23 July 2019

Dear Sir/Madam,


We look forward to providing supplementary detail to this submission. This detail will be vital in assisting the Department to make an informed assessment to the Victorian Government on the potential implications of its emissions reduction targets.

EnergyAustralia is one of Australia’s largest energy companies, providing gas and electricity to 2.5 million household and business customer accounts across Eastern Australia. EnergyAustralia controls over 5,000 MW of electricity generation, including around 850 MW of renewable energy and 80 MWh of grid scale batteries across the National Electricity Market.

As echoed throughout this submission, we urge that a comprehensive bottom-up analysis is undertaken by the Department to understand and respond to the implications of the emissions reduction targets proposed by the Panel, before the government legislates the targets in March 2020. This should include an assessment of the abatement opportunities in each sector and their relative costs and wider social and economic implications, including risks to energy security.

Leaving this work to be completed in August 2020 as part of ‘sector pledge’ process as outlined in the Climate Change Act 2017 is too late and would suggest the government will not know the relative costs and risks of implementing its emissions reduction target when setting them.

EnergyAustralia accepts our responsibility, as a big emitter of carbon, to lead an orderly and fair transition to cleaner forms of energy.

We think solar and wind energy, demand response, pumped-hydro, battery storage and intelligent energy management systems – supported by flexible gas-fired generation – will underpin a new, modern energy system in Australia.

Our approach is to reduce emissions by progressively phasing out our coal-based generation in Australia as we integrate new supplies of renewable power with firm generation options, without compromising reliable and affordable energy for everyone.
The transition, however, requires careful management and planning.

The Yallourn mine and power station in the Latrobe Valley, employing over 500 workers and powering over two million Victorian homes, is potentially directly implicated by the recommendations made by the Panel. Our plan remains to operate Yallourn to the end of its life in 2032 or as long as government policy, and market conditions, allow.

We have promised our workers and the local community that, should things change, and circumstances remain within our control, we will give at least five years’ notice before closing Yallourn.

The Panel’s emissions reduction targets, coupled with the view that the electricity sector should do more than its pro rata share of the effort, imply a decarbonisation rate that unambiguously suggests the closure of Yallourn well before its 2032 end-of-life and would likely require the closure of other brown coal power stations.

Our concern is that any closure of Yallourn, or any other power station, must be done without the risk of power outages, while ensuring electricity remains affordable to Victorian homes and businesses. The closure of Yallourn must only occur where careful planning ensures there is replacement capacity and impacted employees and the community are given new opportunities to prosper.

In setting emissions reduction targets for Victoria, it is therefore vital that the government first establishes its social licence by assessing these risks and planning for how they can be managed.

Without a bottom-up assessment of this nature and careful planning, it is a leap of faith, the risks of which will be borne by all Victorians, but most acutely the residents of the Latrobe Valley.

EnergyAustralia has commenced analysis of options for replacement generation that can ensure an uninterrupted and affordable supply of electricity in Victoria. We are placing emphasis on exploring a range of pumped-hydro and gas-fired options in the Latrobe Valley and wider Gippsland region, as we are committed to delivering new economic opportunities to the communities we are part of.

However new generation takes years to plan for and build and, in the meantime, we will continue to invest to keep Yallourn operating – because without it we cannot see how we deliver on our commitment to keep electricity affordable and reliable for our customers.

For further information on any issues raised in this submission please contact [insert contact information].

Best regards,

[Signature]

Markets Executive
EnergyAustralia in Victoria

At EnergyAustralia our purpose is to lead and accelerate the clean energy transformation for all customers, and in Victoria we have invested accordingly:

- Underpinning the only two utility-scale lithium-ion battery storage projects in the state at Gannawarra and Ballarat
- Underpinning a wind farm at Mortons Lane and a solar farm at Gannawarra
- Implementing one of the largest residential demand-side participation programs with 8,000 participating Victorian household customers, and 20 MW of demand response including large industrial customer participation
- Providing carbon-neutral electricity to almost 50,000 Victorian customers, at their choice and at no extra cost to them, through our Go Neutral program, and
- Acquiring 950 MW of peaking gas-fired power stations at Newport and Jeeralang.

