

CLOSURE OF HAZELWOOD: BENEFITS TO THE CLIMATE AND THE ENERGY MARKET

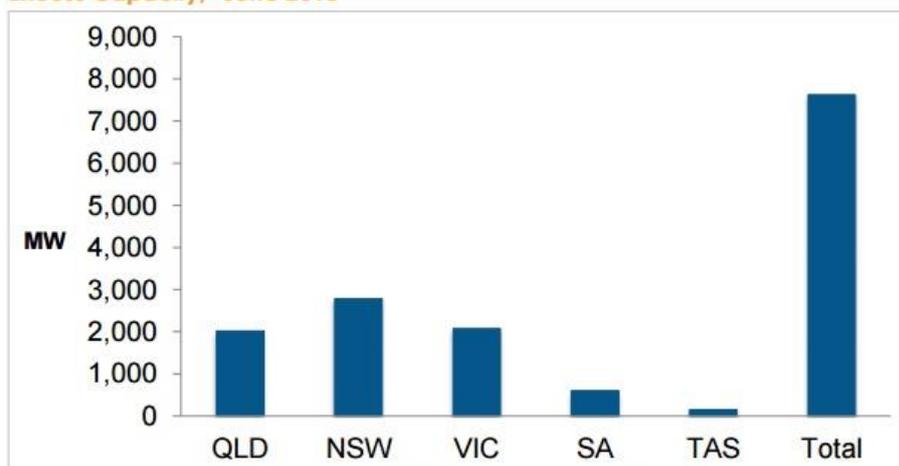
Victoria can meet its power generating needs without Hazelwood

- Growing renewable energy construction and falling electricity demand across Australia has created a situation where the National Electricity Market¹ (NEM) has more generation capacity than is needed. In 2014, the Australian Energy Market Operator indicated that the NEM had between 7,650 MW and 8,950 MW of surplus capacity, including approximately 2,000 MW in Victoria.
- A recent estimate, as of June 2015, indicates that Victoria still has approximately 2,000 MW of surplus generation capacity.²
- The Australian Energy Regulator suggests that, even without further investment beyond that already announced, Victoria will still have over 1000 MW of surplus capacity by 2025.³
- This means that Hazelwood's 1,600 MW could be switched off without affecting Victoria's capacity to meet its energy needs and "without breaching Australian Energy Market Operator's reliability standard for security of supply."⁴
- In Victoria, there is over 2,400 MW of renewable energy projects that are not proceeding because of over-supply in the market. Incumbent coal generators like Hazelwood, are blocking new renewable energy investment in Victoria.⁵
- Owners of other coal generators in Victoria acknowledge there is an over-supply in the market that needs to be addressed.⁶

Demand for coal generated electricity is trending down

- Between 2009 and 2015, electricity demand in the Australian National Energy Market fell by 7.5 per cent.⁷
- The excess supply of electricity is at risk of increasing due to (1) growth in rooftop solar installations and storage technologies; (2) ongoing energy efficiency savings; and (3) "a further decline" in energy intensive industries, such as the aluminium sector.

Excess Capacity,* June 2015



*Excess capacity defined as capacity able to be withdrawn until the Reliability Standard is met.
Sources: AEMO, IEEFA estimates

Without a planned process, declines in wholesale electricity price and electricity demand will likely lead to less emissions-intensive generators closing first

- Declining wholesale price and demands disproportionately affects the profitability of a large number of generators, particularly in New South Wales.⁸
- Generators that are particularly vulnerable also happen to be less emission intensive.⁹

- Consequently, without planned closure, less emissions-intensive generators are likely to close first if wholesale electricity prices and electricity demand continues to decline.¹⁰
- The most emissions inefficient generators, such as Hazelwood, should be prioritised for closure.

Hazelwood is aged, outdated and carbon intensive

- Hazelwood is the most emissions-intensive generator in Australia and is among the most emissions-intensive in the world. It is 50% more polluting than the global average emissions intensity for subcritical power stations.¹¹
- Its high carbon emissions are due to its outdated technology and its use of carbon-intensive brown coal.
- Hazelwood is 52 years old. The usual lifespan of coal-fired generators is 30 years, often less.

