

Climate Change: Reducing Victoria's Greenhouse Gas Emissions

Independent Expert Panel on Interim Emissions Reduction Targets

Submitted to Engage Victoria
22 July 2019

Overview

As an agricultural advocate and farmer I initiated the Community Over Mining blog site as a way to interact with community.

My ongoing purpose is to advocate for good governance and mining reform to inform good planning for our future well-being and prosperity.

This includes updating policy settings to protect our potable water and sustainable agricultural areas.

Given the States duty to protect and improve the environment, the State must do more to reverse the future hydrology complications and subsequent economic risks/impacts caused by poor regulatory frameworks, compliance and enforcement of existing and past mining legacy.

The rationale to promote ongoing uses for brown coal puts the State in conflict with the concept of climate change and the role brown coal and subsequent over extraction of surface and groundwater has with both direct and indirect greenhouse gas emissions.

The emphasis of this submission will be on the need for improved transparency, interdepartmental collaboration and integrity from all levels of government to ensure future planning decisions are based on the facts that successive governments have failed to act on.

Tracey Anton
162 Hendersons Road
Toongabbie VIC 3856
www.communityovermining.org



The Independent Expert Panel recommends Victoria set greenhouse gas emissions reduction targets of:

32-39% below 2005 levels in 2025 and

45-60% below 2005 levels in 2030

1: Do you support these targets recommended by the Panel?

1a:

- Yes
- No

1b: Why/why not?

I do support the reductions, however, on current reports and research I do not believe these levels are realistic or achievable by government given the report's lack of credible and unknown replacements for future energy requirements. To offer 'so-called' alternate environmental uses of brown coal in the Latrobe Valley without being transparent to the negative legacy of existing subsurface impacts is bizarre as the three levels of government are well aware through many and varied research, inquiries and report documents. (See Qu 15 response)

What this suggests that successive government departments do not share policy objectives to achieve responsible and competent governance which would show integrity, respect for the person and property and an understanding and knowledge on the value of a healthy environment to the economy.

The Mining and Resources division of Jobs, Precincts and Region is a classic example. They are the promoter for alternate uses of coal¹, more conventional gas fields (onshore & offshore), mineral sands, metals, extractives to name a few which would negate GHG emissions savings in other sectors.

Earth Resources dept has its own agenda with full on promotion of all things mining which is a huge increases in transport emissions and over-extraction of surface & groundwater already stressed impacting other agricultural uses.

How the Kalbar Mineral Sands² development in East Gippsland is even considered given the toxic and radioactive nature of the dust beside a major river system, upstream of regional township of Bairnsdale drinking water supply and major food producing area.

Until full bipartianship across all levels of government is realised to work together, I believe the emissions reduction projections are a pipedream.

The following document is excellent in its broad look across the board on what influences GHG projections and how they can lead to estimation uncertainties.

Greenhouse gas emissions from Australian transport: projections to 2020 - Working paper 73³

¹ <https://earthresources.vic.gov.au/geology-exploration/coal/statement-on-future-uses-of-brown-coal>

² <https://earthresources.vic.gov.au/community-and-land-use/key-site-updates/fingerboards-mineral-sand-project>

³ https://www.bitre.gov.au/publications/2009/files/wp_073.pdf

I believe the planning stages are extremely important of what projects can or should not progress yet it is one of the most abused. The current EES process to assess projects is an example and has proven to be outdated through the 2011 inquiry.⁴ This is irresponsible that reform has not progressed.

As required by the *Climate Change Act 2017*, the Independent Expert Panel considered a broad range of issues in reaching its recommended targets including:

- Scientific evidence on the significant risks that climate change poses to Victoria;
- The actions that Victoria and others (including the Commonwealth government) are already taking to reduce emissions – including the commitment of the international community, through the Paris Agreement, to limit warming to well below 2°C and to pursue efforts to limit the increase to 1.5°C above pre-industrial levels, in order to avoid the worst impacts of climate change;
- The implications of Victoria contributing its fair share to limiting global temperature increases in accordance with the Paris goal (emission budgets for Victoria);
- The availability of significant emissions reduction opportunities across the Victorian economy; and
- The potential economic, social and environmental benefits and costs of Victoria’s transition to a net zero emissions economy.

2: Are these the key issues influencing what the right targets are for Victoria?

The concept of transparency and accountability across all levels of government needs to underpin the facts as we know it for the current negative impacts by industry and energy generation.

Cherry picked data to prove scientific evidence in relation to what projects can or cannot be part of a low-emissions future is paramount.

If the state government are still promoting and funding new uses for brown coal in Victoria to help lead job opportunities proves the elephant in the room is not being addressed. (See Qu 15 response)

I believe there are knowledge gaps in emissions reporting and recording.