Yet the importance of our brown coal fired power station, Yallourn, to the state of Victoria cannot be understated. Yallourn’s turbines produce 1,480 megawatts of electricity an hour – enough to power over two million households annually. It employs over 500 people.

EnergyAustralia is headquartered in Melbourne and Victoria is a state of critical importance to us. Within Victoria EnergyAustralia has over 850,000 accounts; we control over 2,500 MW of electricity generation capacity and employ over 2,700 people. EnergyAustralia is an integrated member of the Victorian community and our success is dependent on the success of that community.

Solving for multiple challenges

Each year power stations owned by EnergyAustralia produce greenhouse gases, mostly carbon dioxide or CO₂, from burning coal and gas to supply electricity to our 1.6 million electricity customers.

We accept our responsibility, as an emitter of carbon, to lead an orderly and fair transition to cleaner forms of energy. This means reducing emissions, while maintaining access to reliable and affordable energy for everyone. Our approach is based on a just transition, to progressively and sensibly phase out our coal-based generation in Australia as we integrate new supplies of renewable power with firm generation options.

The transition, however, requires careful management and planning.

In recent years several major coal-fired power stations were progressively retired (some at short notice), without replacement by equivalent new dispatchable capacity. Consequently, Australia’s ability to generate reliable power has declined, causing the market to tighten, electricity prices to rise and supply security during Summer to be less assured.

More acutely, within the Latrobe Valley, the sudden closure of the Hazelwood power station put increased pressure on the community, already working hard to manage higher levels of unemployment compared to other regions in Victoria.

Today Australia’s National Energy Market is characterised by a fine balance between supply and demand during times of peak electricity consumption. The system’s diminished resilience was highlighted in early 2019 by blackouts in southern regions.
during extreme summer heat. This means, practically, that for now coal-fired plants have an important role to play underpinning the introduction of supplies of cleaner power.

For so long as our coal-and gas-fired plants are needed, EnergyAustralia will invest in the assets and our people, so our operations are as efficient as they can possibly be, and emissions to the environment are carefully managed.

More broadly, EnergyAustralia will continue to invest in measures and projects to support development of a new, modern energy system and help customers as we make the transition to cleaner forms of power.

One of our key priorities today is assessing a portfolio of opportunities, including new, gas- and pumped-hydro generation projects and utility scale batteries, with the potential to provide firm, reliable and flexible capacity when electricity customers need it.

We think solar and wind energy, demand response, pumped-hydro, battery storage and intelligent energy management systems – supported by flexible gas-fired generation – will underpin a new, modern energy system in Australia. The challenge is integrating all those technologies, so we get the right balance and mix at least cost to the customer.

Our commitment to the Yallourn community

We’re working hard to make the Yallourn Power Station more efficient.

At the same time, we continue to talk to stakeholders, including our workers and the community, to support opportunities and plan for the transition already underway in the Latrobe Valley. And we’re investing to modernise Australia’s energy system with new, cleaner power generation.

Australia’s shrinking capacity to generate reliable energy has been a major cause of rising household power prices. Losing Yallourn’s electricity supply would, without careful planning, compound the problem and impact the local community.

Our plans are to run the plant to 2032 or for as long as policy and regulation permit, and there’s not a substantial change in the market.

We have promised our workers and the local community that, should things change, and circumstances remain within our control, we will give at least five years’ notice before closing Yallourn.

Implications for Yallourn power station

The Yallourn mine and power station in the Latrobe Valley, is potentially directly implicated by the recommendations made by the Panel. Our plan remains to operate Yallourn to the end of its life in 2032 or as long as government policy interventions and market conditions allow. The introduction of possible new measures to give effect to the emissions reduction targets recommended by the Panel could bring forward the closure of Yallourn.

We are committed to working in partnership with the Victorian Government, and all stakeholders, to ensure that the ultimate transition of the Yallourn power station is undertaken with ample time and preparation to ensure energy reliability and affordability, while delivering good outcomes for our workers and the community more broadly. We all have a moral obligation to ensure that a ‘just transition’ occurs. Therefore, we are seeking
transparency and engagement from the government at every step so that we’re able to work together to overcome the challenges ahead.

