

Replace
Hazelwood
P R I M E R



Climate Action Moreland

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SUMMARY

- The Victorian Government has expressed a desire (though it does not yet have a policy) for a significant expansion of renewable energy in Victoria. This has widespread community support and must be done quickly and at a large scale because climate change is already dangerous. Scientists warn that two degrees Celsius of warming could occur in just two decades, so preserving a safe climate and a healthy future requires rapid de-carbonisation.
 - Expanding renewable energy requires coal-generating capacity to be removed from the market because oversupply is crowding out and preventing new investment. The Australian energy market operator says there are about eight gigawatts of surplus generating capacity across the national market, equivalent to five Hazelwood power stations. This includes up to 2.2 gigawatts of brown coal generation that is no longer required in Victoria in 2015, which is greater than Hazelwood's capacity. Power companies have been lobbying government for capacity to be reduced, and senior Victorian energy department bureaucrats are aware of the need to close coal power stations in order to roll out renewables.
 - The Victorian Government has committed to being a leader on climate change. Closing down excess coal generation is a key test of the government's climate credentials. Coal-fired power stations are the world's largest source of planet-warming carbon dioxide emissions. Victoria cannot make the necessary emissions reductions without addressing the operations of Hazelwood and/or Yallourn power stations.
 - Hazelwood power station is old, unsafe and dirty.
- Based on emissions intensity, it is the third-dirtiest coal power station in the world and the dirtiest in Australia, releasing around 16 million tonnes of greenhouse gases annually, almost three per cent of total Australian greenhouse emissions. The Hazelwood majority owner, Engie (formerly GDF Suez), owns the third-most polluting coal-power station fleet in the world. The full – health and carbon pollution – social costs of Hazelwood totalling \$900 million per year are borne by the community, rather than the plant's owners.
- A steady stream of local jobs can be created in the Latrobe Valley with the rehabilitation of mines and decommissioning of plant, which will require a significant workforce stretching well over a decade. The Latrobe Valley needs a strong jobs package and an economic transition plan and new industries because the move from coal to clean wind and solar renewable energy is now both urgent and inevitable.
 - Hazelwood power station and mine are a health hazard to local residents, exemplified by the autumn 2014 mine fire. The owners of Hazelwood have abused their social licence and forfeited the right to profit from a power station that is now a major health hazard – both to local people and to all peoples who face the uncertainties of living in a hotter and more extreme climate.
 - In July 2010, the Victorian Labor government promised to start shutting Hazelwood and passed climate legislation providing the reserve power to regulate emissions from existing brown coal-fired generators. Restoring the government's capacity to regulate emissions would be complementary to actions being taken by other governments, including in the United States and Europe.

Replace Hazelwood Primer is written by David Spratt and produced by Climate Action Moreland.
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HAZELWOOD POWER STATION

Hazelwood Power Station (HPS) was built between 1964 and 1971, and comprises 1542 megawatt (MW) of capacity over eight generators. It was privatised by the Victorian Liberal Party Kennett government in 1996 for \$2.35 billion.

If HPS had stayed in public hands, it would likely have been decommissioned in 2005, but in 2004 the Bracks Labor government extended its operations till 2031, allowing Hazelwood to move a road and a river to access 43 million tonnes of brown coal deposits in a realignment of the mining licence boundaries. The owners have a 30-year mining licence due for renewal in 2026.

HPS and the land on which it operates are owned by the Hazelwood Power Partnership. Since 7 June 2013, the four partners have been subsidiaries of International Power (Australia) Holdings Pty Ltd. This company is in turn jointly owned by subsidiaries of Engie (formerly GDF Suez SA) (72 per cent ownership) and Mitsui & Co Ltd (28 per cent ownership). Engie is a global energy company with corporate headquarters in France. Mitsui & Co Ltd is a global trading company with corporate headquarters in Japan.

Currently HPS produces more than 10,000 gigawatt hours (GWh) of energy annually and is supplied with up to 18 million tonnes of coal each year from the adjacent

Hazelwood mine, releasing around 16 million tonnes of greenhouse gases annually. Today HPS provides approximately 21 per cent of Victoria's baseline electricity supply.

POLLUTION

Emissions intensity: In 2010, HPS was listed by The Climate Group as being the second largest power station emitter of carbon pollution in Australia by total volume, but with the highest emissions intensity.¹ The Climate Group estimated that in 2010 HPS emitted 15.7 million tonnes of carbon dioxide equivalent greenhouse gases, which is 2.8 per cent of Australia's total carbon dioxide emissions, and 9 per cent of Australia's total carbon dioxide (CO₂) from electricity generation. A recent environmental report released by the EU Energy Commission found that based on CO₂ emissions per unit of output (as of 2013), Hazelwood is the third most polluting thermal power plant in the world.² HPS was listed as the least carbon efficient power station in the OECD in a 2005 report by WWF Australia, with CO₂ intensity of 1.58 tonnes of carbon dioxide per megawatt-hour (t/MWh), making it "the most polluting of all power stations operating in the world's major industrialised countries".³ More recently

CLIMATE CHANGE AND COAL EMISSIONS

Australia is the world's largest per capita emitter of greenhouse gases.

According to the Pitt & Sherry Cedex report, carbon emissions from Australia's main electricity network to the end of February 2015 had increased by an annual rate of 4.1 million tonnes compared with the end of June 2014, when the Abbott government scrapped the carbon price. Over the same period, the share of black and brown coal in the energy mix of the National Electricity Market increased to 74.9 per cent compared to 72.9 per cent in July 2014, and is closing in on the 75.1 per cent share held before the carbon tax began in mid-2012.⁴

Recent research has demonstrated that the global carbon budget has expired if we wish to keep global warming to 2 degrees Celsius (2C°), itself a dangerously high target.⁵ That is, no additional emissions are required to push the planet to 2C° of warming, as soon as two decades from now.⁶ In Australia, 2C° of warming would result in the salination of Kakadu, the loss of the Queensland wet tropics rain forests and the loss of the Great Barrier Reef, as well as a sea-level rise in the tens of metres. 2C° of warming is considered to be the boundary between dangerous and very dangerous climate change.

Global action at emergency speed is essential to drive a rapid transition from dirty fossil fuels to clean technologies and renewable energy. Replacing the fossil fuel industry is now a pressing priority. The tide may be starting to turn against coal and fossil fuels, but profitable existing coal infrastructure such as Australia's big brown-coal generators will not close themselves down.

the Australian Energy Market Operator (AEMO) has stated its emissions intensity at 1.52 t/MWh.⁷ Pollution from Hazelwood increased 2.7 per cent from 1998 to 2004, despite investment in "cleaning up" the facility.

Water: In 2005, 1.31 megalitres of water was consumed per gigawatt-hour of power generated at Hazelwood. That adds up to 27 billion litres a year, when water used in the mine is included.⁸

Pollutants: In a 2012-2013 report, the National Pollutant Inventory (NPI) measured the power station's annual polychlorinated dioxins and furans emissions at 0.0016 kg; arsenic, cadmium and compounds 95 kgs; mercury and compounds 450 kgs; hydrochloric acid 8 million kgs; oxides of nitrogen 25 million kgs; sulphuric acid 13 million kgs; particulate matter 2.5µm 550,000 kgs; and boron and compounds 110,000 kgs.⁹

Asbestos: A 2001 Victorian State Government study found the rate of pleural and peritoneal mesothelioma among power industry workers was seven times the national average. Latrobe Valley power industry workers die 15 years younger than the national average. The power stations of the Latrobe Valley used asbestos widely in their construction. The substance was banned in Victoria in 2003. However, it's estimated that 146,000 employees and contractors, who worked in State Electricity Commission of Victoria (SECV) plants from 1921 to the 1980s, were exposed to it. Between 1976 and 2008, \$52.6 million was paid to former SECV employees by the State government insurance authority, and it is expected a further \$369 million will be paid out by the Victorian Managed Insurance Authority to former employees. In June 2010, the EPA confirmed it was investigating reports one of HPS's smoke stacks contained asbestos.¹⁰

Breaches: In November 2009, Environment Victoria released International Power's 2009 *Statement of*

Compliance in which the company revealed that it had breached four of the 22 conditions of its Environment Protection Authority licence. The group also reported that the company had breached its licence conditions in 2007 and 2008. Environment Victoria said the breaches:

relate to water quality in discharges from the plant's cooling pond to the Morwell River; dust and particulate levels. The reports also outline that environmental targets relating to gaseous emissions from the smokestacks, including carbon monoxide, sulphur dioxide and sulphur trioxide were also exceeded.

Environment Victoria added that: "on several occasions when the plant exceeded its licence limits, the EPA granted the company an emergency approval to pollute, protecting International Power from prosecution under environmental laws."¹¹

SOCIAL COST

The full social cost of Hazelwood – health and carbon pollution costs – is \$900 million per year according to a recently released report from Harvard University researchers.¹² These costs are borne by the Latrobe Valley community (health) and global community (carbon pollution), rather than the plant's owners.

The research, prompted by the health effects of the 2014 Hazelwood mine fire, calculates the social costs for each electricity generator in Victoria and highlights the importance of accounting for these externalised costs when considering the State's future energy mix. The report concludes by noting that a failure to price the environmental and air pollution costs "is distorting the market and preventing a shift to cleaner generation."