1. What are the emissions that we know are accurate and those that could be under reported or circumvented?
2. Are those measurement determination estimates of emissions⁵ providing reliable enough data in consideration of direct and indirect greenhouse emissions?

Due to the difficulty in accurately quantifying global averages for warming due to ‘indirect’ greenhouse effects (i.e. the effects of atmospherically short-lived gases such as carbon monoxide, which are not radiatively active themselves but which can influence the concentrations of the direct gases), IPCC (1996, 1997) reports used for the Kyoto Protocol factors did not give any GWP values for indirect greenhouse gases, though estimates were provided of the total radiative forcing due to tropospheric ozone formed from such indirect gases. The standard (CO2 equivalent) greenhouse gas emission estimates would be significantly higher if the indirect effects of other gases emitted from transport—particularly the ozone precursors such as carbon monoxide (CO), oxides of nitrogen (NOx) and non-methane volatile organic compounds (NMVOCs)—were also taken into account.⁶

Water as a vapour is a potent GHG than CO2 because the water cycle is now corrupted with fossil fuel extraction.

⁴ <https://www.parliament.vic.gov.au/303-enrc/inquiry-into-the-environment-effects-statement-process-in-victoria-sp-515>

⁵ <https://www.legislation.gov.au/Details/F2019C00553> National Greenhouse and Energy Reporting (Measurement) Determination 2008 noting 2019 amending update

⁶ https://www.bitre.gov.au/publications/2009/files/wp_073.pdf pg70-91 Chapter 5 | Projection and estimation uncertainties

Water is formed in combustion by oxidation of hydrogen in hydrocarbon fuels, and thereby adds water to the hydrologic cycle and atmospheric water stores. Current Life cycle analyses frameworks for hydrocarbon fuel combustion typically report on greenhouse gas emissions and other environmental impacts, but not on water produced.

... Thus, the magnitude of water production is critical to understand from the perspective of atmospheric stores, which influence climate and weather...⁷

As a chemical compound, water vapour also creates chemical reactions in the atmosphere in addition to acting as a greenhouse gas and as a source of clouds.

Water vapour, together with ozone, is an important source for the formation of the highly reactive hydroxyl radical (OH). The OH radical is the most important oxidant in the lower atmosphere, providing the dominant sink for many greenhouse gases (e.g., CH₄, hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs)) and pollutants (e.g., CO and non-methane hydrocarbons).⁸

- If the reduction was in coal energy production (no expansion of coal pit for other uses) there would also be a significant reduction in water consumption which, in vapour form, is a potent GHG in the lower atmosphere. However, if rehabilitation of the coal pit voids takes the form of flooding then total indirect gases created via evaporation would negate some of the emissions. To what amount is the big question!

2a: Are there other issues that should be considered?

There are too many variables relied upon to facilitate energy emissions reduction which would undermine target projections.

Carbon Capture & Storage can be shown to not provide the necessary elements to make it economically viable and is in a wait & see period due to lack of restrictions on CO₂ (the dreaded carbon tax). **See Qu 12**
 Coal to Hydrogen would not be carbon neutral from **production, transport to Japan to then be used in combined cycle power generation with black coal** (as stated by Kawasaki rep).

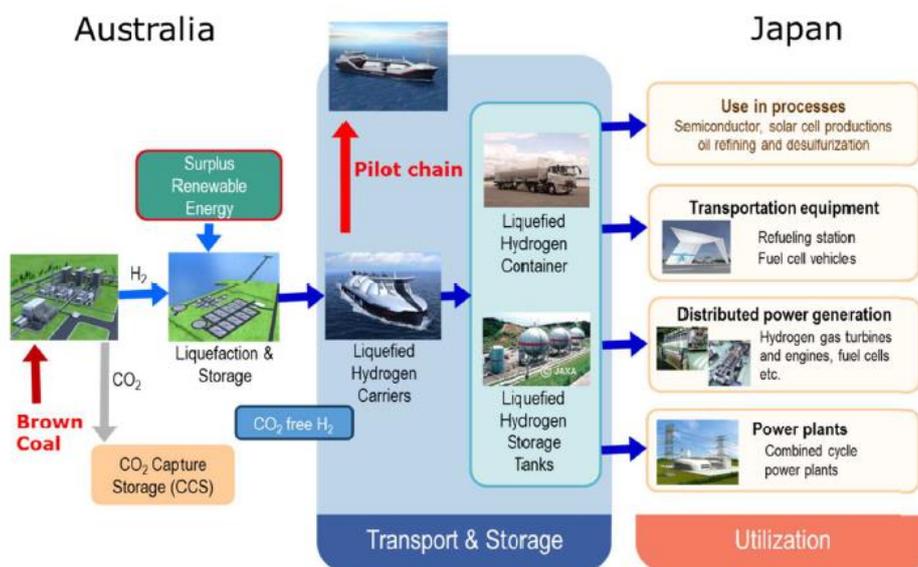


Figure 1: CO₂ free Hydrogen Energy Supply Chain (HESC) project.