EnergyAustralia believes that the most effective means of reducing emissions is through a national bipartisan approach that integrates with energy policy, rather than state-based schemes.

In the absence of a national policy, we support the transition of Victoria’s emission intensive energy mix to cleaner forms of energy in a way that minimises costs to households and businesses and ensures reliability is maintained. As part of this, government and industry should work together to ensure affected communities are provided with new sources of employment and support services.

In its Final Report, the Panel has recommended economy-wide emissions reductions on 2005 levels of 32-39% by 2025 and 45-60% by 2030. The Panel articulates a view that electricity sector emissions should be addressed first, and should therefore go much further than other sectors of the economy, many of which are reporting growing emissions:

The modelling considered a scenario under which the electricity sector contributes the majority of emissions reduction required to achieve the economy-wide interim targets recommended in this report. This scenario involved emissions reduction in the electricity sector of 70% below 2005 levels by 2030. This is equivalent to around a 50% reduction from projected emissions in 2020 (which takes into account the closure of Hazelwood Power Station in 2017). \(^1\)

The Panel’s emissions reduction targets, coupled with the acceleration logic described above, imply a decarbonisation rate that unambiguously suggests the closure of Yallourn well before its 2032 end-of-life and would likely require the closure of other brown coal power stations.

We understand and accept our responsibility as an energy provider to lead an orderly and fair transition to cleaner forms of energy. We also know that the hand of government will heavily determine the fate of Yallourn.

Our concern is that any closure of Yallourn, or any other power station, must be done without the risk of power outages, while ensuring electricity remains affordable to Victorian homes and businesses. The closure of Yallourn should only occur where careful planning ensures there is replacement capacity and impacted employees and the community are given new opportunities to prosper.

We note that the Panel, in making its recommendations, was not required to outline in detail how to address the risks to electricity affordability, reliability, affected workers and the community if their target was adopted as a carbon constraint on electricity generation.

In setting emissions reduction targets for Victoria, it is vital that the government first establishes its social licence by assessing these risks and planning for how they can be managed. Without a bottom-up assessment of this nature and careful planning, it is a leap of faith, the risks of which will be borne by all Victorians, but most acutely the residents of the Latrobe Valley.

The governments process to legislate emissions reduction targets in March 2020 before determining the policies for each sector to get there in August 2020, is putting the 'cart before the horse'.

Government and industry must provide a framework that ensures that the composition of Victoria's future generation portfolio is flexible, reliable, affordable and clean. We must equally work together to create a path for the communities in which we operate, with particular reference to the Latrobe Valley, before we can deliver a successful transition.

Only once these issues are addressed, and planned for, can we meaningfully reduce Victoria’s emissions.

**Cumulative nature of policy changes**

The decarbonisation targets recommended by the Panel raise the possibility of additional policy levers being introduced, potentially impacting the energy sector. There are several existing and emerging policies of relevance to electricity generators with which these would interact.

The interaction of multiple policy interventions could work against the orderly transition of Yallourn or other coal-fired power stations and the delivery of a reliable, affordable, and low carbon energy future.

Strategic alignment of these policies and their implications for Victorian energy consumers must be front and centre in consideration of emission reduction targets. Otherwise, a combination of these policy interventions could create conditions that render Yallourn uneconomic. Interventions of relevance to Yallourn already include:

- **VRET:** Targets are set to achieve 25% renewables by 2020 and 40% renewables by 2025, with a 50% target announced for 2030. This compares to a coal contribution of over 70% to Victoria’s electricity supply today.

- **Solar Homes:** The $1.3bn program provides further subsidies to rooftop solar systems, batteries and solar hot water systems to install 770,000 systems over 10 years.

- **EPA policy:** The potential for changes in various EPA policies across mining, environmental, water and air quality.

- **The Transmission Easement Tax:** Victorian Government decision is pending whether to continue to subsidise the Alcoa's Portland Aluminium Smelter beyond August 2021 – a very large consumer of electricity (~500MW).