The reports authors say:

The historical dominance of brown coal generators like Hazelwood in Victoria's energy market is based on their very low private costs, driven by cheap and plentiful fuel

and low operating costs. However, this is only part of the picture, ignoring the significant external costs that these generators impose to human health, the environment, climate change and public infrastructure.

In this paper we estimate true cost of Hazelwood in both private and social terms. As expected, we find very low private short run marginal costs, in the order of \$3/MWh. We also find very high external costs. Our central case estimates of the external costs of carbon emissions and air pollutants are \$64/MWh and \$8/MWh respectively. This gives a social marginal cost of \$75/MWh, and social average unit cost of \$87/MWh, well above the current Victorian wholesale electricity price of ~\$30/MWh. This means Hazelwood imposes an external economic cost on Australians in the order of \$900 million per year, and over \$2.5 billion in our high case estimates.¹³

Dr Nicholas Aberle of Environment Victoria commented:

It has been known for a long time that burning coal causes health and environmental damage, but this is the first time research has attempted to quantify that cost in Victoria. The modelling shows that the large

power stations in the Latrobe Valley are responsible for costs between \$500m and \$1.2b each in health and environmental damage every year.”

In an opinion column in *The Age* in 2010, “Wrong to dismiss the dirt on Hazelwood”, Professor in the School of Earth Sciences at the Melbourne University David Karoly estimated that since the HPS began operating in 1971 it has emitted approximately 600 million tonnes of carbon dioxide and would contribute a further 320 million tonnes prior to its currently scheduled closure date of 2031. Karoly estimated that this one power station:

will contribute 0.01 per cent of total global emissions from 1970 to 2100. Given the direct link from emissions of greenhouse gases to climate change and sea level rise, the emissions from Hazelwood can be pinpointed as a partial contributor to future sea level rise. Since the rise is conservatively expected to affect 100 million people by 2100, Hazelwood’s 0.01 per cent contribution will cause the annual flooding of more than 10,000 people somewhere in the world.¹⁴

EXCESS CAPACITY IN THE ELECTRICITY MARKET

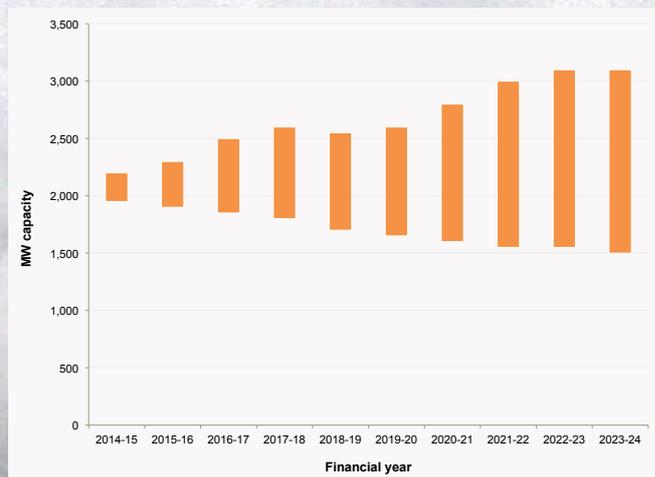
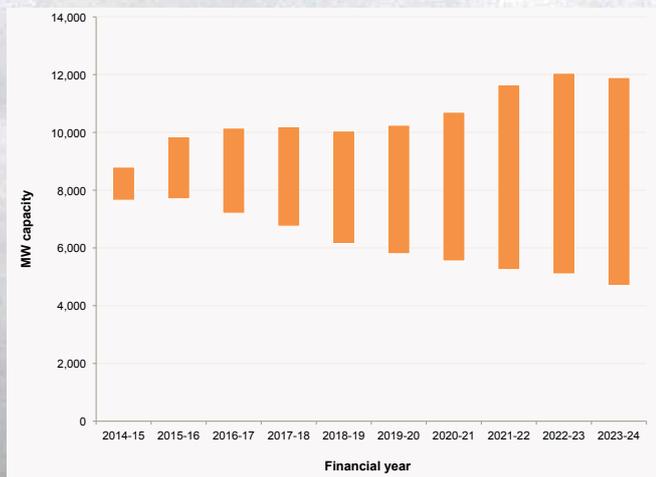
AEMO, the Australian Energy Market Operator, reported in its 2014 *Statement of Opportunities* that there is potentially between 7650 MW and 8950 MW of surplus capacity across the National Electricity Market (NEM) in 2014–15. Approximately 90 per cent of this is in New South Wales, Queensland and Victoria. It says more than 7500 MW of generation capacity would need to be removed from the market to affect supply adequacy in 2014-15.¹⁵

This is equivalent to around five Hazelwood power stations. AEMO has identified up to 2200 MW of brown coal generation that is no longer needed in Victoria in 2015.

Electricity consumption in the NEM is forecast to decline over the next three years, following an average annual decline of 1.8 per cent that occurred between 2009–10 and 2013–14. There has been reduced residential and commercial consumption in most NEM regions due to strong growth in rooftop photovoltaic (PV) system installations, ongoing energy efficiency savings, responses to high electricity prices over recent years and retirement of some energy-intensive heavy industry. In 2013-14, rooftop PV results in a 2.9 per cent reduction in consumption from the grid.¹⁶

Replacing Hazelwood would reduce excess capacity and help restore investor confidence to build new clean capacity, according to Roger Dargaville of the Energy Research Institute at University of Melbourne:

Hazelwood runs at an average of around 85 per cent capacity, or 1.4 GW. So the 1 GW decrease in demand is close to the total contribution of Hazelwood. Turning it off would more or less take us back to the supply and demand balance of 2008. This would have the effect of increasing wholesale electricity prices by around 2 c/kWh – returning prices to the levels seen before 2008, and restoring some investor confidence to build new and cleaner capacity. Even without new capacity, the effect of shutting down Hazelwood and the slack being taken up by existing generators that have on average 30 per cent lower emissions, would reduce CO₂ emissions by 5 Mt per year, or three per cent of Australia’s electricity sector emissions.¹⁷



Excess generation capacity in Australian (left) and Victorian (right) electricity markets. AEMO data



THE MINE FIRE AND REHABILITATION

A fire commonly referred to as the Morwell coal mine fire started in disused and poorly rehabilitated sections of the HPS open-cut mine on 9 February 2014 and was officially considered controlled on 10 March 2014. After 45 days it was declared “safe”. The Chief Officer of the Country Fire Authority described the fire as “one of the largest, longest running and most complex fires in the State’s history.” The mine and the fire were extremely close to residential areas of Morwell.¹⁸

The State government and its chief medical officer were reluctant to act quickly and decisively in the face of very significant threats to health of the 12,000 residents of Morwell, and in response to compelling evidence compiled by residents and unions. Men, women and children complained of headaches, bleeding noses and bloody eyes, coughing, breathing difficulties, insomnia, lethargy, skin irritations, throat, eye and ear infections, depression, agitation and anxiety. Some symptoms have persisted since the fire, and the reconvened royal commission will examine concerns about long-term health impacts.

One extensive study, published in the *British Medical Journal* in February 2014, found that a tiny increase in annual exposure to PM_{2.5} fine particulates (which Morwell residents breathed in) increases risk of a heart attack by 13 per cent, according to researcher Dr Guilia Chiseroni.¹⁹

PM_{2.5} particulates during the fire were measured at levels up to 28 times the safe standard.

Twenty-three firefighters lodged claims with WorkCover as a result of attending the Hazelwood fire, while 15 received hospital treatment. Fourteen of those 15 were treated in hospital for carbon monoxide poisoning, as well as 12 HPS staff.

The report²⁰ of the inquiry into the fire (A Board of Inquiry into the Hazelwood Coal Mine Fire, appointed on 21 March 2014 and reporting on 29 August 2014) concluded that:

The cost borne by the Victorian Government for fire suppression activities alone was approximately \$32.5 million, not taking into account the value of volunteer labour and costs incurred directly by the community. This sum does not take into account costs incurred by the Environment Protection Authority, Department of Health, Department of Human Services, Department of Education and Early Childhood Department or Latrobe City Council. The CFA may seek to recover some of its firefighting costs from GDF Suez. The Board estimates the total cost borne by the Victorian Government, local community and GDF Suez exceeds \$100 million.

The inquiry heard that the government regulator had no contact with the mine managers about rehabilitation works in the five years leading up to the fire.

The inquiry gave a damning assessment of the mine’s fire preparedness and response:

- “GDF Suez was not adequately prepared for a fire of the kind, severity and complexity of the Hazelwood mine fire”;
- “instead of planning for the worst, mine management hoped for the best”;
- “all of the factors contributing to the ignition and spread of the fire were foreseeable... yet it appears they were not foreseen”;
- management failed to understand computer models on 8 February 2014 showing significant fire threat to the mine and “failed to fully appreciate the risks facing

the mine”;

- the initial response to the fire was “inadequate” and there was a failure to activate the mine’s Emergency Response Plan until more than an hour after the fire was first reported and management failed to liaise with emergency services, or to notify the CFA or request CFA resources for several hours;
- the mine “lacked readily available equipment”;
- “firefighting was significantly impeded by the fact that the reticulated fire services water system or ‘fire service network’ did not extend to large sections of the worked out areas of the Hazelwood mine”;
- “firefighting efforts were further impeded by fire damage to the two SP AusNet 66kV power lines that run across the northern batters of the mine” resulting in power loss to the two major water pumping stations, triggering a significant drop in water pressure in the fire service network and hampering the ability to fill up fire tankers with water;
- “there were no internal back-up power supply generators at the Hazelwood mine”; and
- there were “difficulties and delays in trying to access and navigate the mine”.