Source - Introduction to a Liquefied Hydrogen Carrier for a Pilot Hydrogen Energy Supply Chain (HESC) project in Japan⁹

⁷ <https://iopscience.iop.org/article/10.1088/1748-9326/aa8390/pdf> Accounting for water formation from hydrocarbon fuel combustion in life cycle analyses

⁸ <https://public.wmo.int/en/resources/bulletin/observing-water-vapour>

⁹ <https://www.researchgate.net/publication/320608613> Introduction to a Liquefied Hydrogen Carrier for a Pilot Hydrogen Energy Supply Chain HESC project in Japan

Victoria cannot pretend to provide job opportunities under the pretense that Hydrogen is clean while ignoring the significant emissions this project would create.

Another consideration is the ageing nature of Gippsland's energy infrastructure for power stations, Australian Paper and ESSO's Longford Gas Plant that will further contribute to poor emissions management through leakage, flaring, breakdowns to name a few.

Victoria has choices about the emissions reduction pathway, or trajectory, to follow to reach net zero emissions by 2050. Different trajectories imply different costs and benefits over time. The Panel's advice includes indicative trajectories to 2050 associated with its recommended targets (see figure above and Chapter 5 of the Panel's report).

3: Do you agree with the Panel's indicative trajectories to 2050?

3a:

- Yes
- No

3b: Why/why not?

Would the panel know the availability of offsets in this trajectory period and how that can be determined? **See Qu 15.**

On reading the 2018 Victorian Greenhouse Gas Emissions Report¹⁰ and how fugitive emissions (Scope 1 greenhouse gas emissions) data is verified via the National Greenhouse Gas Pollution Inventory, reporting on those activities is only where a *Measurement Determination* can estimate emissions.¹¹

As noted in **Qu 2**, the Victorian Government need to be confident that there is no knowledge gaps in emissions reporting and recording or potential for industry to circumvent obligations. This is relevant when a carbon price is introduced to ensure industry is accountable & not under reporting while also ensuring we are correctly calculating both direct and indirect GHG emissions.

Is the Victoria government confident that the fugitive emission from the aging ESSO Longford gas plant and the new gas conditioning plant can be validated from offshore gas processing and flaring let alone the privileged treatment ESSO receive with the EPA approved venting of one million tons of Co2 annually?

Esso Australia received approval by EPA Victoria in 2012 for a new gas conditioning plant at its Longford site in Gippsland, which would strip CO₂ and mercury from feed gas as a precursor to processing, emitting about a million extra tonnes of CO₂ annually to the atmosphere.

But this was the best ESSOs could come up with - and the Victoria government thought that brainwave was acceptable.

This is a perfect example of a state agency with significant powers failing in its responsibility to actually be responsible.

¹⁰ https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0033/395079/Victorian-Greenhouse-Gas-Emissions-Report-2018.pdf pg 27

¹¹ <http://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy>

As an objector to the project, EPA's inaction was negligent issuing inadequate emissions limit, no surety that components met Australian standards as there have been significant challenges for the new plant to operate effectively exceeding its licence limits¹² and no offsetting conditions rather -

The EPA will be influenced by a generally-worded "statement of regulatory intent", issued last December, in which the Government backed away from attempting to mitigate emissions, and indicated it would leave that task to the carbon price scheme.¹³

In the absence of a carbon price and EPA imposed abatement conditions, the plant produces significant CO2 emissions annually at no cost penalty to its business model meanwhile its emissions continue to grow.

With a carbon price potentially still a while off how has the expert panel accounted for these emissions and likely expanding gas projects in Bass Strait into consideration?

Reducing Greenhouse Gas Emissions in Victoria

The Independent Expert Panel's report also identifies opportunities to reduce Victoria's greenhouse gas emissions (see Chapter 6 of the Panel's report).

4: Are there other key greenhouse gas emissions reduction opportunities beyond those the Panel identified?

- Reduce ongoing deforestation & support reforestation of the many hectares of contaminated land in Victoria from PFAS chemicals and heavy metal leaching as examples.
The government could then pay out the affected farmers/landholders using industry carbon offsets requirements. Reforestation for industry becomes an economic windfall.
- Reduce mining - the Victorian Department of Jobs, Precincts and Regions is one of conflict with the Mineral and Resources division – promote all things mining which is energy intensive and then manage projects to try and fix the problems mining creates. It is just moving waste from one place to another but creating more environmental impacts with high water consumption and transport emissions.
- Reduce coal extraction and you reduce the water footprint from mining
 - Water consumption volumes of surface and groundwater evaporate during energy production.
 - Water that is returned to the environment at a lower quality (e.g., industry licenced wastewater discharges) require treatment which is energy intensive.
 - The total amount of water polluted by concentrated wastewater discharges require dilution by the receiving waters as per agreed EPA licence conditions.
 - Water pollution from heavy metals and minerals leaching into surface and groundwater supplies.