Given the limited time available to make this submission, these issues are only touched-on. These issues are not new and have been raised previously. We would welcome the opportunity to explore their implications in greater detail with the Victorian Government as part of its emissions target setting process.
AEMO’s warning on energy security risks of Yallourn’s closure

As part of its Integrated Systems Plan 2018, AEMO ran a scenario taking 1500MW (equivalent to Yallourn) out of the energy market in 2024. The report found it led to ‘a serious breach of the reliability standard’ with ‘high’ levels of unserved energy i.e. blackouts. This tells us that it is critical to keeping the lights on to have the electricity generated by Yallourn replaced before closing it. There is simply not the spare capacity in Victoria’s electricity market that enabled Hazelwood to close without replacement, albeit making Summer peaks more challenging to meet.

Origin’s Mortlake Gas Fired Power station was the last dispatchable power station of size (550MW) to be built in Victoria and, with delays from industrial relations issues, took several years to construct. Building replacement generation for Yallourn could equally take several years in the absence of permitting support, with some generation technologies such as pumped-hydro taking considerably longer than five years.

It would be reckless to contemplate a closure that provided insufficient time to install replacement firm generation in Victoria. Interconnection to a state with no new generation does not provide more electricity to replace the lost capacity – it merely shifts the problem from one place to another.

Beyond solving for the replacement generation, the market also needs replacement for a smaller set of ancillary system stabilising services that have historically been provided free of cost by synchronous generation, like coal-fired power stations.

Solar and wind are undoubtedly a large and growing part of Australia’s energy mix. However, their intermittency is a challenge. Planning and investment is needed to provide “firm” capacity, such as gas or pumped-hydro, to ensure that households and businesses can flick a switch at any time of day.

AEMO’s 2018 Electricity Statement of Opportunities, calculates a representative wind and solar ‘peak contribution factor’, reflecting historic availability at periods of high demand. Using historical data, AEMO calculates that wind power in Victoria can be relied upon to cover only 8% of peak Summer demand for electricity in the state. The peak contribution factor applied for solar in Victoria is 11%. By comparison, Yallourn has averaged 91% availability on the 10 highest electricity demand days over the last 3 summers.

Victorians need an energy mix that can power our community, whether that homes, schools, hospitals, businesses 100% of the time, no matter the climatic conditions or time of day.

EnergyAustralia is assessing options to replace Yallourn

The role of firm dispatchable technologies will be central to balancing the electricity market in Victoria. We are assessing a range of such investment opportunities and are confident that our experience in underpinning the first two battery projects in Victoria.2

---

2 EnergyAustralia has the largest battery storage portfolio of any Australian retailer. We underpinned the two first of their kind battery storage projects which reached commercial operation over the 2018-2019 summer. The 30MW/30MWh Ballarat stand-alone Battery Storage System is located at a critical part of the transmission network. It provides grid stability services and can power more than 20,000 homes for an hour of peak demand before being recharged from the grid at night when demand is low. The 25MW/50MWh Gannawarra Battery Storage System is the largest integrated solar farm in Australia, and amongst the largest in the world.
alongside our expertise in pumped-hydro projects and balancing a mix of technologies and services, enables us to play a leading role in Victoria’s future energy mix.

EnergyAustralia has commenced analysis of options for replacement generation that can ensure an uninterrupted and affordable supply of electricity in Victoria.

We are placing emphasis on exploring a range of pumped-hydro and gas-fired options in Victoria. The gas-fired opportunities could be developed within the Latrobe Valley as we are committed to delivering new economic opportunities to the communities we are part of.

The Latrobe Valley’s competitive advantage in power generation in the state is unrivalled.

It simply makes economic sense to utilise the existing high voltage transmission power lines to the region on brownfield sites, with access to a highly-skilled and technically-trained workforce in power generation where possible. The Latrobe Valley is also well positioned to leverage gas transmission that links existing Bass Strait gas supplies, underground storage at Iona and linkages to LNG imports.

The Latrobe Valley, and wider Gippsland region, could be the beacon of future low emission dispatchable power generation for the state, providing alternative job opportunities to a whole new generation. These ambitions however will not be realised without the support of government.