As well, from 1994–2007, “degraded or leaking pipework was progressively removed from the fire service network in worked out areas of the Hazelwood mine” and had not been replaced prior to February 2014. This and other shortcomings meant that there “was no preventive measure in place to protect the worked out areas from ember attack”.

The inquiry report says:

The strongest criticism the Board makes of GDF Suez is its failure to undertake a fire risk assessment of the worked out areas of the mine, including a cost/benefit analysis. Not undertaking this risk assessment was contrary to a recommendation made after the fire in the mine in September 2008.

The inquiry concluded that:

In not properly identifying hazards associated with a fire in the worked out areas of the Hazelwood mine and the risks to the Morwell and surrounding communities, GDF Suez fell short of its obligations under OHS laws. GDF Suez also failed to adopt reasonably practicable risk control measures to eliminate or reduce the health and safety risks associated with a fire in the worked out areas of the Hazelwood mine.

In addition, at government level there was “a gap in regulation of the Hazelwood mine in respect of fire risks with the potential to impact on Morwell and surrounding communities, such as that which manifested in 2014”. The Hazelwood mine fire was “a foreseeable risk that slipped through the cracks between regulatory agencies” and government agencies “did not intervene despite these kinds of risk [to the community] being entirely foreseeable.”

In May 2015, the new Labor government reconvened the inquiry to look at three specific issues and to report back on the Anglesea coal mine closure and fire risks by 31 August 2015, health and increased mortality issues associated with the Morwell fire by 2 December 2015, and Latrobe Valley mine rehabilitation options by 15 March 2016.²¹

OTHER INCIDENTS

There have been several disasters in the Hazelwood and Yallourn coal mines since 2006, which union representative Luke van der Meulen says are “all because of lax or non-existent regulation”.²²

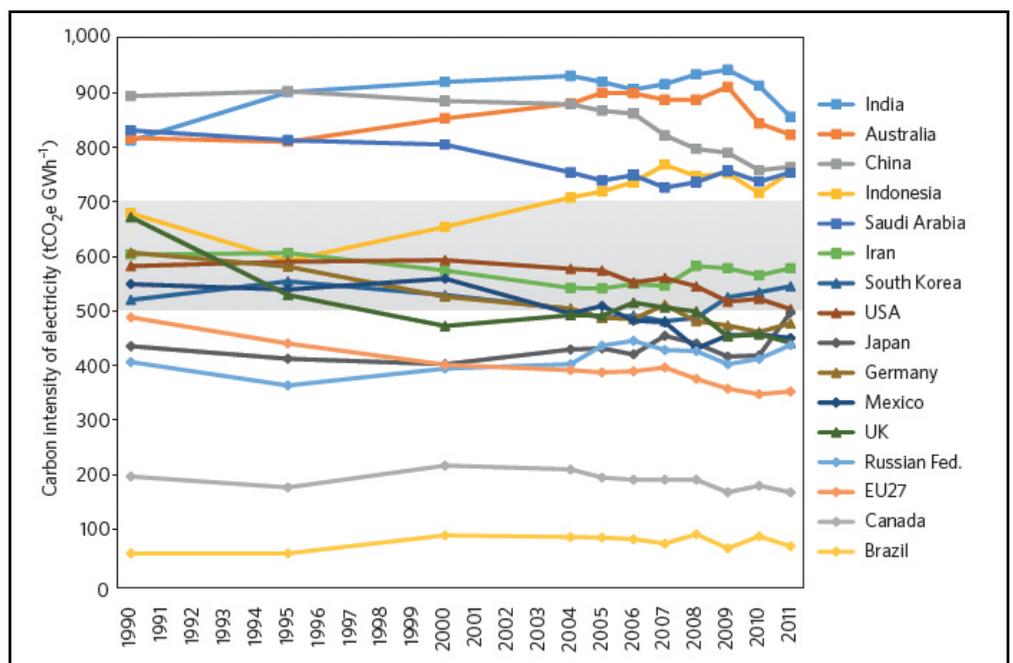
In the period 2001–2008, five significant Hazelwood fire events were notified to the Mining Regulator, and detailed at page 213 of the inquiry’s report.

Major events include:

- 2006 October: A large fire at the Hazelwood mine

Carbon intensity of electricity generation. The grey shading indicates the zone around the 0.6 t/MWh threshold. EU27 is the 27 member states of the European Union.

Data from *Energy Technology Perspectives 2014: Harnessing Electricity’s Potential* (IEA, 2014). <http://www.iea.org/Textbase/npsum/ETP2014SUM.pdf>





A view of the Hazelwood mine. The pit is 100 metres deep. Photo: John Englart

triggered by equipment failure damaged conveyors and caused a loss of generating capacity. An investigation found that a significant factor in the “escalation of a small fire into an uncontrollable fire within a short time [was] due to extreme weather conditions and the delay in [the mine owners] proving sufficient resources to combat the initial fire”. In addition, the internal audit of fire services facilities had not been completed, and fire training for the season had not been completed because October was not designated as part of the fire season. The level of damage was estimated at \$28,830,000 by the CFA. According to Prof David Cliff: “The previous fire in 2006 should have triggered a review of the safety management system in accordance with the requirements of Australian Standard AS4804 and the OHS regulations. The controls before 2006 and implemented as a result of that event are clearly not adequate.”²³

- 2007: The Latrobe River collapsed through Yallourn mine’s northern batters, flooding the mine.²⁴
- 2008: Hazelwood mine southern batters fire.
- 2011: Morwell River diversion collapse, closing Princes Freeway between the Hazelwood mine and Morwell residential areas for seven months.²⁵
- 2012-13: Latrobe River diversion collapsed, flooding Yallourn mine.²⁶ The water was still being pumped from the mine in June 2105.

MINE REHABILITATION

Mine rehabilitation (covering exposed coal seam in disused parts of the mine with topsoil and overburden, followed by revegetation) is a key issue because the failure to do so contributed to the scale of the 2014 and previous fires. The mine’s work plan includes some rehabilitation but the associated timeline is flexible, and it is a cost that does not in any immediate way increase profitability, so the owners seem intent on doing the minimum. Government oversight of the work plan has been poor.

The current rehabilitation bond – set at an “interim”

value of \$15 million in the mid-1990s – in no way reflects rehabilitation costs should the owners abandon the site. GDF Suez told the inquiry that costs to complete rehabilitation would be less than \$100 million, or about “\$80-something million”.

Environment Victoria submitted to the inquiry that:

Financial assurance calculations in Queensland mines suggest bonds of as much as \$483 million would be more appropriate for Hazelwood. The severe underestimation of rehabilitation costs and the level of the bond potentially creates a massive financial inability for Victorian taxpayers...

The CFMEU asked the inquiry: if adequate fire fighting infrastructure was introduced to unused section of the mine but rehabilitation was not carried out, then:

who will pay for the indefinite installation, maintenance and operation of this infrastructure long after the private power companies have abandoned these mines? In our assessment, rehabilitation is the best and only long-term workable solution... there are many fine examples of rehabilitation in the Latrobe Valley where batters have been infilled with overburden and topsoil...

Environment Victoria has proposed raising rehabilitation bonds to appropriate levels (and being held as cash bonds rather than bank guarantees) with interest payments used to support transition initiatives, and to raise the rate of coal royalties, with the proceeds being used for rehabilitation works. Their report estimates total rehabilitation costs at up to \$200 million for each of the three major mines in the Latrobe Valley.²⁷

In January 2015, Premier Andrews announced the re-opening of the 2014 inquiry to look into a reported spike in deaths and implementation of new fire management rules:

And if anyone doesn’t comply with this regime, any mine operator, well they do face penalties ranging from being breached and having to stop work at the mine, right through to substantial financial penalties, fines and ultimately losing their licences.²⁸

The updated terms of reference explicitly include mine rehabilitation and bonds, and Labor will require coal mines to report annually on rehabilitation progress. The energy

minister may require the licensee to enter into a further bond during the operation of the licence, if the minister considers that the existing bond is insufficient.

Environment Victoria responded:

The first Hazelwood inquiry heard clear evidence of the benefits of rehabilitation works in preventing mine fires, and rehabilitation must be a key feature of new fire prevention plans. It is essential that the re-opened Hazelwood Mine Fire Inquiry makes firm and clear recommendations to speed up rehabilitation works in brown coal mines.²⁹

According to the NSW Auditor-General, as of 30 June 2012 there were about 573 derelict mine sites in NSW (including gold and other minerals, as well as former coal mines). And only a small fraction of those derelict mines were being rehabilitated.³⁰

A poll in late 2014 found that large-scale and accelerated mine rehabilitation programme has community support. On 13 November 2014, the *Latrobe Valley Express* reported:

More than half of Latrobe Valley residents would swing towards a candidate advocating for accelerated rehabilitation of the region's ageing coal mine network at the g election. An automated 'robo poll' conducted by Essential Research in late October on behalf of Environment Victoria found 57 per cent of Morwell voters and 52 per cent of Narracan voters would be "more likely" to support a candidate who strongly supported "a policy to speed up rehabilitation work at coal mines". Sampling more than 400 residents in each electorate, the polling also found 91 per cent of Morwell voters were supportive of rehabilitation as a method to transform mines into safe and usable environments.³¹

Union leaders say the State government could unlock job creation in the Latrobe Valley if it forced operators to fast-track rehabilitation of disused mines:³²

Construction Forestry Mining and Energy Union mining and energy [division] president Luke van der Meulen has called on both major political parties to consider the economic and employment benefits associated with the large scale excavation projects, opportunities for which are "plentiful" and "ripe for the taking". "These jobs are there right now."

