

When the ash settles: a community guide to cleaning up Latrobe Valley's toxic coal ash

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Acknowledgements

We acknowledge and pay our deep respects to the First Nations people of the land on which the coal-burning power stations, ash dams and mines are located – the Brayakaulung People of the Gunaikurnai nation. We pay our respects to their elders past and present. We acknowledge that Brayakaulung sovereignty has never been ceded. We acknowledge that the Brayakaulung people cared for country for tens of thousands of years and with dignity and companionship. Despite the violence and trauma of colonisation, the dignity and companionship with which the Brayakaulung care for country continues unbroken.

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Environmental Justice Australia is a not-for-profit public interest legal practise. Funded by donations and independent of government and corporate funding, our legal team combines a passion for justice with technical expertise and practical understanding of the legal system to protect our communities and environment.



Friends of Latrobe Water (FLoW) is a community advocacy group based in Gippsland, Victoria. FLoW works to facilitate a positive post- coal mining legacy for future social and economic prosperity of the region in a manner that safeguards and protects the community and surrounding environment, including the Latrobe River that contribute freshwater flows to the Gippsland Lakes.



Introduction

1.1. The problem

Power stations don't just produce steam and air pollution. They also produce millions of tonnes of coal ash every year. In Australia, coal ash is the 5th largest stream of industrial waste.¹ Coal naturally contains toxic chemicals and heavy metals which are concentrated in the ash when coal is burned.²

In the Latrobe Valley, the power station coal ash dams can't be seen from the road like the mines or the buildings. The ash dams are built near the power stations, next to waterways and on top of groundwater, and filled with ash mixed with water. These dams – or landfills, or ponds as they're sometimes called – aren't built in a way that prevents environmental contamination.

For years the Latrobe Valley power stations have been allowed to operate without strong regulations to prevent contamination, with little community access to information. The means the ash dams have been slowly leaching into surrounding groundwater tables.

Power stations and regulators often refer to coal ash as 'inert'. Inert does not mean 'safe' or 'not harmful'. It means 'not having power of action or resistance, or little or no ability to react'.³ The contaminants in coal ash can travel in surface water and groundwater and in the air as dust which means its not inert. Making sure coal ash dams are cleaned up properly once the power stations close is really important.

1.2. Victorian licence review and subsequent licence amendments

From 2017 – 2021 the EPA reviewed the coal-burning power station licences for Yallourn, Loy Yang A and Loy Yang B.⁴ The EPA has included new licence conditions in the licences for Yallourn and Loy Yang A requiring the operators to prepare rehabilitation plans for their ash dams before the power stations close.⁵

The Latrobe Valley community must be involved in the development of the power station ash dam rehabilitation plans.

¹ See: <https://www.abc.net.au/news/2019-03-10/coal-ash-has-become-one-of-australias-biggest-waste-problems/10886866/>

² *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities*, Proposed Rule, 40 Code of Federal Regulations § 257, 261, 264, 265, 268, 271, Subparts 302, 35,128, 35,138 (June 21, 2010).

³ See: <https://www.dictionary.com/browse/inert#>.

⁴ See: <https://engage.vic.gov.au/review-brown-coal-power-station-licences>.

⁵ The power station licences are available in the EPA's website: <https://www.epa.vic.gov.au/for-business/find-a-topic/licences-works-approvals/search-for-licence>.

The coal ash dams in Latrobe Valley were built a long time before the EPA had guidelines on such things, and so don't comply with the current guidelines at all. Currently EPA are using guidelines for landfill sites, but these fail to adequately address management for coal ash dam rehabilitation.⁶ Yallourn and Loy Yang must complete coal ash rehabilitation plans by December 2021, but the current framework guidelines are not fit for purpose, therefore setting up the remediation for failure.

Yallourn and Hazelwood have ash dams inside their mines. If the operators want to flood the mines and make them places the community can use, then we must make sure that the rehabilitation standards of the ash dams are as strict and comprehensive as possible.