The optimal replacement generation mix is comprised of new renewable, pumped-hydro and gas generation assets. Storage technologies permit low cost renewable generation to be harnessed which, as noted earlier, is a key enabler to achieving grid decarbonisation.

Gas, however, will still have an important transitional role due to the short storage duration of battery and, to a slightly lesser extent, pumped-hydro. Emerging storage technologies such as lithium ion are still too expensive for large scale solutions, however they will be continually evaluated as we transition. Gas complements renewables by providing longer duration back-up energy during extended periods of low wind (wind droughts) and also during winter when conditions can be dark, cloudy and still.

We are currently assessing gas generation options at three brownfield sites that could be operational in 5 years, assuming no delays. These facilities would not only involve significant capital investment in the region but would create substantial jobs during construction and a number of ongoing jobs during operation. This could be a huge economic boost to the Latrobe Valley if it becomes the preferred location.

The Latrobe Valley sites offer the following benefits:

- Existing transmission infrastructure.
- Existing gas pipeline to the region, minimal extension/upgrade to site required.
- Existing access to fresh water for cooling that could be reallocated to a new station on the site
- Vacant land available
- Talented pool of highly-trained and skilled power industry workers.

In parallel, we are investigating pumped-hydro options and have identified several preferred regions in Victoria, including in Gippsland. With a generation capacity of up to
750MW these could be operational in 6-8 years, with substantial flow on economic benefits for the region.

We believe wind and solar energy backed-up by pumped-hydro and gas-fired power will be the lowest cost means of replacing Yallourn’s capacity.

**Advantages of In-Region Generation Compared to Interconnectors**

There has recently been public commentary regarding an AEMO ISP Insights report centred on the case for interconnectors to replace Yallourn’s capacity. In this report AEMO described interconnectors as potentially being the lowest cost options for new capacity in the event of Yallourn closing.

EnergyAustralia has concerns with the AEMO report as it did not adequately consider new replacement generation options within Victoria. While interconnectors that support investment in neighbouring states are one option for replacing Yallourn’s capacity, there are significant advantages associated with Victorian generation investment that the AEMO’s report did not acknowledge. An investment strategy that prioritised interconnectors over Victorian generation would have several adverse implications, including that:

- The cost of transmission is directly passed through to customers whereas the private sector takes the risk of investing in firm generation
- There would be no new sources of on-going long-term employment fostered within Victoria by investing in transmission over local replacement generation. Indeed, investment in other states would be funded by Victoria
- The exporting state may run out of surplus energy to export to meet Victoria’s needs. Particularly, if the state is a net-importer with impending closures as is the case with NSW. Intermittent wind and solar energy output tend to be correlated across our southern states, and typically low levels of wind and solar capacity are available at periods of peak demand. Additional interconnection would therefore not guarantee firm supply in the event of co-incident extreme weather conditions across 2 or more states.
- Further, if the exporting state experienced an energy security emergency they can be required to stop electricity being sent to other states at the direction of the Minister
- Interconnection supply cannot be considered physically or financially ‘firm’, and the treatment under the Retailer Reliability Obligation remains uncertain and may lead to higher prices for consumers
- A reduction of firm generation in Victoria, with demand served instead by interconnection, may cause a reduction in system stability through reduced supply of grid services such as inertia and voltage support. Additional investment in synchronous condensers or other solutions may be required to stabilise the grid, which would add to the delivered cost of the interconnector.

We would welcome a full and thorough assessment by AEMO of the relative benefits of investment in interconnectors relative to Victorian generation investment. It is our view that the more reliable and cost-effective way to replace brown coal generation is with multiple and diverse generation sources within Victoria.
Solving for affordability

EnergyAustralia has well over 20,000 customers enrolled in hardship support programs; our investment in repayment matching and other forms of support totals over $5 million each year. In addition, we are now half way through a 3 year, $10m community hardship investment plan that has delivered:

- $1.8m in debt relief to over 1000 hardship customers
- $500k toward VincentCare’s Ozaram House Redevelopment which enabled the purchase and installation of air conditioning units throughout the building
- A partnership with ICAN Learn to launch a three-year, $1.2m Financial Counselling Development Program that will provide scholarships, skills and education to new and existing financial counsellors
- A partnership with other tier 1 energy retailers to provide a fund of $30,000 in debt waivers for Victorian women in crisis through The Queen’s Fund.