"We've got the people and the technology and the know-how, but it needs to start right now because it's going to take a long time."

Mr van der Meulen said if rehabilitation timelines were fast-tracked, the Latrobe Valley could enjoy a constant stream of job creation similar to the levels of employment seen during the eight-kilometre diversion of the Morwell River around the western end of the Hazelwood open cut. "There were hundreds and hundreds of people working on that job for years, it was simply massive; it's landscaping on a massive scale," Mr van der Meulen said.

"Rehabilitation is exactly the same, on top of all the bulldozers, front end loaders and excavators, there's the revegetation part – there's tree replanting, re-grassing and getting the ecological health back into the site.

"It's only morally right for this type of work to go to local workers, so they would have to be given first preference for the jobs. There's no point in governments throwing money into a region just for someone to come out of Melbourne and snatch it up," [Gippsland Trades and Labour Council secretary John] Parker said.

"We are always talking about transition industries of the future, but this is a legitimate transition opportunity for the Latrobe Valley right here and right now. It's about time Labor and [the Coalition] stopped blaming each other for what they didn't do while they were in power, and tell us how they are going to fix this place," he said.

"This is a major work that needs to get done, and will create a lasting legacy that generations can enjoy – if we do these things we can start putting value back into the Latrobe Valley environment, which people can one day appreciate again instead of it being a derelict wasteland."

WHO PAYS FOR REHABILITATION?

The licence conditions for Hazelwood power station include a requirement for the rehabilitation of the mine. Much of that work has not been done, and the current rehabilitation bond of \$15 million (being reviewed by the reconvened mine fire inquiry) is paltry compared to the cost. In 2010, an external audit put total close-down and rehabilitation costs at \$350 million.

Now the company is telling the government there is a very real limit on how much rehabilitation it can afford by way of bond. They have told unions that the long-term electricity-production cost (including proper maintenance, depreciation and interest) is over \$30/MWh, which has been higher than the wholesale price for considerable periods. As maintenance costs are reduced and the Hazelwood workplace risks increase, one message the company seems to be sending is that it cannot afford to shut down, or to maintain the plant to a high safety standard.

However, this misses the key point that the company is legally obliged to carry out the full rehabilitation works incorporated into the licence work plan. If it fails to do so, there should be legal recourse through the parent companies if necessary.

On the issue of costs versus income, a recent Citibank analysis found that "at forward wholesale power prices of about \$33 a megawatt-hour for the 2015-17 period, all the brown coal plants are cash positive with a healthy cash margin on a long run cost of about \$15/MWh."³³ This is half the cost the Hazelwood owners claim. As well, the wholesale price has increase significantly in 2015 to close to \$50/MWh. Other analyses have also found the brown-coal generators to all be cash-flow positive.

ECONOMIC TRANSITION AND NEW JOBS

The Latrobe Valley needs an economic transition plan and a strong jobs package because the move from coal to clean wind and solar renewable energy is now both urgent and inevitable. As already discussed, mine rehabilitation must be one key element in such a plan.

The need for “just transitions” has been a focus for environment and climate lobby and activist groups for some years, as have alliances with unions and union activists. In 2008, Greenpeace and the Centre of Full Employment and Equity published *A Just Transition to a Renewable Energy Economy in the Hunter Region Australia*.³⁴

The national grassroots climate action summits from 2009 onwards have emphasised just transitions with discussion sessions, speakers from unions and affected communities, and resolutions. Since at least 2009, activists and NGO campaigners have been meeting with both unions and community groups in the Valley, and continue to do so. Dan Musil has documented this often a rocky process, as “competing interests have brought various stakeholders into conflict and such conflict is seen as an impasse to decisive and effective action”.³⁵

In 2010, local government in the Latrobe Valley was given funds to develop transition plans. One such effort was the 2010 *Positioning Latrobe City for a Low Carbon Emission Future* report.³⁶

Just transitions are not easy work and, as everybody involved – including activists, researchers, unions and the EarthWorker Cooperative³⁷ and community groups – has found, it is easier to agree on the principle than develop specific, realistic, large-scale, on-the-ground initiatives that government will fund, as was the case with the campaign to replace coal generators at Port Augusta with a solar thermal plant.

Both union and community groups have emphasised the need for an economic transition plan in which they fully participate and which reflects their needs. In an interview, union leader Luke van der Meulen told ABC Radio National:

I think the debate about whether the closure is going to occur is over and what we've really got to do now is look at the impact on the workers in the community. And what we're really saying is [that] on this occasion, as different to last time when they privatised the industry, we want the community and the unions to be involved at the table, involved in the discussions. And the decision-making... when they privatised the industry we were saying then that there needs to be replacement industries in the Valley. We were talking about wind and solar then. And if the national and State governments had have got off their behinds then, then we could have had a whole range of different industries in the Valley that could help us out of this situation. These can be done, but there needs to be some real effort at a State and national level and that's not really being seen at all at the moment... We don't

think any compensation should be paid to Hazelwood until the community and worker issues are fully sorted out.³⁸

Wendy Farmer, Voices of the Valley president, says “We can't let the privatisation (of the SECV) and the destitution that it caused happen again.” In an open letter, Voices of the Valley says:

What we want is to ensure that we can transition to a cleaner, fairer economy in a way that won't further devastate our community. We urge transition plans to be in place before there's any move to shut down an industry – not just ‘talk’ of plans, but actual pathways with real resources and support. What we need are new opportunities and choices for Latrobe Valley people, not the ‘put up or shut up’ that we are offered by the companies that run our power stations, or those that demand that power stations must be immediately shut.

We believe that there are many things that could be done here to facilitate a transition to a better future, and to ensure that the inevitable closure of Hazelwood doesn't leave us high and dry. Local people themselves have invaluable knowledge and ideas. Allowing Latrobe Valley people to articulate how a transition could work, and what to transition to, is a key challenge.

Driven by local volunteers, Voices of the Valley have built a strong presence in the past year. We are currently succeeding in getting high-level attention on the issues of health, pollution monitoring and reporting. We believe that tightening air quality standards could provide positive outcomes for local people and the climate. We would like the chance to push for and create new opportunities and industries here. Any assistance with these goals would be warmly welcomed and appreciated.

Voices of the Valley are prepared to work with any groups who also want to help our community move toward a better future. We are willing to meet, talk, collaborate and cooperate. But this can only happen if others are willing to appreciate and work in ways appropriate to our local context, concerns and aims.

Tom Doig, author of the book *The Coal Face* which tells the Hazelwood mine fire story, says replacing Hazelwood is both an environmental and social justice issue:

Obviously for people in the Valley in particular, it's confronting and potentially disturbing when environmentalists start talking about closing down Hazelwood, and it's easy and justifiable to say, ‘What is the transition plan?’... I support the closure of Hazelwood as long as it is done in tandem with a well thought out transition plan to creating jobs in the region, and mine rehabilitation is a massive one.³⁹

There is also a larger question of labour and skill management during the great transition. The world is hurtling towards a climate abyss: there is no carbon budget left for limiting warming to 2°C. Many climate change impacts are happening more quickly than most

FUNDING THE JOBS TRANSITION

From 2016, a steady flow of income from the electricity sector of around \$100 million per year is available to fund new jobs and industries in the Latrobe Valley. Here's how.

As an inducement to Alcoa to establish an aluminium smelter at Portland, the Victorian Government in 1984 offered a large subsidy on electricity prices to run for 30 years, from the opening of the smelter in 1986 till 2016.

This superseded an older deal that had run since 1962. The discount was up to 50 per cent on prices available to other industrial users. The two smelters at Portland and near Geelong were using up to 25 per cent of Victoria's power production. The Geelong refinery has already closed, and the deal expires next year.

The subsidy was pegged to the world price of aluminium: the weaker the price, the greater the subsidy. The value of the deal is secret, but has been estimated to have cost Victorians \$4.5 billion.⁴² Since the privatisation of the State Electricity Commission (SECV) in 1998, the deal has been financed by a land tax levy on the electricity distributors' property under transmission lines. *The Age* reported in 2009 that: "Coupled with special levies and taxes on electricity consumers, imposed by the Kennett and Bracks governments to cover the subsidies, the public bill for the contracts by 2016 would be closer to \$6 billion."⁴³ There are also reports that the deal cost \$1.022 billion in subsidies in the period 1986-1995, and \$915.8 million from 1997 to 2006.

In March 2010, Loy Yang A power station signed a contract to supply electricity to power the Portland aluminium smelters until 2036.

In 2014, Fairfax business editor Mathew Dunkley wrote that:

scientists projected, and positive feedbacks are already becoming materially important, from the Arctic to the Antarctic.⁴⁰

We now face a global climate emergency that requires a global emergency response, as French Environment Minister Ségolène Royal recently recognised.⁴¹ More people are accepting this proposition, but wonder whether we can gather the social and political will to make it happen.

