;
- Reduced value-adding to Australia's natural resource endowments – alumina is worth approximately five times the value of bauxite, and aluminium approximately seven times the value of alumina; and
- Lower exports of alumina and aluminium, currently worth an estimated $7 billion per year.

Also at risk is the provision of many important services to the electricity grid

Critically, large electricity users also contribute to the operation and stability of the electricity grid, including:

- *Economies of scale* – the electricity demand of large industrial customers enables the construction of large, efficient generating plant. Large industrial users are particularly important for maintaining higher levels of minimum load and therefore utilisation of generation capacity.
- *Securing baseload generation* - large industrial customers frequently enter longer-term contractual arrangements with generators. These contracts underwrite the financial security of base-load power stations which remain on-line even at times of high intermittent renewable generation and are then able to increase generation if intermittent renewable supply reduces.
- *Reduced volatility of demand* – the significant, consistent electricity use of large users such as aluminium smelters provides a base that reduces the overall volatility of demand caused by other users, particularly households. The reduced volatility of

demand enables more efficient, consistent electricity supply at lower cost to all users.

- *Load shedding capability* – despite requiring consistent and reliable electricity supply, in certain circumstances aluminium smelters as large electricity users are able to shed demand in the short term and at short notice (in significant quantities) to enable stability of the grid and to respond to disruptions on the supply side. This can underpin stable and reliable electricity supply to other electricity users.
- *System start-up* – at times of system start-up (such as following a black system event), large electricity users provide the ramped stable load that is needed to bring the electricity grid up to a level that it can safely supply to other users with a more volatile and mixed electricity demand.

For example, in Tasmania, the Bell Bay aluminium smelter is approximately one-third of total electricity demand. The smelter plus three other large industrial facilities are 65% of electricity demand. At times of low demand, these proportions rise higher (to 40% and 75% respectively). Without these major users the fixed costs of electricity supply will be spread over a far smaller electricity use and the daily volatility in demand will be far greater. The industrial facilities also provide the major load-shedding and system start-up services on the demand side.

Australia must regain an energy competitive advantage and manage the transition…

If Australia is to retain, and even grow, the large component of the manufacturing sector that is energy-intensive - as well as minimise negative impacts on reliability and affordability of electricity to all users - the suite of energy and climate change policies must include the development of industrial-scale, low- or zero- emissions energy sources that will regain Australia's competitive advantage in a carbon-constrained world. That is, delivery against all three objectives – low-emissions, affordability and reliability – for industrial users. The high level of innovation and change and the rapid reduction in costs for low emissions energy technologies is cause for optimism that technological change, in conjunction with Australia's energy resources, can deliver this vision.

The blueprint for energy policy settings needs to identify: what competitive advantages Australia can leverage in a future situation where all countries are facing similar carbon constraints; the electricity market structure that will drive the investment to deliver competitive advantage; and how best to manage the opportunities created by rapid technological change. Importantly, an energy policy blueprint must also consider the measures needed to manage the transition particularly while Australia's competitors in energy-intensive industries face more limited, or in some cases no, carbon constraints.

Policy and market design should seek to bring electricity prices down

There appears to be an implicit acceptance in the NEM Security Review report that electricity prices will continue to rise – despite the significant price rises that have been seen in recent years. We see no reason why this should be taken as a starting point, and note that if prices did continue to rise relative to other countries, it will have a significant impact of the competitiveness, viability, and operation of trade-exposed, electricity-using industry such as ours.

In reference to Figure 6.1 of the Preliminary Report, showing OECD household electricity prices, there is no apparent reason why Australian electricity prices should be rising faster than the other jurisdictions (we have moved from a leading position to mid-pack at best) which are all facing the same range of challenges, and many of which have less natural advantage to address the challenge.

While electricity supply is not directly trade-exposed, it is a major cost input to many industries which are heavily trade-exposed. Policy should seek to bring Australia's comparative electricity costs back to a leading position, which will require a reduction on current uncompetitive levels.

Short-term policy must address important impediments

In the short-term, policy must address the most important impediments. Many recommendations have been identified in previous studies and reviews but too many have not progressed due to a lack of commitment to sound stable policy. The list should include:

- Ameliorate the impact of generator market power (particularly in Queensland and NSW);
- Modify the electricity rules and increase the ability for the regulator/market operator to control the exercise of market power by dominant suppliers;
- Remove constraints on the operation of interconnectors and make changes (where it is cost effective to do so) such that a more competitive market environment is created in the NEM;
- Where network assets are under-utilised or stranded due to falling demand they should be written down in the regulated asset base.
- Prevent warehousing or stockpiling of gas reserves; and
- Remove gas exploration and development moratoria – particularly for onshore gas reserves and shale gas.

Any policy interventions in the electricity sector must consider flow-on impacts to trade-exposed electricity-intensive industry

Electricity generation is not exposed to competition from imports (or in export markets). Electricity generators are likely to be able to pass through to consumers at least some of the

cost of greenhouse gas emissions reduction policy, to the extent allowable by competition within the domestic market.

However most industrial electricity users compete internationally (against imports or in export markets), and energy may represent a large proportion of their cost structure. These industries will be unable to pass on their increased electricity costs and may therefore have a higher commercial exposure to the policy impacts than the generators themselves.

It is critical that electricity users be considered in the development of arrangements for the electricity sector and if trade-exposed industry is likely to experience increased electricity costs then a measure incorporated to mitigate the competitiveness impact of the electricity price increase. This would apply even if the cost imposed is implicit such as under a regulatory approach that, for example, forced closure of generation capacity.

Stable and predictable policy is critical to attract investment

Many, if not all, stakeholders have identified the need for stable policy. As noted earlier, investments will only occur if they are viable under the range of likely future scenarios. In the current policy debate, the range of policy scenarios is so diverse that very little investment in the electricity sector proceeds.

Politicians have indicated that energy supply is sufficiently important that policy should be 'contested'. However, it should be noted that many policy areas are strongly contested over long periods without the regular dismantling and replacement of policy architecture that has characterised energy and climate policy in recent years.

Stability in policy architecture (e.g., policy structures and property rights) is most important, allowing ample space for beneficial contesting of ideas around many other factors including supporting programs, and distribution of costs.