EnergyAustralia provides a further $15k per annum towards essential appliances for women in need irrespective of their energy retailer.

More than 22% of EnergyAustralia’s customer accounts in Victoria are eligible for and receive some form of concession. These customers are particularly exposed to price rises.

As older assets retire, the market will increasingly rely on higher-cost facilities during periods of peak demand, with prices also influenced by the higher long-run marginal cost of new renewable and battery investments, as required for their entry into the market. Efforts to decarbonise must be coupled with efforts to contain costs.

Any wholesale price suppression through renewable energy targets is short-lived until it displaces lower cost thermal generation, as shown in Figure 1 below.

Figure 1: Effect of the LRET on medium term wholesale electricity prices

![Figure 1: Effect of the LRET on medium term wholesale electricity prices](source: AEMC, 2017 Residential Pricing Trends Report, adapted from Grattan Institute, Executive Summary page V)
One important way to minimise price rises during the transition ahead will be to provide an extended lead-time to help the market meet the supply gap with replacement generation. The closure of Hazelwood caused supply to contract almost overnight and saw a dramatic increase in wholesale prices. Hazelwood provides an example that we must not see repeated but not have replacement capacity built before its closure.

It’s imperative that the government does a full analysis of the impact on prices so that they are understood, replacement capacity is built, and adequate preparations are made. When Hazelwood closed, the Victorian government estimated a 4% increase in bills\(^3\) but retail prices went up closer to 16\(^a\)%.

**Figure 2:**
**Year-ahead Victorian swap prices showing price jump after Hazelwood closure**

![Figure 2](image)

*Source: EnergyAustralia analysis*

**Solving for worker and community outcomes**

The Latrobe Valley has weathered two large storms, the first in the 1990s when the energy industry was restructured and privatised and many lost their jobs, leading to large intergenerational unemployment, and the second in 2017 when the closure of Hazelwood caused the loss of 750 jobs. The Latrobe Valley region has also seen the closure of EBAC (the Energy Brix plant formerly known as the Morwell Briquetting and Power Station) in 2014, in which 85 workers were let go, and the closure of the Carter Holt Harvey Plant in 2017, in which around 200 workers were let go.

---


While the region’s unemployment rate is now around 6%, compared to 8% when Hazelwood closed, it remains above the Victorian state average⁶; underemployment and casualisation have increased in the past two years.

Efforts to decarbonise by closing another coal-fired power station would cause further economic and social upheaval in the Latrobe Valley, even over a time horizon that exceeds a decade. Any closures must be bolstered by early transition planning by all levels of government, including carefully-planned and continuous government investment in the region.

Industry and government need to work together to deliver new opportunities to today’s workers, and future workers, in the Latrobe Valley.

**Conclusion**

Decarbonisation remains a significant challenge, one that the public has made clear that governments and industry must resolve together. The public also rightfully expects that just as emissions must fall, affordability and reliability must not also decline. Local communities, having proudly powered the Victorian economy for decades, are entitled to support.

We can work to ensure an orderly transition if we work together. However, we risk a bumpy transition in the absence of a careful, thoughtful plan that balances emissions, affordability, reliability and economic opportunities for local communities.

A gradual transition to a new energy mix has already commenced. If adoption of the Panel’s recommendations would see the early closure of Yallourn, it must be disclosed and thoroughly understood.

It is therefore critical that a bottom-up analysis is undertaken to understand the impacts that decarbonising at the proposed levels would have upon affordability, reliability and dispatchability, worker outcomes and community resilience.

We recommend that consultation on ‘Sector Pledges’ is integrated into this work so that the ‘where, how and at what cost’ questions regarding various abatement options are understood and consulted on to inform where the emissions targets are set.

We look forward to continuing our discussions in pursuit of alignment between the government’s policies and the need to ensure a reliable and affordable supply of electricity for all Victorians throughout the transition period.