If we are really going to get beyond the brown economy, what will industries look like? Take the travel industry, as one example. The idea that the growing overload of international air travel can be zero carbon through efficiency and biofuels is unsupportable. So is the notion that such activity would be a social priority in an energy-constrained world (especially for liquid fuels) and

a useful starting point for the calculation would be the \$100 million a year the government levies on the land under power lines to help pay the state's liability to the global aluminium giant. Treasurer Michael O'Brien confirmed this in a statement, saying the average subsidy in the past three years was \$90 million.⁴⁴

After privatisation, the deal was administered by the corporate shell of the SECV. In October 2013, the *Australian Financial Review* reported that Victorian State Government accounts for 2012-13 showed:

the government pocketed \$350 million from the SECV as a special dividend. The SECV is a corporate shell that largely administers the state's electricity contracts with Alcoa. This dividend stemmed from the SECV's trading activities and was quietly banked against the 2012-13 financial year when the 2013-14 budget was announced in May.⁴⁵

Since the SECV's only significant role is collecting revenue, and paying, for the Alcoa deal, it seems in some years the profit was banked by the government. At the very least, this is a clear precedent for SECV revenues in excess of costs being passed back into the State budget.

Union sources say that the wages bill at Hazelwood is just over \$100 million a year. The evidence above suggests that the revenue-raising measures associated with the Alcoa subsidy are around the same amount.

When the Alcoa subsidy ends in 2016, there is a perfect opportunity for the monies of \$100 million a year to be switched to new job and industry-creation initiatives in the Latrobe Valley as brown-coal generating capacity is reduced.

When the Alcoa subsidy ends in 2016, there is a perfect opportunity for the monies of \$100 million a year to be switched to new job and industry-creation initiatives in the Latrobe Valley as brown-coal generating capacity is reduced.

in the midst of a huge transformation. The same analysis could apply to Australian universities and their reliance of air-travel-dependent international student income, or the

air-transport-dependent global soft fruit, vegetable and flower industries. And these examples are just the tip of the iceberg.

The question of acting on climate change and the jobs consequences is huge. It requires a workforce planning and management strategy similar to those employed by governments in the past at times of huge, abrupt change, such as at time of war. Working for a just transition also means working for a national climate and energy workforce strategy.

OPTIONS FOR CLOSURE

International Power rejects any proposal to introduce climate change policy, under the guise of energy efficiency measures, which has the potential to destroy the value of existing investments in the generator sector.⁴⁶

Excess capacity in the electricity market driven by energy efficiency and more renewable energy has been holding down wholesale power prices. Owners such as AGL and Origin – with vertically-integrated operations (and customer bases) and with less ancient and lower-polluting plant – have been lobbying government to take excess capacity out of the market. But governments have so far been unwilling to intervene and/or subsidise such action.

One problem is that although Latrobe Valley generators are more polluting and two of the three facilities are the oldest in Australia, they have lower costs than black coal and gas generators and would survive any market-based rationalisation in the absence of a carbon price or trading scheme.⁴⁷

Senior State bureaucrats in the energy department are aware of the need to close down coal in order to roll-out renewables. The question is by what mechanism: plant age, emissions standards or some other measure?

Victorian Premier Daniel Andrews has flagged the capacity and willingness of the government to modify and/or cancel HPS's licence.

The terms of reference for the reconvened inquiry and government statements indicate it is likely that the government will increase the rehabilitation bond from the current level of \$15 million. As discussed above, total rehabilitation costs will be several hundred million dollars. The 2014 fire cost \$100 million, including \$32 million borne by the State government for fire suppression costs alone.

The State government has a strong case for recouping those costs, in addition to increasing the rehabilitation bond. The state has borne a wide range of costs related to the operation of Hazelwood, apart from the 2014 fire. These include costs associated with the Morwell River diversion collapse and the closure of the Princes Freeway for seven months and other prior incidents, asbestos issues, the costs of inquiries, and elevated care costs for Morwell and Latrobe Valley communities associated with both the 2014 fire and increased incidents of some chronic health conditions in the region over a long period.

As well, legal recourse to compensate residents for the physical and emotional costs of the Morwell fire could be launched if HPS could be shown liable under Victorian law for having failed to comply with mining and environmental law. Prof. Samantha Hepburn of Deakin University says that:

GDF Suez could also be liable under Victoria's Environment Protection Act. If the environment is polluted as a result of a discharge, emission or deposit of any substance from mining premises, the occupier will be deemed to have caused the pollution.⁴⁸

Could the licence be withdrawn without compensation if it can be demonstrated that the terms of the licence have been significantly breached, for example in relation to the 2014 fire? The inquiry concluded that:

On the evidence before the Board, GDF Suez is currently compliant with its obligations under the Mineral Resources Act and related regulations, as well as the conditions specified in its current mining licence, approved work plan and approved rehabilitation plan.

However it expressed concern in relation to some compliance issues, which fell into a "grey" area, and found that: "The Board is not satisfied that GDF Suez has complied with r. 5.3.7 of the OHS Regulations."

EMISSION STANDARDS

An emissions performance standard (EPS) is a specific limit to the amount of pollutants that can be released into the environment, usually per unit of production. An EPS can regulate pollutants released by automobiles and other powered vehicles, and small equipment such as lawn mowers and diesel generators, but they can also regulate emissions from industry and power plants. Whilst several States have an EPS for new power stations, none do so for existing plant.⁴⁹

Analysis from Bloomberg New Energy Finance finds the United States will shut seven per cent of its coal power capacity this year:

This is because a new Mercury and Air Toxics Standard will take effect... This has acted to bring to a head the demise of aging power plants, with owners unwilling to invest substantial funds to control their air pollutants. On top of the 23 GW of closures they expect this year will be a further 30 GW shut before 2020.⁵⁰

Emphasis has been placed on regulating HPS emissions such that the owners would have a choice of investing in low emissions technology, or closing the plant. In 2010, then Victorian Premier Brumby declared:

the Bill provides the reserve power to regulate emissions from existing brown coal-fired generators if a negotiated phase down cannot be achieved.⁵¹

In introducing his 2010 climate bill, Brumby said:

As a first step following the passage of this bill, it is intended that the Environment Protection Authority will use this power to set an emissions intensity standard for new power stations. The government is proposing a standard of 0.8 tonnes of carbon dioxide equivalent per megawatt hour (tCO₂/MWh), which will prevent the construction of any new power stations based on conventional brown coal technologies. The introduction of the standard will be subject to public and industry consultation, and an assessment of economic and social

impacts.

These amendments to the Environment Protection Act will also clarify that regulations may be introduced that set a greenhouse gas ‘trigger’ to require licensing and works approvals for general industrial and commercial sites that are large emitters and energy users. This will enable the government to ensure that best practice standards and technologies are used by Victorian industry — giving our businesses an edge in a low-carbon economy and avoiding ‘locking in’ inefficient, long-lasting technologies.

Any changes in this regard will also be subject to consultation through regulatory impact statements or equivalent processes. This power may be used for other purposes in the future, such as establishing emissions standards for existing power stations — with the aim of moving Victoria’s brown coal generators into line with international best practice and providing a strong investment signal to upgrade technology. Again, any new standards in this area will be subject to full public consultation and regulatory impact statements.⁵²

By way of comparison, the US EPA emissions standards proposed by the Obama administration for existing plant average about 0.5tCO₂/MWh by 2030.⁵³ Recent research finds that for the 2C° goal, and to reduce greenhouse-gas emissions in the short term and catalyse longer-term cuts, countries should reduce the carbon intensity of electricity generation to below a universal target 0.6tCO₂/MWh by 2020.⁵⁴ This is less than half of Hazelwood’s emissions intensity.

So does the minister or EPA currently have the power to regulate emissions above 0.8tCO₂/MWh?

The 0.8tCO₂/MWh standard was removed by Baillieu government amendments in 2012.⁵⁵ However the EPA would be able to regulate emissions if appropriate legislation for an environment protection policy (including CO₂ emissions standards) is passed by Parliament, and that failure to conform to the standard would be a sound basis for withdrawal of licence.

In a draft of his climate review report, economist Prof. Ross Garnaut noted that:

Government does not generally compensate for loss of asset value because of the internalisation of an environmental externality. Past cases where a taken right was removed without compensation include policy changes applying to asbestos and tobacco.⁵⁶

Germany has revealed plans to force the closure of the nation’s oldest and dirtiest coal power plants by introducing measures that would allow coal plants to produce no more than seven million tonnes per gigawatt of installed capacity, with fines of \$A25-28/tonne over that.⁵⁷ By way of comparison, that would set a benchmark for Hazelwood of less than 11 million tonnes of CO₂ per year, compared to present pollution of 16 million tonnes of CO₂ per year.

POSITION ON CLOSURE

In September 2008, International Power itself flagged that the Hazelwood plant could be shut down, subject to the negotiation of adequate compensation. In a submission on the federal government’s then Carbon Pollution Reduction Scheme (CPRS), International Power Australia’s Executive Director Tony Concannon stated that the company supported measures that would result in the closure of the most polluting power stations on the provision that they “are compensated for the full loss of asset value.”

The company estimated that the pre-CPRS asset value of both the Hazelwood and Loy Yang B power stations was “over \$4 billion”, but this was disputed by environment groups, particularly in light of the Commonwealth Bank decision in 2010 to write down the value of its shareholding in HPS from \$24 million to \$1 million.⁵⁸ Other Latrobe Valley generators have been resold at a small fraction of their privatisation price.