Hazelwood has developed an ash dam rehabilitation plan which is not available to the community. Loy Yang B doesn't have an ash dam, instead it pipes its coal ash to Loy Yang A's ash facilities.

We have an opportunity to make sure that the power stations prepare best-practice rehabilitation plans for their ash dams. This report outlines how we can make that happen.

Who is the EPA

The Environment Protection Authority Victoria (EPA) is the statutory authority for controlling pollution in Victoria. This includes decisions on whether to allow new industrial facilities to be built, issuing and amending licences that control how much pollution a facility can emit, and taking regulatory action to chase-up pollution incidents and taking legal action.

Victorians rely on the EPA to protect us from the health and environmental impacts from pollution and waste. We rely on EPA to make sure we have the information we need to understand what pollution and contamination we live near, whether we're exposed to that pollution, and how much we're exposed to.

EPA has a Traralgon office. If you see pollution or contamination occurring, or want to know more about pollution near you, you can contact EPA by emailing contact@epa.vic.gov.au or calling 1300 372 842.

2. Coal ash dams as a legacy contamination issue in Latrobe Valley

2.1. What is a coal ash dam?

Just as burning wood in fireplaces creates ash, so does burning coal. Coal ash is the waste produced after coal is burned. Coal dust comes off unburned coal in the mines. Coal ash and coal dust are very different materials.

⁶ Environment Protection Authority Victoria, Siting, design, operations and rehabilitation of landfills, Publication 788.3. Available at: <https://www.epa.vic.gov.au/about-epa/publications/788-3>.

When the power stations burn coal, enormous amounts of coal ash is produced. The power stations mix the ash with water which forms a slurry that is piped to landfill sites near the power stations and away from public view. As the names suggests, coal ash dams – or ponds as they’re sometimes called – are a type of landfill full of a wet substance.

Because coal ash is the waste from burning coal, it is more toxic than raw coal. Coal ash contains concentrated versions of the heavy metals and other toxins in unburned coal, such as mercury, lead, selenium, cadmium, radium, and fine particle pollutions. This means that the landfill sites that the coal ash slurry is pumped into must be properly engineered, managed, monitored – and rehabilitated – to make sure that none of these toxins make their way into our waterways, and potentially harm aquatic life or human health. None of the ash dams are lined appropriately to prevent contamination seeping into groundwater, which can then flow into surface water such as Bennetts Creek and Eel Hole Creek.

Coal ash dams in Latrobe Valley are already causing environmental harms. This has big consequences for clean-up, rehabilitation and closure. In circumstances where the coal ash dams are inside the mines (Yallourn and Hazelwood), this means that mine rehabilitation needs to include coal-ash dam rehabilitation. This is important because if water is used to fill the mines then that water must be safe for future use.

2.2. What is happening at Hazelwood

There are several ash dams at the Hazelwood power station and mine site. One of the ash dams – the HARA (Hazelwood Ash Retention Area) – is inside the mine on one of the lower mine batters.

We know that there are contamination issues at the HARA. This ash dam isn’t lined properly and there is identified contamination leaching into the groundwater, as are other ash dams at this site.⁷

The mine owner - ENGIE, has stated that the preferred option to rehabilitate the Hazelwood mine is to fill it with water. As far as we know there is no plan to either remove the HARA from inside the mine or remediate it properly to stop it leaching toxins into the groundwater before the final rehabilitation plan is decided on.

A failure to properly rehabilitate all the ash dams at Hazelwood poses a long-term threat to the surrounding environment including Eel Hole Creek and Bennetts Creek. It also poses a threat to water quality inside the mine if water is used to rehabilitate the mine.