Until acknowledgment of the negative water-energy nexus becomes part of the discussion the full environment, social and economic rational of emissions reduction target will be based on false economics.

¹² <https://www.abc.net.au/news/2017-06-27/esso-emissions-limit-breached-epa-investigates/8655082>

¹³ https://www.footprintnews.com.au/nl06_news_print.php?selkey=49779

5a: Across the Victorian economy, which activities do you think the Victorian government should prioritise in reducing Victoria's greenhouse gas emissions?

- Full assessment and cost analysis of mining pros and cons across the board should be prioritised due to the many phases of extraction, production, transport and use that generate GHG emissions.
- Security of water supplies in the hands of government, not private entities. Privatisation of water authorities has not protected our water resources as each have their own priorities and agendas.
- Better collaboration between the water and energy sector as currently mining holds trumps over water which now sees water resources mismanaged (see Qu 15)
- Build better network grids to support solar installations

5b: What policies or programs are needed to drive these emissions reductions?

Integrate water and energy planning for greater efficiency and develop greater access to the electric grid for low-water renewables such as wind and PV solar.

6: Are there any emissions reduction opportunities identified by the Panel that you would not support Victorian government action on? Why not?

See Qu 12 re CarbonNet project for carbon, capture and storage. CCS, in Latrobe Valley, is a promoter of carbon emitting industries to create a multi user pipeline hub to justify the cost of pipeline. That is not reducing CO₂ from the global acct.

The Coal to Hydrogen project, as noted in Qu 2a, in the creation of hydrogen is water intensive. Current water rights, as decreed by the minister, are for Australia's power generation. Will the carbon capture process negate the significant CO₂ created from transporting to Westernport, then shipped to Japan to be use as a startup fuel with black coal combined cycle power generation. Can't quote the global CO₂ account & fool Victorians that the coal to hydrogen will be a neutral CO₂ project.

8: Of all the benefits of reducing emissions, which are the most important and why?

Reducing burning coal emissions & subsequent coal extraction in Gippsland would have a threefold effect,

- Cleaner air for health benefits
- Healthier waterways for tourism, fishing and ecosystems
- Less subsurface movement

Barriers to reducing greenhouse gas emissions in Victoria

9: From your experience, are there any barriers to reducing Victoria's greenhouse gas emissions that the Independent Expert Panel didn't identify?

Advancement in technologies does not equate to a genuine reduction in GHG emissions if it includes an alternate use for coal requiring capture and storage. Likewise, technology advances may take the place of worker input further reducing employment opportunities.

Bass Strait gas stores will continue to fuel economic growth across the Asia-Pacific at the expense of Victoria's GHG emissions targets given the approval by EPA for the Longford Gas Conditioning plant to vent 1million tons annually.

This is because ESSO/EXXON is extracting dirty gas from Commonwealth waters full of CO₂ and mercury to profit. How hypocritical would it be to force ESSO to sequester these emissions that were once already locked in place?

How will the Victorian Government work with the Commonwealth to assess the ongoing carbon impacts from new offshore gas exploration and what will the chemical composition of the gas be?

Impacts of reducing greenhouse gas emissions in Victoria

The impact of greenhouse gas emissions reduction policies will vary across sectors and communities in Victoria.

12: In addition to those identified by the Independent Expert Panel (see Chapter 7 of the Panel's report), are there other impacts of reducing greenhouse gas emissions?

Is technological change and/or progress a way to genuinely reduce GHG emissions on the global account or more to pretend one area is doing better than another?

Additionally, the dependence on taxpayer investment via the Clean Energy Finance Corporation Amendment (Carbon Capture and Storage) Bill 2017¹⁴ to reduce risks to industry for CCS options is false economics.

The Latrobe Valley Coal to Hydrogen project at LoyYang is dependent on CarbonNet's carbon storage project offshore of Gippsland. As an example for a CEFC investment option is a total contradiction because CO₂ emissions will need to be stored while the hydrogen is shipped overseas to Japan to utilise in black coal power generation adding significant CO₂ emissions to the world account. How is that carbon neutral?

Meanwhile, Latrobe Valley and broader areas must endure the significant waste stream (CO₂, SO₂, NO_x) and further depletion of groundwater having a negative value worth on the environment.¹⁵

Secondly, the transport hub to justify the cost of the pipeline is dependent on creating new CO₂ emitting industries with capture technologies with the emphasis on job opportunities.