On 28 July 2010, the AFR reported (“Hazelwood owners want closure”) an International Power spokesperson as saying the company would rather work with the federal government to close down eight turbines than the two proposed by the Brumby government.⁵⁹



Federal MP for Wills Kelvin Thomson at CERES environment park, 2012



Bike commuters take a message to local MP at Climate Action Moreland event, May 2105. Photos John Englart.

REPLACE HAZELWOOD CAMPAIGNS

Campaigns to replace HPS have built since 2005 with a number of campaigns and direct actions. A large civil-disobedience rally, the largest of its kind at any Australian power station, was undertaken on 13 September 2009, when an estimated 500 people participated, with many camping nearby on the previous night.

Protestors breached the newly installed security fence and 22 people were arrested, many for illegally trespassing on Hazelwood property. Many protesters were officially charged and subsequently were recipients of diversion orders and various fines.

After the September 2009 rally, the Victorian Labor energy minister unveiled laws designed to protect the brown coal-fired power stations from protests. The Electricity Industry Amendment (Critical Infrastructure) Bill created two new offences. If a person is found on a power station's land or premises without authority they can go to jail for a year. And if a person damages, interferes with "or attaches a thing" to the power station's equipment, they risk two years' jail. For this offence, the person must be found "reckless" in relation to whether their act will result in disrupting electricity supply.⁶¹

The 2009-2010 "Switch off Hazelwood" and "Replace Hazelwood with clean energy" campaigns brought together a broad and diverse coalition, which focused attention on the issue in the lead-up to the November 2010 state election. The campaign framed Hazelwood as a test of the Labor state government's climate credentials.

The issue received sustained media coverage and broad public support, with many events including protests on parliament steps, a second rally at Hazelwood, and climate action groups in inner-north seats and elsewhere conducting an extensive door-knocking campaign which reached several thousand households and amplified internal Labor concern that seats could be lost.

The political terrain at the time was well analysed by Melissa Fyffe in *The Age* on 16 May 2010 in "Bearding the dragon".⁶²

The Labor cabinet agreed to a policy of phased closure of Hazelwood, which was announced in *The Age* on 10 July 2010.⁶³

Coal Swarm reported the events:

In the run up to the 2010 election the then Brumby Labor government sought to blunt the rising voter support for the Greens by proposing the shut down of part of the Hazelwood power station and released *Taking Action for Victoria's Future*, a climate change White Paper. In its White Paper, the Brumby government committed to cut greenhouse gas emissions by 20 per cent by 2020. 'The most cost-effective way to clean up our environment and achieve this reduction in greenhouse gas over the next four years is to close two of the eight units at Hazelwood Power Station,' Premier Brumby stated.⁶⁴

The Victorian Climate Change Bill was introduced into Parliament on 27 July 2010, and amended the Environment Protection Act 1970 (Vic) to allow for the imposition of a target emissions level for new power stations and to enable the regulation of large emitters.

The Victorian Labor government narrowly lost the November 2010 election before it could begin negotiations with the power station owners.

In September 2008, International Power flagged that the HPS could be shut down subject to the negotiation of adequate compensation. In 2012, the federal government abandoned its Contract for Closure Program without entering into serious negotiations with the HPS owners.

In the lead-up to the 2014 Victorian election, a commonly-agreed platform for Victorian climate groups and NGOs included:

Planning for the orderly phase-out of our oldest and dirtiest power stations starting with Hazelwood, Yallourn and Anglesea power stations.

During 2014, the Labor Party opposition in Victoria refused to rule out new or expanded fossil fuel projects including further coal allocations or the development of an unconventional gas industry. Nor did it make any commitment to close down any existing coal generating capacity, unlike its stand in 2010.

In January 2015, the Andrews government announced that the 2104 mine fire inquiry would be reopened to look into a reported spike in deaths and consider options for the mine's rehabilitation.

LABOR IN 2010

Labor’s 2010 climate change White Paper stated:

Victorian Government will reserve the right to consider regulating emissions from existing brown coal-fired electricity generators if agreement on a phase down cannot be negotiated and a national carbon price is not in place.⁶⁶

Premier John Brumby called HPS Australia’s “dirtiest and most polluting power station”.⁶⁷

Speaking to ABC radio to Jon Faine in July 2010, Brumby explained his Hazelwood policy:

Brumby: I’m not sure of the point of the caller’s question... either you believe in closing Hazelwood or you don’t, and I do. And so what I announced yesterday was a staged closure of Hazelwood with the first two units – they have eight units, it’s the dirtiest power station in Australia, most commentators by the way, if you’ve read the Financial Review this morning they would say it’s probably the dirtiest anywhere in the world – and I’ve put forward a plan that we will have a staged closure of it.

Faine: But you don’t have the money to pay for it?

Brumby: Well, we do actually, so we have a strong economy and a strong budget position, so as I said yesterday releasing this policy John, our Government in Victoria is in a position to take leadership on climate change in large part because we have managed the budget and the economy well and we can afford to make these changes. But as I said yesterday, if you want to do this job properly it will require a partnership between our government, the Federal government and negotiations with International Power, so what I announced yesterday is a clear defined strategy with a staged closure.⁶⁸

On 10 July 2010, *Stock and Land* reported:

Cut emissions or else, says Brumby

Victoria has threatened to use its environmental regulatory powers to force big carbon emitters to reduce

greenhouse gas emissions if negotiations over planned shutdowns fail.

A policy document published by the government this week promised to reduce carbon emissions by 20 per cent on 2000 levels by 2020.

It also backed a national price for carbon as the best means to achieve the carbon-reduction goal and flagged it would seek to negotiate a phased shut down of the emissions-intensive Hazelwood power station.

Victorian Premier John Brumby used a second-reading speech of his government’s climate change bill in Parliament yesterday to detail how his government could use the Environmental Protection Agency to regulate emissions in the absence of a carbon price or if negotiations with the owners of Hazelwood, International Power, stalled.

“While the government has already commenced preliminary discussions with International Power and other stakeholders in Hazelwood about our commitment to a staged closure of Hazelwood, the Bill provides the reserve power to regulate emissions from existing brown coal-fired generators if a negotiated phase down cannot be achieved,” he said.⁶⁹

THE GREENS

In the lead up to the 2014 state election, the Victorian Greens announced a policy to phase out Hazelwood, Anglesea and one of Yallourn’s four units in 2015, and the other three units of Yallourn and Loy Yang B by 2023. The Greens said their plan will require amendments to the Electricity Industry Act 2000 or require the minister to withdraw generation licences, and that:

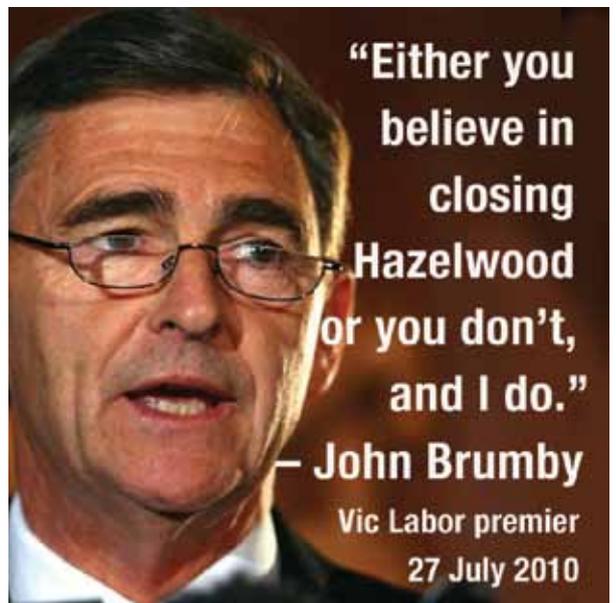
The Greens plan would re-boot Australia’s inevitable transition to a clean energy system without taxpayer handouts.⁷⁰

The policy says a steady stream of local jobs would be created in the Latrobe Valley and Anglesea as the rehabilitation of mines and decommissioning of power stations requires a significant workforce stretching well



“We have a plan for the first phase-down of brown coal in Australia, ever... We are the only party with a specific plan and timeline for the closure of Hazelwood.”⁶⁵

Jane Garrett, Victorian emergency services minister and Brunswick MP, in 2010



over a decade:

Rehabilitating coal mines and decommissioning generators is full of jobs-rich potential if done under a planned and staged program.⁷¹ A majority of Latrobe Valley residents and the local CFMEU want rehabilitation plans brought forward.⁷² The Greens are determined to create these jobs now. Mine rehabilitation across the Latrobe Valley, according to Environment Victoria would create around 450 skilled and unskilled jobs for more than a decade and provide a billion dollar economic stimulus to the region.⁷³

On 20 November 2014, federal Greens leader Christine Milne announced the launching of “a two-pronged federal and State push to phase out Victoria’s dirty coal, while using funds from the Commonwealth’s Building Stronger

Regions Fund to deliver a jobs taskforce.”⁷⁴

On 23 January 2015, *The Age* reported:

The Victorian Greens will use their upper house clout to push for the closure of the Hazelwood power station, claiming it is a risk to the community and no longer needed. Greens MP Ellen Sandell said Hazelwood was one of the dirtiest coal plants in the world and should be closed.⁷⁵

Green MPs Ellen Sandell and Adam Bandt have announced they are making Replace Hazelwood a focus of their work for the year and are “calling on the government to replace Hazelwood with clean energy and to support a community-led transition plan for mine rehabilitation and job creation”. A Greens-initiated rally was held on Parliament House steps on 16 April.⁷⁶

COMMUNITY CAMPAIGNING

Political parties will pay a rising price for a failure to plan the phased closedown of the coal industry in the face of escalating climate change and extreme events, especially as the climate movement adopts a community-organising model focused on building direct political power.