2.3. What is happening at Yallourn

Yallourn has a ‘twin ashing system’ where coal ash is piped to the dams from the power station. The ash settles, the water is drained, and the ash is excavated and trucked to a worked-out section of the Yallourn

⁷ See: Clean Up Notice dated 02 October 2020 issued to Hazelwood’s owners by EPA.

mine.⁸ The ash dams hold about 6 months' worth of ash waste and are built on top of a former ash dam inside a worked-out section of the Yallourn mine.⁹

Groundwater under the former ash dam was contaminated prior to the construction of the new dams.¹⁰ The current ash dam is lined with plastic, however there have been historical issues with maintaining the integrity of this liner as the ash is excavated and removed to a different section of the former mine area.¹¹ Experts and mine owners, EnergyAustralia suspect that damage has been caused to the floor liner, however this has not been fully investigated because the ash dams operate on six-month cycles of filling and excavation.¹² EnergyAustralia have failed to construct a best practice ash dam to ensure that cleaning, inspection and repairs to the current lining are undertaken and that groundwater contamination is stopped at the source. Further to this the EPA does not currently require them to do so.

In February 2015, a rupture in an EnergyAustralia ash disposal pipeline led to 8.6 megalitres of ash liquid being damed into the Morwell River (enough to fill 3.5 Olympic swimming pools).¹³ The EPA only fined the operator \$7,584.

Some sources say there is evidence that groundwater has been contaminated by ash dam leachate to the south of the ash dam,¹⁴ while others state undeniably a contamination plume is underneath the dam site but remains within the Yallourn power station boundary.¹⁵

Like Hazelwood, EnergyAustralia wants to flood the Yallourn mine with water. It's not clear whether the water would also flood the ash dams which sit on the north side of Latrobe River, and it's also not clear what the rehabilitation plan for the Yallourn ash dams is. What we do know though is that the Yallourn ash dams are close to Anderson's Creek and the Latrobe River.

⁸ Golder Associates, Section 53V Audit, *Yallourn Ash Landfill, Hard Waste Landfill and Asbestos Landfill*, Environmental Audit, 27 October 2017, p. 10; Keam, K, *Twenty-Five Years' Experience Operating a HDPA Lined Twin Pond Ashing System*, Paper presented at World of Coal Ash Conference, Nashville, TN, May 5–7, 2015, p 1. (available at <http://www.flyash.info/2015/085-keam-2015.pdf>).

⁹ Keam, K, *Twenty-Five Years' Experience Operating a HDPA Lined Twin Pond Ashing System*, Paper presented at World of Coal Ash Conference, Nashville, TN, May 5–7, 2015, p 1. (available at <http://www.flyash.info/2015/085-keam-2015.pdf>).

¹⁰ Keam, K, *Twenty-Five Years' Experience Operating a HDPA Lined Twin Pond Ashing System*, Paper presented at World of Coal Ash Conference, Nashville, TN, May 5–7, 2015, p 3. (available at <http://www.flyash.info/2015/085-keam-2015.pdf>).

¹¹ Keam, K, *Twenty-Five Years' Experience Operating a HDPA Lined Twin Pond Ashing System*, Paper presented at World of Coal Ash Conference, Nashville, TN, May 5–7, 2015, pp 10–11. (available at <http://www.flyash.info/2015/085-keam-2015.pdf>).

¹² Keam, K, *Twenty-Five Years' Experience Operating a HDPA Lined Twin Pond Ashing System*, Paper presented at World of Coal Ash Conference, Nashville, TN, May 5–7, 2015, p 15, (available at <http://www.flyash.info/2015/085-keam-2015.pdf>).

¹³ <https://www.epa.vic.gov.au/about-us/news-centre/news-and-updates/news/2015/july/28/epa-fines-energy-australia-for-ash-slurry-spill>.

¹⁴ Golder Associates, Section 53V Audit, *Yallourn Ash Landfill, Hard Waste Landfill and Asbestos Landfill*, Environmental Audit, 27 October 2017, p 4.

¹⁵ Keam, K, *Twenty-Five Years' Experience Operating a HDPA Lined Twin Pond Ashing System*, Paper presented at World of Coal Ash Conference, Nashville, TN, May 5–7, 2015, p 5, (available at <http://www.flyash.info/2015/085-keam-2015.pdf>).