Hazelwood imposes high climate change costs

- As Australia's most carbon-intensive power generator, Hazelwood has a large climate change externality. It pollutes 15% of Victoria's emissions and 3% of Australia's.¹²
- One estimate puts the external cost of Hazelwood's carbon emissions at approximately \$800 million per year, based on a conservative figure of the social cost of carbon.¹³ Other estimates suggest figures from \$1 billion to over \$2 billion per year.¹⁴
- AEMO has indicated that 30-40% of Australia's coal capacity will need to be closed by 2030 if we are to meet the emission reduction targets of the Turnbull Government.¹⁵ These targets are consistent with an unacceptable 3 degrees of warming. All of Australian's coal generation would need to be phased out by 2035 at the latest to reach the Paris Agreement objective of staying below 2 degrees warming.¹⁶

Hazelwood has high health costs

- Air pollutants from coal-powered generators have adverse health impacts, such as lung cancer, heart disease and bronchitis, and increase premature mortality.¹⁷
- The health cost of Hazelwood's air pollutants is estimated to be between \$56 and \$187 million per year.¹⁸ In 2014, the Hazelwood mine fire blanketed the Latrobe Valley community in toxic smoke for 45 days. The mine fire resulted in adverse health effects such as headaches, blood noses and stinging eyes.¹⁹ An inquiry into the fire found the pollution was likely to have contributed to 11 deaths.²⁰
- The long-term health impacts of the mine fire are unknown.²¹

The Latrobe Valley knows the transition away from coal is coming

- The Victorian state government recently provided \$40 million dollars, plus other support, to start planning diversification of the Latrobe Valley regional economy.²²
- The Federal opposition party has committed to establishing a Just Transitions Unit in the Department of Environment to coordinate support for workers and communities as coal plants are phased out to meet commitments under the Paris Agreement.
- The Mayor of the Latrobe City Council recently wrote that "*the transition away from brown coal is not the thing that we fear. What we fear is being abandoned.*"²³
- The Latrobe Valley will be more successful in its economic diversification efforts if the community has certainty about when Hazelwood will be phased out, and a just transition plan is put in place.
- The top employment industries are health care and social assistance (12.9%); retail trade (12.6%); construction (9.9%); manufacturing (9.7%); and electricity, gas, water and waste services (6.6%).²⁴ Employment in electricity production and coal mining account for only 6.5 per cent of employment.²⁵
- In 2006, just over half the Latrobe Valley's workforce was employed in five industries: retail trade; health care and social assistance; manufacturing; construction; and education and training.²⁶
- Significant growth is expected to occur in the education and training sector and in health and aged care services.²⁷

References

¹ The National Electricity Market covers the states of Victoria, New South Wales, Queensland, South Australia, Tasmania and the Australian Capital Territory, supplying over 80% of the Australian population. Western Australia and the Northern Territory have separate electricity grids.

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<https://www.aer.gov.au/system/files/State%20of%20the%20energy%20market%202015%20%28A4%20format%29%20%E2%80%93%20last%20updated%204%20February%202016.pdf>
- ⁴ King, T 2016, *Sub-critical Australia: risks from market imbalance in the Australian National Electricity Market*, Institute for Energy Economics and Financial Analysis, p.9.
- ⁵ Victorian Government, 2015 *Victoria's Renewable Energy Roadmap: Delivering Jobs and a Clean Energy Future*, p.10-12. <http://www.energyandresources.vic.gov.au/energy/sustainable-energy/victorias-renewable-energy-roadmap>
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- ⁹ Ibid, p.28.
- ¹⁰ Ibid, p.27.
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- ¹³ Ward, J & Power, M 2015, *Cleaning up Victoria's power sector: the full social costs of Hazelwood power station*, p.12.
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- ¹⁵ AEMO, "2016 Consultation Paper for the National Transmission Network Development Plan" (2016). <<http://www.aemo.com.au/Consultations/National-Electricity-Market/2016-NTNDP-Consultation>>
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- ¹⁷ Climate Council 2014, *Climate Council briefing paper: health effects of coal*, Climate Council, p.1.
- ¹⁸ Ward, J & Power, M 2015, *Cleaning up Victoria's power sector: the full social costs of Hazelwood power station*, p.17.
- ¹⁹ Teague, B, Catford, J & Petering, S 2014, *Hazelwood mine fire inquiry report*, State of Victoria, Melbourne, p.308.
- ²⁰ Hazelwood Mine Fire Inquiry, *Investigation into 2009-2014 Deaths*, Volume III, < <http://hazelwoodinquiry.vic.gov.au/201516-report/volume-ii-investigations-into-2009-2014-deaths/>>
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