Not all air toxics can be captured with the associated waste stream being no different to what already exists. Similarly, how would the water footprint change with proposed new industries to return environmental flows or reduce wastewater discharges to improve ecosystems?

More concerning is the problem with the proposed pipeline from Latrobe Valley to the offshore storage site approximately 100km east meaning the project is becoming less and less viable.¹⁶

Other Comments

15: Do you have other comments about action on climate change in Victoria?

The dewatering of the Latrobe Valley Coal mines for decades to maintain batter wall stability & increasing size of the coal pits has contributed to significant geotechnical movement creeping towards the mines with a major freeway in the middle of this.

¹⁴

https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/CarbonCaptureBill/Report

¹⁵ <https://www.ninetymileagainstcarbonstorage.org.au/cefc-bill/>

¹⁶ <https://www.sciencedirect.com/science/article/pii/S1876610217320039>

So, to utilise new technology in the view of providing alternate uses for Latrobe Valley brown coal is farcical when this subsurface movement is well known by successive state governments, local councils (Wellington Shire & Latrobe City) but has never been addressed.

In the 2015 Panel Report for the **Latrobe Planning Scheme Amendment C87 Traralgon Growth Areas Review**, Prof Tim Sullivan states, in his written evidence, that

'The Latrobe Valley and the mines it contains is now a system with a large number of mutually interacting parts' and that the area is prone to 'sudden transition from quiescent state to an unstable incident or collapse'. He states that all the Latrobe Valley mines are subject to the following four types of movement:

- *Valley wide groundwater induced settlement (subsidence).*
- *A zone of in-situ horizontal stress relief extending outside the mine crest.*
- *Ongoing creep movements still occurring decades after mining was completed in the area.*
- *Movement related to slope instability type mechanisms, which can also be reinitiated a long time after mining is completed.*

He stated:

...even though some of the past and ongoing movement by themselves constitute a hazard, these movements may make the area sensitive to external water loading events, for example rainfall runoff and earthquakes.¹⁷

While the report acknowledges that there will be a decrease in emissions as the traditional power generators close benefitting air quality, it still promotes alternate uses of coal.

With further coal extraction comes more stress on the existing subsurface movement and the ongoing over extraction of surface and ground waters that has already been proven to be problematic for the future rehabilitation of the Latrobe Valley mine voids.

Water for the Latrobe Valley is stored in dams, including Lake Narracan, which was constructed between 1959 and 1961 and provides water for cooling the Latrobe Valley power stations. Lake Narracan is situated on the Latrobe River and has a capacity of 7,230 megalitres.