A year-long review has resulted in many key players in the climate movement moving to align strategy, improve communications, revitalise grassroots constituencies, and build electoral power by adopting new models of face-to-face campaigning that build on recent experiences in state elections and overseas lessons.

Climate and clean-air groups, both big and small, have a long history of campaigning on dirty coal and view the closure of power stations such as Hazelwood and Anglesea as a significant step in building a zero-emissions economy. Friends of the Earth says that:

The full closure of Hazelwood would be a profound act on at least two levels. It would be a powerful symbol that Victoria is now finally shifting from its historic reliance on coal, and would remove about 12 per cent of our greenhouse emissions.⁷⁷

Environment Victoria continues a strong focus on Hazelwood, with attention given recently to the fires inquiry, and reports on mine rehabilitation and the social cost of Hazelwood.

Significantly, Australia’s largest environmental NGO, the Australian Conservation Foundation, has indicated it will give more focus to Hazelwood and Australia’s biggest polluters than previously. In launching its new strategy in 2015 and a report on *Australia’s Top 10 Polluters*, ACF made it clear that:

The Federal Government must start planning how it is going to retire the most polluting and out-dated coal plants and replace them with clean energy.⁷⁸

Writing in *The Australian*, ACF President Geoffrey Cousins reiterated that: “We must consider how to start retiring the most polluting and outdated coal plants and replacing them with clean energy...”.⁷⁹ And ACF CEO Kelly O’Shanassy told *The Guardian*:

It’s not going to work anymore to be just quietly asking governments to do the right thing. So the purpose of this report is to say – we are going to hold you to account and we are going to go out to all Australians and build a huge constituency in this country to make sure you do what Australians want you to do. If governments put the interests of polluters above those of Australians then we need to start to grow a force to support clean energy, not coal. This is definitely a shift in our focus... We respect the role of politicians, but we don’t think they are doing enough. There’s a great saying that the power of the people is greater than the people in power. I think the people in power forget that sometimes. We are going to remind them.⁸⁰

As well, Australia’s emissions reduction performance and goals will come under increasing scrutiny, both at home and abroad, in the lead up to the 2015 UN climate change conference in Paris in late 2015. The climate movement will be one of several players pointing to Australia’s poor performance and the responsibility of federal and state government to work together to close down old, dirty, sub-critical coal power stations.

Recent media reporting on the coal industry crisis and power station closures has stepped up with the release of various reports, but also because in business and political circles there is growing recognition that the coal industry is becoming too hot to handle.

IT'S OVER FOR COAL

Coal's lustre is rapidly fading as its social licence degrades, and a crisis of overproduction results in plummeting prices⁸¹ and mine closure in Australia, with 50,000 jobs in all mining including coal lost in the last three years.

Business Spectator, under the headline "A coal giant on the ropes", says that US-based Peabody, the world's largest private pure-play coal mining company by volume, reported a year-to-date net loss of \$US272 million, following a net loss of \$US955 million in 2013 and \$US432 million in 2012. Its shares are down 62 per cent over the last two years relative to the S&P 500 index.⁸²

BHP is halving its exposure to coal by moving some mines to a spin-off company (South32) that is made up of holdings BHP no longer wants. Rio has signaled a move away from coal mining. *Renew Economy* concludes that:

The takeaway in sum is that five of the world's largest mining conglomerates are rapidly reducing their coal exposure as the horses bolt the burning barn.⁸³

A new report, *Boom and Bust: Tracking The Global Coal Plant Pipeline*, shows that, around the world, two-in-three proposed new plants are not being built. In China, coal use fell in 2014 for the first time in 14 years, while the economy grew by 7.3 per cent. From 2003 to 2014, the amount of coal-fired generating capacity retired in the US and the EU exceeded new capacity by 22 per cent.⁸⁴ Experts are

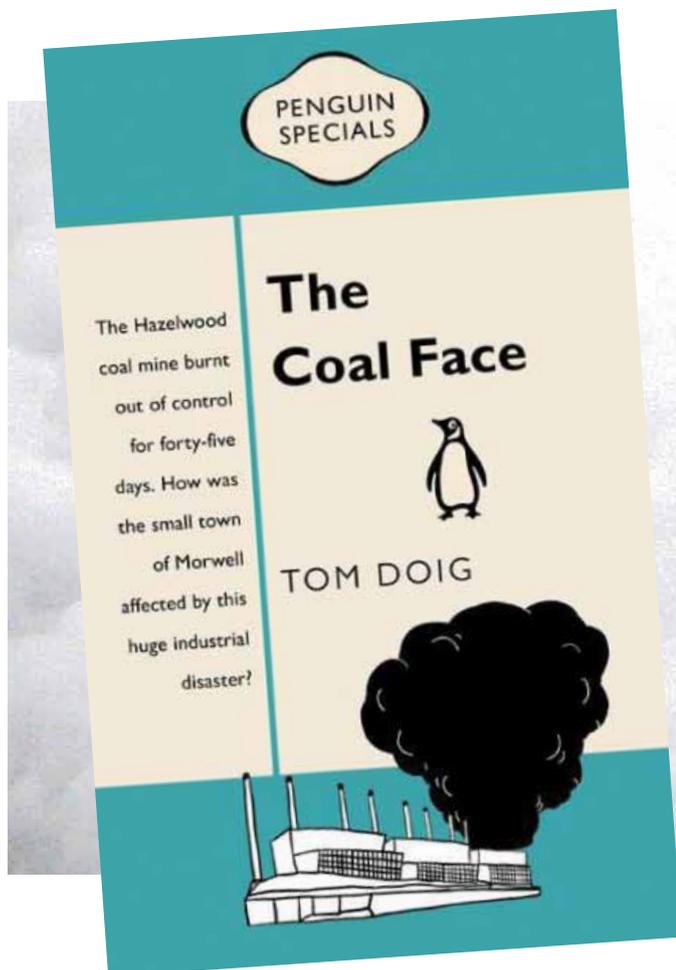
warning that China is "past peak coal".⁸⁵

Increasing international focus is being given to the old, dirty and inefficient character of Australia's coal generators. A recent report from Oxford University's Stranded Assets Programme identifies the 100 global power companies most at risk from growing pressure to shut highly polluting coal plants.⁸⁶ The analysis, produced to help investors assess the risk of major financial losses, also found Hazelwood majority owner Engie was third in the list of most polluting coal station fleets in the world.

The report identified the most-polluting, least-efficient and oldest "sub-critical" coal-fired power stations. It found 89 per cent of Australia's coal power station fleet is subcritical, "by far" the most carbon-intensive sub-critical fleet in world.⁸⁷

The International Energy Agency calculates that one in four of these sub-critical plants must close within five years, if the world's governments are to keep their pledge to limit global warming to 2°C. This means that 22 per cent of Australia's coal power station fleet must close within five years if we are to play an equitable part in keeping to government pledges to limit global warming to 2°C.

Pressure will build on national and State governments respond to this need. Will they start closing down power stations, or throw in the towel?



'The smoke got thicker and darker and then it seemed to be coming from everywhere, swirling around until it blanketed the entire town...'

On 9 February 2014 a fire took hold in Victoria's Hazelwood coal mine next to Morwell and burned for one and a half months. As the air filled with toxic smoke and ash, residents of the Latrobe Valley became ill, afraid – and angry. Up against an unresponsive corporation and an indifferent government, the community banded together, turning tragedy into a political fight.

Tom Doig reveals the decades of decisions that led to the fire, and gives an intimate account of the first moments of the blaze and the dark weeks that followed. *The Coal Face* is a gripping and immediate report of one of the worst environmental and public health disasters in Australian history