2.4. What is happening at Loy Yang

Unlike Hazelwood and Yallourn the Loy Yang ash dam is not in the mine pit. But underneath the Loy Yang ash dam is a large groundwater contamination plume. In 2001 the EPA issued Loy Yang with a clean-up notice for the groundwater contamination plume but didn't actually require the source of the groundwater contamination to be cleaned up. Instead, EPA provided Loy Yang A with an exemption from achieving groundwater quality objectives for sulfate, aluminium, chloride and total dissolved solids (TDS). TDS is a catch-all term for anything that has dissolved in the water.

The Public Report for the power station licence review said that AGL Loy Yang will be required to clean-up the groundwater contamination once the power station has closed. But this isn't in the licence, so it's not clear whether the EPA actually intends to make sure that the clean-up happens.¹⁶

2.5. How did this even happen in the first place?

Part of the problem is that some of the coal ash dams, like Hazelwood, were built before the EPA existed. Part of the problem is that the EPA doesn't require best-practise coal ash dam management and operation. Overall there has been a consistent failure of the EPA, and the operators, to make sure that contamination is reduced, cleaned-up, and better standards are introduced to make sure the contamination stops.

In short:

- The ash dams at Hazelwood, Loy Yang and Yallourn are not lined properly to prevent contamination;
- The ash dams at Yallourn are lined, but that lining is probably torn and causing groundwater contamination;
- The HARA ash dam at Hazelwood doesn't have a proper barrier between the coal ash and groundwater;
- The ash dam management plans are not publicly available, so the community has no idea how the operators are making sure they are doing everything they can to stop pollution;
- There is an enormous groundwater contamination plume underneath the Loy Yang ash dam. The contamination is so bad that the EPA stopped requiring AGL Loy Yang to comply with the law;
- There's very little communication about the ash dams from the power stations and the operators don't tell the community about the problems at the sites. Neither does the EPA.

EPA has never prepared best practise coal ash dam construction, management, rehabilitation, closure or post-closure management guidelines or regulations. Using landfill rehabilitation guidelines for these wet, toxic sites is not appropriate. Capping the ash dams and walking away is not the solution. We need to make

¹⁶ Environment Protection Authority Victoria, Publication 1947, *Brown coal-fired power stations licence review: public report* ((March 2021) p. 5. Available at: https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.vic-engage.files/1616/1490/3888/Power_station_licence_review_-_Public_Report_-_FINAL.pdf.

sure that the rehabilitation of ash dams is comprehensive. Otherwise, we're just letting a big problem sit there and become the community's problem later down the track once the power stations have closed and their owners have moved on.

Now that Yallourn and Loy Yang A power stations are required to think about and prepare rehabilitation plans for the ash dams, the EPA – and the community – has an opportunity to ensure that best-practice rehabilitation happens to protect our home.

Coal ash is a big problem for a long time

One of the big issues with coal ash dam pollution is that the full extent of the contamination problems don't appear until decades later. The EPA recognises this in its landfill guidelines.¹⁷ This is the experience in the United States, for example, where communities that live near coal ash dams have suffered catastrophic harms, including deaths, caused by poorly constructed and managed coal ash dams.

A US EPA risk assessment warns that peak pollution from ash dams occurs 78 to 105 years after they first started operating. Thus old dam sites, even if they cease receiving coal ash, still pose very significant environmental and human health threats.¹⁸

We might not think this is a problem at the moment, but we can't let that stop us from wanting the best for our community now.

3. How do we clean up the mess?

Best practise rehabilitation relies on best practise construction and operation. None of the Latrobe Valley coal ash dams were built to EPA's best practice standards, let alone world's best practice standards. In order to protect our water and our health long after the power stations have shut, we must make sure that the coal ash dams are rehabilitated even better than what's currently on the table.

3.1. Opportunity in licence amendments and power station obligations to prepare ash rehab plans.

Typically the power stations are required to undertake the following to rehabilitate the ash dams to what the EPA considers to be best practise:¹⁹

- Prepare a conceptual rehabilitation plan that includes:

¹⁷ Environment Protection Authority Victoria, Publication 788.3, *Siting, design, operation and rehabilitation of landfills* (August 2015) Part 8.