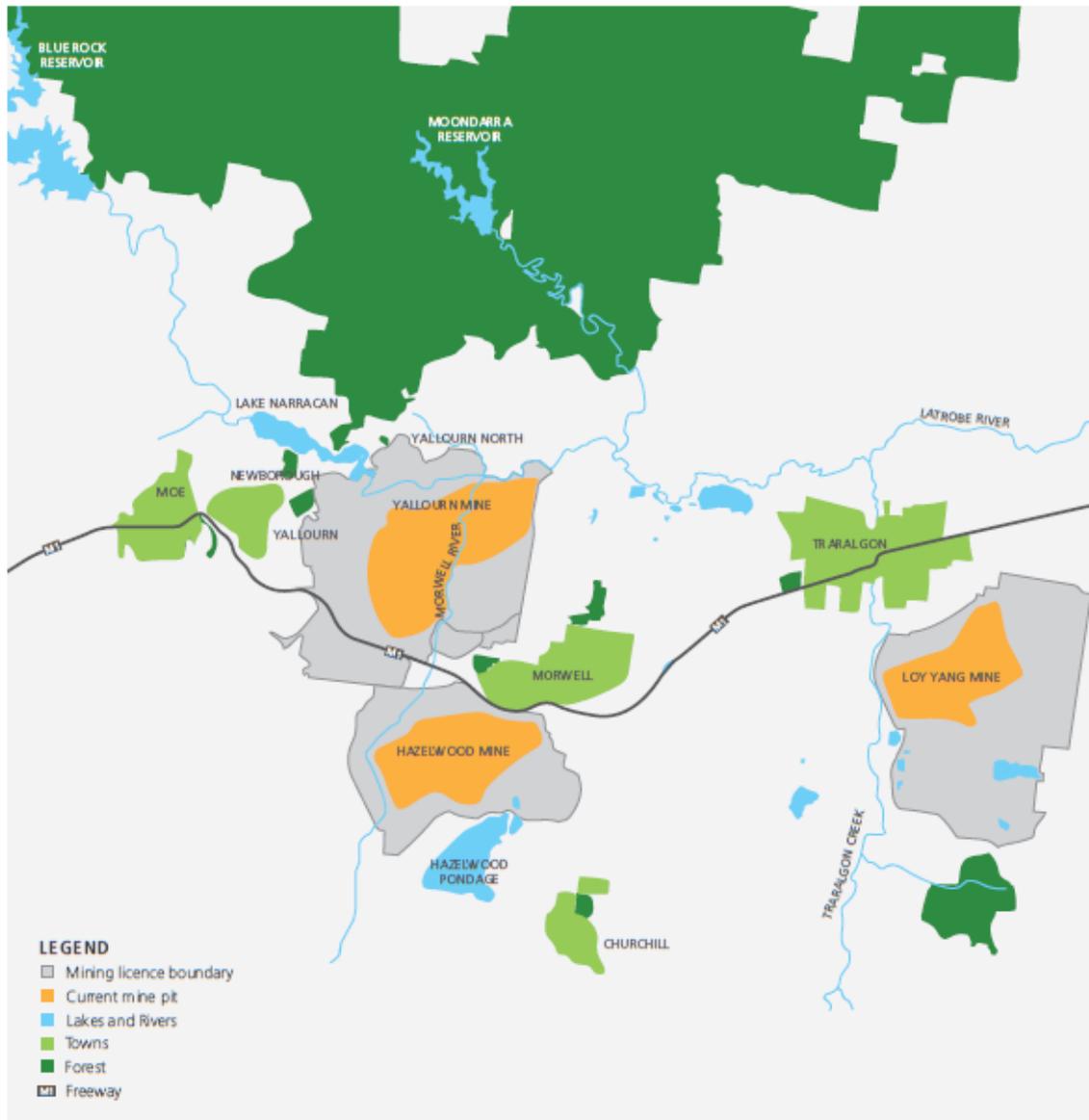
The dam at Blue Rock Reservoir is approximately 15 kilometres upstream from Lake Narracan, on the Tanjil River. It was constructed between 1979 and 1984 and supports the Latrobe Valley power stations. It has a capacity of 208,190 megalitres.

The key waterways and geographical features of the Latrobe Valley are shown in Figure 1.¹⁸

¹⁷ http://www.latrobe.vic.gov.au/files/5dc5e44d-b05a-47ff-a0de-a61a00f55366/C87_Panel_Report_-_22_June_2015.pdf

¹⁸ https://www.parliament.vic.gov.au/file_uploads/11172_HAZ_MFIRReport-2015_16-Volume4_FA_LR_15B0_pQfGZRfC.pdf pg27

Figure 1. Map of the Latrobe Valley



Source: Adapted from GeoVic, Department of Economic Development, Jobs, Transport and Resources

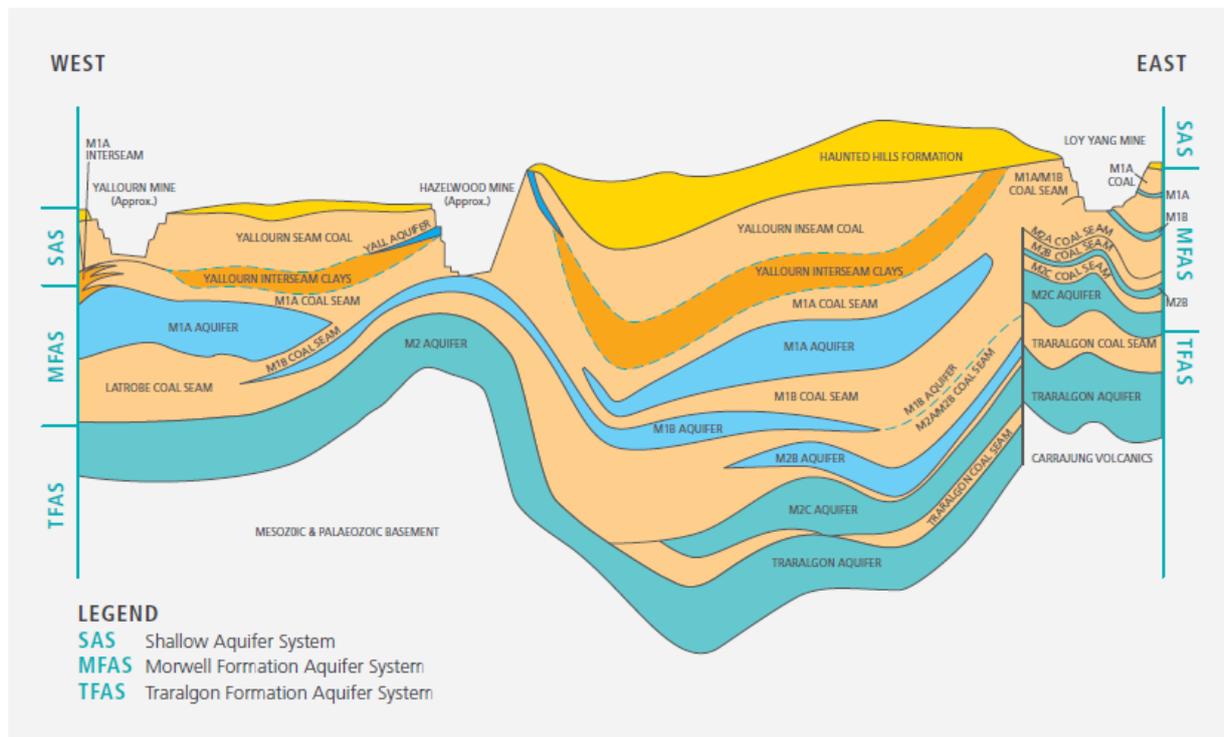
Source - HAZELWOOD MINE FIRE INQUIRY REPORT 2015/2016 VOLUME IV –MINE REHABILITATION¹⁹