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NOTES

1. http://www.theclimategroup.org/_assets/files/Generation-Report-2007-2010.pdf
2. <http://energynewsletterturkey.blogspot.com.tr/2014/04/hazelwood-morwell-australia.html>
3. http://www.wwf.org.au/news_resources/?2320/hazelwood-tops-international-list-of-dirty-power-stations
4. <http://www.theage.com.au/environment/climate-change/emissions-from-power-sector-still-climbing-as-coal-use-rises-20150303-13twq8.html>
5. <http://www.climatecodeled.org/p/myth-and-reality.html>
6. <http://www.climatecodeled.org/2015/02/two-degrees-of-warming-closer-than-you.html>
7. <http://www.aemo.com.au/Electricity/Settlements/Carbon-Dioxide-Equivalent-Intensity-Index>
8. <http://web.archive.org/web/20080719151643/http://www.aboutcarbon.com.au/Display.aspx?tabid=2546>
9. <http://www.npi.gov.au/npidata/action/load/emission-by-individual-facility-result/criteria/state/VIC/year/2013/jurisdiction-facility/00004337>
10. http://en.wikipedia.org/wiki/Hazelwood_Power_Station#Asbestos
11. <http://environmentvictoria.org.au/index.php?q=media/repeat-offender-documents-highlight-hazelwood-environmental-breaches>
12. "Cleaning up Victoria's Power Sector: the full social cost of Hazelwood power station", by Jordan Ward and Mick Power, <http://environmentvictoria.org.au/sites/default/files/Hazelwood%20Report%20Social%20cost%20of%20carbon.pdf>
13. <http://environmentvictoria.org.au/newsroom/report/cleaning-victoria%E2%80%99s-power-sector>
14. <http://www.smh.com.au/federal-politics/political-opinion/wrong-to-dismiss-the-dirt-on-hazelwood-20101105-17hei.html>
15. <http://www.aemo.com.au/Electricity/Planning/Electricity-Statement-of-Opportunities>
16. <http://www.aemo.com.au/News-and-Events/News/2014-Media-Releases/NEM-Electricity-Demand-Continues-Downward-Trend>
17. <http://theconversation.com/the-case-for-shutting-down-hazelwood-power-station-some-facts-and-figures-7940>
18. This section drawn from submissions to and report of the royal commission <http://report.hazelwoodinquiry.vic.gov.au/>
19. <http://www.abc.net.au/worldtoday/content/2014/s3955568.htm>
20. <http://report.hazelwoodinquiry.vic.gov.au/executive-summary/hazelwood-mine-fire>
21. <http://www.abc.net.au/news/2015-05-26/hazelwood-inquiry-reopened-to-examine-deaths-related-to-morwell/649823>
22. <http://www.theage.com.au/victoria/gdf-suez-rejects-claims-it-was-not-prepared-for-morwell-fire-20140304-345bq.html>
23. <http://theconversation.com/victorias-coal-fire-poses-a-rare-challenge-for-firefighting-23698>
24. http://www.sourcewatch.org/index.php/Yallourn_mine
25. <http://environmentvictoria.org.au/index.php?q=media/vic-freeway-closed-amid-landslip-fears>
26. <http://www.smh.com.au/environment/weather/floodwaters-pour-into-coal-mine-but-power-supplies-safe-minister-20120606-1zv5e.html>
27. http://issuu.com/environmentvictoria/docs/preventing_the_preventable_final
28. <http://www.theage.com.au/victoria/greens-to-use-upper-house-numbers-to-seek-closure-of-hazelwood-power-station-20150123-12wzyx.html>
29. <http://environmentvictoria.org.au/media/environment-victoria-statement-hazelwood-coal-mine-fire-one-year>
30. <http://theconversation.com/disused-mines-blight-new-south-wales-yet-the-approvals-continue-39059>
31. <http://www.latrobevalleyexpress.com.au/story/2692356/mine-rehab-an-election-winner/>
32. <http://www.latrobevalleyexpress.com.au/story/2543151/jobs-ripe-for-the-taking/>
33. <http://www.afr.com/business/nsws-vales-point-power-plant-seen-vulnerable-if-ret-deal-is-struck-20150514-gh198d>
34. http://www.resourcesandenergy.nsw.gov.au/energy-consumers/solar/sustain-renew-fit-subs/sustain_renew_fit_subs_greenpeace_australia_pacific_attach_a.pdf
35. Dan Musil, "Greenies vs Coal Communities? – Geographies of deliberation in Victorian climate change and energy debates", Bachelor of Arts (Honours) thesis, University of Melbourne
36. http://www.latrobe.vic.gov.au/Our_Community/Transition_to_a_Low_Carbon_Economy
37. <http://earthworkercooperative.com.au/>
38. <http://www.abc.net.au/radnational/programs/nationalinterest/down-and-dirty-the-stoush-over-hazelwood-power/2988246>
39. <http://www.latrobevalleyexpress.com.au/story/3021868/push-to-shut-down-hazelwood/>
40. <http://www.climatecodeled.org/2015/04/its-time-to-do-math-again.html>
41. http://www.lemonde.fr/planete/article/2015/06/01/segolene-royales-negociations-de-l-onu-sont-totalement-inadaptees-a-l-urgence-climatique_4644359_3244.html
42. <http://www.theage.com.au/environment/secretcy-on-aluminium-subsidies-to-remain-20091126-juon.html>
43. <http://www.theage.com.au/national/smelters-costing-us-45-billion-20091016-h17r.html>
44. <http://www.afr.com/business/manufacturing/alcoa-subsidies-cost-victorians-billions-20140218-ixrh7>
45. http://www.afr.com/p/national/dividends_and_windfalls_inflate_bCF03hjQ3nJ8DCSIWNNh
46. <http://www.theage.com.au/victoria/hazelwood-to-resist-energy-efficiency-bid-20100519-vfmx.html>
47. <http://www.afr.com/business/nsws-vales-point-power-plant-seen-vulnerable-if-ret-deal-is-struck-20150514-gh198d>
48. <https://theconversation.com/stronger-laws-needed-to-prevent-another-hazelwood-coal-mine-fire-24215>
49. http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BN/1011/PerformanceStandardsemisions
50. <http://www.businessspectator.com.au/article/2015/4/10/energy-markets/grim-and-grimmer-analysts-deliver-double-blow-coal>
51. <http://www.stockandland.com.au/news/agriculture/agribusiness/general-news/cut-emissions-or-else-says-brumby/1899959.aspx>
52. Parliament of Victoria, Parliamentary Debates (Hansard), Legislative Assembly, Thursday 29 July 2010
53. <https://www.federalregister.gov/articles/2014/01/08/2013-28668/standards-of-performance-for-greenhouse-gas-emissions-from-new-stationary-sources-electric-utility>
54. http://www.nature.com/nclimate/journal/v5/n3/full/nclimate2494.html?WT.ec_id=NCLIMATE-201503
55. <http://www.theage.com.au/victoria/no-emission-limit-on-new-coal-plants-20120327-1vwmu.html>
56. <http://www.garnautreview.org.au/CA25734E0016A131/pages/draft-report-chapter-20.html#20A>
57. <http://reneweconomy.com.au/2015/germany-to-force-closure-of-oldest-dirtiest-coal-plants-95632>
58. <http://www.smh.com.au/environment/bank-slashes-value-of-share-in-hazelwood-20101026-172dr.html>
59. <http://environmentvictoria.org.au/media/hazelwood-owners-want-closure#.VPz1GaDqiA>

60. <http://www.theage.com.au/comment/why-dan-andrews-should-close-the-hazelwood-power-station-20150524-gh6ynv>
61. <http://www.theage.com.au/federal-politics/a-show-of-power-20091024-he1f.html>
62. <http://www.theage.com.au/federal-politics/political-opinion/bearding-the-dragon-20100515-v5he.html>
63. <http://www.theage.com.au/environment/power-cut-for-big-polluter-hazelwood-20100709-10450.html>
64. http://www.sourcewatch.org/index.php/Victoria_and_coal
65. <https://www.youtube.com/watch?v=WhkuuWh6juU>
66. http://www.climatechange.vic.gov.au/__data/assets/pdf_file/0020/125417/Victorian-Climate-Change-White-Paper-Action-Plan-July-2010.pdf
67. <http://www.abc.net.au/pm/content/2010/s3048921.htm>
68. <http://blogs.abc.net.au/victoria/2010/07/the-premier-quizzed-on-carl-williams-and-more-train-chaos.html>
69. <http://www.stockandland.com.au/news/agriculture/agribusiness/general-news/cut-emissions-or-else-says-brumby/1899959.aspx>
70. http://greensmps.org.au/sites/default/files/141119_final_victorian_coal_closure_policy_initiative_final.pdf
71. <http://www.latrobevalleyexpress.com.au/story/2692356/mine-rehab-an-election-winner/>
72. <http://www.latrobevalleyexpress.com.au/story/2543151/jobs-ripe-for-the-taking/>
73. http://issuu.com/environmentvictoria/docs/preventing_the_preventable_final
74. <http://christine-milne.greensmps.org.au/content/media-releases/greens-safeguard-victoria-against-inevitable-failure-coal-power>
75. <http://www.theage.com.au/victoria/greens-to-use-upper-house-numbers-to-seek-closure-of-hazelwood-power-station-20150123-12wzyx.html>
76. <http://www.latrobevalleyexpress.com.au/story/3021868/push-to-shut-down-hazelwood/>
77. <http://www.smh.com.au/federal-politics/contributors/victoria-takes-leading-steps-on-climate-change-20100831-14dtj.html>
78. <http://www.acfonline.org.au/news-media/media-release/plan-needed-guide-switch-coal-clean>
79. <http://www.theaustralian.com.au/opinion/dirtiest-players-must-reform/story-e6frg6zo-1227268440832>
80. <http://www.theguardian.com/environment/planet-oz/2015/mar/20/who-are-really-australias-top-climate-polluters>
81. <http://www.smh.com.au/environment/climate-change/global-coal-industry-still-in-denial-over-prices-regulation-20141015-116q1v.html>
82. <http://www.businessspectator.com.au/article/2014/10/24/energy-markets/rating-peabody-coal-giant-ropes>
83. <http://reneweconomy.com.au/2015/rio-tintos-restructuring-signals-global-industry-move-away-from-coal-47991>
84. <http://www.climate-news-network.net/old-king-coal-is-sick-but-not-yet-dying>
85. <http://www.theaustralian.com.au/business/mining-energy/shenhua-cutback-shows-china-past-peak-coal-expert-warns/story-e6frg9df-1227273695080>
86. <http://www.theguardian.com/environment/2015/mar/13/us-and-chinese-companies-dominate-list-of-most-polluting-coal-plants>
87. <http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/Stranded%20Assets%20and%20Subcritical%20Coal%20-%20The%20Risk%20to%20Investors%20and%20Companies%20-%20mid%20res.pdf>