Beneath the Latrobe Valley, three major aquifer systems have the greatest impact on the mines—the near-surface Shallow Aquifer System, the Morwell Formation Aquifer System and the Traralgon Formation Aquifer System. The Morwell and Traralgon Systems are major aquifers separated by layers known as aquitards, which contain less permeable materials such as coal, clay or silt. The Shallow Aquifer System is closer to the surface and water from this system is typically used for stock and domestic purposes.⁴⁰

Figure 4 is a representation of a cross-section of the Latrobe Valley's aquifers. The three mines are indicated, showing the proximity of each mine floor to the aquifers.

¹⁹ Ibid.

Figure 4. Schematic drawing representing hydrogeological features of the Latrobe Valley aquifer systems and mines⁴¹



HAZELWOOD MINE FIRE INQUIRY REPORT 2015/2016 VOLUME IV –MINE REHABILITATION ²⁰

The following quote has me concerned for ongoing coal winning or flooding of the pit void for Hazelwood which is the current preferred method by the Mine Rehabilitation commissioner.

*The coal in the Latrobe Valley is very light (only just heavier than water) with its density ranging from between 1.11 and 1.14 tonnes per cubic metre. It is also 'jointed'—meaning that **there are multiple continuous cracks through the coal**. This means that the coal is very sensitive to movement as a result of interaction with water. As groundwater and coal are extracted, the unmined coal relaxes and moves, allowing natural joints, or cracks, to open up. **If a crack then fills up with water, the water pressure in the crack can cause a whole block of coal to be pushed and slide outwards.***

The 2011 Gippsland Region Sustainable Water Strategy ²¹ (GRSWS) is the current policy document with its recommendations for water stress, rehabilitation option of flooding pit voids not considered.

WHY?

On page 29 of this document, it states,

Falling groundwater levels in the Latrobe Valley

Groundwater is extracted by power stations in the Latrobe Valley to dewater mine pits to ensure safe operating conditions for coal mining, and for process water in mine operation and power generation. **As a result, water levels have declined by up to 90 m along the valley.** The groundwater declines are lower away from the mines.

Occasionally land subsidence can result from groundwater extraction. This occurs when the pressure in an aquifer reduces as a result of water extraction and the overlying earth compacts

²⁰ https://www.parliament.vic.gov.au/file_uploads/11172_HAZ_MFIReport-2015_16-Volume4_FA_LR_15B0_pQfGZRfC.pdf

²¹ https://www.water.vic.gov.au/_data/assets/pdf_file/0026/52883/DSE_GRWS_accessible_linked.pdf

and sinks. **Compaction of the coal beds and localised movement of ground has resulted in the ground level dropping by up to 2.4 m near the Latrobe Valley coal mines.**²²
(Comment from 2011).

On page 132 of this document, it states,

*Current rehabilitation plans for open cut coal mines involve flooding them to create artificial lakes. However, this is not considered to be an entirely viable option any longer because there is insufficient water to fill most of the mines.*²³

Pg 411, line 25 from the TRANSCRIPT OF PROCEEDINGS²⁴ -2015/16 HAZELWOOD MINE FIRE INQUIRY, MELBOURNE THURSDAY, 10 DECEMBER 2015 notes,

'PROFESSOR MACKAY: ...The implications of water in particular are significant. These mines will become fairly significant sinks for water in the sense that they will become open lakes and those lakes will have significant evaporation. That means that there will be a change in the hydrology of the area for a period of time. It may be that that change in the hydrology will become a permanent feature.'

Depending on acidity of lakes could also mean an acid rain type effect?

The current flooding option will certainly lead to increased evaporation reacting with indirect atmospheric greenhouse gases and reduce the amount of available waters for other beneficial users potentially needing prolonged use of the desalination plant which is energy intensive.

If the desalination plant is dependent on offsets for all energy usage with renewable energy credits – how many credits will be on offer in the Panel's indicative trajectories to 2050?

Continuing to pg 412, line 11-17²⁵ -

'MR ROZEN: I just want to understand what you are referring to there. Are you saying that, for example, there needs to be greater coordination of existing arrangements; that is the regulator, the water authorities, the mines, expert bodies, planning agencies?

PROFESSOR MACKAY: Yes.'

The Hazelwood Mine Fire Inquiry Report 2015/16 Volume 4, Mine Rehabilitation concludes that pit lake is the most viable option but not all are on board.²⁶

²² https://www.water.vic.gov.au/_data/assets/pdf_file/0026/52883/DSE_GRWS_accessible_linked.pdf

²³ Ibid.

²⁴ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf>

²⁵ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf>

²⁶ https://www.parliament.vic.gov.au/file_uploads/11172_HAZ_MFIRReport-2015_16-Volume4_FA_LR_15B0_pQfGZRfC.pdf pg82

5.4 BOARD'S DISCUSSION AND CONCLUSIONS

The Board accepts the evidence of Jacobs that there are six possible rehabilitation options for open cut mines.

The Board is persuaded by the expert evidence that the pit lake and the partial backfill below the water table options are currently the most viable. The Board notes that these options are most closely aligned with the mine operators' current rehabilitation plans.

The Board accepts the opinions of Professor Galvin, Adjunct Professor Sullivan, Professor Mackay, Dr McCullough and Dr Haberfield that the two viable options identified by Jacobs can be considered as one landform with variable elements. Therefore the Board refers to the option as the 'pit lake option' for the remainder of this report, while recognising that each lake will have varying levels of overburden and water, and different lake depths.

The Board accepts the evidence of Mr Hoxley and Adjunct Professor Sullivan that it is possible that the two options may be considered less attractive or viable in the future once additional research is undertaken. The Board accepts that there are many unresolved issues about how the lake option will be achieved. These issues are discussed in Part 6.

While the potential for beneficial final land use is a key criterion in assessing rehabilitation options, the Board considers the safety, stability and sustainability of the landform to be of paramount importance.

The pit lake option is assessed in detail against Term of Reference 9 in the following Part.

The above highlighted section is the concern that I believe is being manipulated because if they are not 'fully' transparent with the water issues/stresses from the past, present and into the future then the ultimate final planning decision could be dangerous and irresponsible but will definitely ineffective.

Under Key Questions about the Latrobe Valley Regional Rehabilitation Strategy (LVRRS) Project

- Why aren't other options being considered as part of the LVRRS?

- the scoping of the Latrobe Valley Regional Rehabilitation Strategy (LVRRS) that came out of the Inquiry is 'testing the feasibility of the pit lake option only, [the scope of the project does not extend to options outside of the pit lake rehabilitation option]. However, as per the above answer, alternative mine rehabilitation options and proposals will be given due consideration, through already established processes and procedures.'²⁷

Pg 438-9 starting on line 27²⁸ -

'PROFESSOR GALVIN: ...We know the department has had a lot of sink holes repaired in another part of the area. There's cracks in netball courts. The town has subsided several metres because of the water situation and will continue to subside and for a while and it has infrastructure that's too close to the mine and it was silly to ever put it there.

The image I have in my mind is basically a fractured dinner plate, if you like, just sitting there and one edge of the plate sits at the edge of the Hazelwood northern batters, but the whole thing is fractured. In my statement I try to do it in layman's terms for you, that when you get a fracture you get water in the fracture and if you can't get the water out quickly, everything moves. To me that northern batters area extending for a significant distance back into the town is a fractured dinner plate and I can't give you any assurance in time to come when and how and how much that will move.'

²⁷ <https://earthresources.vic.gov.au/projects/lvrrs/project-information-and-factsheets/key-questions>

²⁸ <http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2015/12/Hazelwood-Mine-Fire-Inquiry-Day-3-Transcript.pdf>

Pg 525, line 22²⁹ -

'MR ROZEN: Dr Haberfield ...I suggest to you that in the current setting it's not actually how much the public is prepared to pay, it is how much the mines are prepared to pay, isn't it, that determines the level of risk that the public is exposed to? Isn't that a better way of characterising the current situation?'

Comes back to available \$\$\$ of what the miners are prepared to paid and what the community are prepared to accept based on taxpayer dollars.

This is the story that is not being told fairly.

Just Transition – Do we really know what that is?

²⁹ Ibid.