¹⁸ Clara G. Sears, PhD, MS1, and Kristina M. Zierold, PhD, MS, 'Health of Children Living Near Coal Ash', *Global Pediatric Health*, Volume 4, 1-8 (2017), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5533260/> at 4-7 to 4-8.

¹⁹ Environment Protection Authority Victoria, Publication 788.3, *Siting, design, operation and rehabilitation of landfills* (August 2015) Part 8.

- Progressive rehabilitation plans;
 - Triggers for rehabilitation;
 - Plan for site after use;
 - Decide on the settlement and final surface profile;
 - a landfill cap; and
 - Propose alternative to a landfill cap.
- Prepare aftercare management plans (that is, when the rehabilitation is complete) that:
 - Works out buffers and measurement
 - Works out buffer distances and encroachment

We know that this isn't enough to make sure our water and our homes are safe from pollution from ash dams.

The new conditions in Yallourn and Loy Yang licences provides the Latrobe Valley community with an opportunity to ensure that the EPA requires the power station operators implement best practise coal ash dam rehabilitation and closure planning. And it provides the operators, who are happy to tell us that they want us to be informed and involved in conversations about rehabilitation, to put their money where their mouths are and make sure we're involved in the rehabilitation and closure planning design.

Legal requirements under the Environment Protection Act 2017

Under the *Environment Protection Act 2017* – the law that licences and pollution controls are made under – coal ash is categorised as a 'priority waste'.²⁰ This categorisation imposes several obligations on coal ash dam operators in Latrobe Valley. These duties include taking all reasonable steps to ensure that coal ash is contained in a manner that prevents its escape and is isolated in a way that ensures resource recovery is practicable.²¹ It also imposes a duty on the power station operators to investigate alternatives to disposal of coal ash,²² including reuse and recycling,²³ and minimising the impact on human health and the environment from coal ash generation and disposal.²⁴

We need to make sure that the Latrobe Valley ash dam rehabilitation plans include strategies for reusing coal ash safely, and that implement best-practice mitigation to reduce the risk of harm to the environment and human health as much as possible.

²⁰ Environment Protection Regulations 2021 (Vic) Schedule 5.

²¹ Environment Protection Act 2017 (Vic) s 139 (2).

²² Environment Protection Act 2017 (Vic) s 140.

²³ Environment Protection Act 2017 (Vic) s 140 (1)(a)(i).

²⁴ Environment Protection Act 2017 (Vic) ss 140(1)(b)(iii), 111(1)(a).

3.2. Best Practise coal ash dam and closure planning

So what does best practise coal ash dam rehabilitation look like? Experts in coal ash dam law and regulation at Environmental Justice Australia say it includes the following:²⁵

- A comprehensive corrective action plan is developed in partnership with the community that includes:
 - detailed descriptions of the ash dam and surrounding area (site characterisation);
 - extensive details of the remedial action to prevent ongoing contamination of groundwater, surface water, air and land;
 - requirements for quarterly community reports and feedback on process;
 - assessment of the contamination levels and composition of contaminants;
 - detailed chemical analysis of the ash;
 - hydrogeological reports and maps;
 - groundwater and surface water monitoring data for the previous 10 years;
 - triggers for remedial action in the event of exceedances identified at monitoring points including groundwater, surface water, air and structural integrity monitoring points; and
 - requirement for timely public safety announcements.
- Coal ash reuse strategies are developed and include:
 - Testing requirements and 'safe use' thresholds embedded in the Environment Protection Regulations 2021;
 - Plans to apply the Victorian waste hierarchy to coal ash with reuse targets established.
- Comprehensive water quality modelling is available that estimates:
 - how quickly groundwater and surface water contamination will improve;
 - how much contamination is expected to continue to leak into water sources; and
 - a prediction for the effect of pollution control measures including removal of contaminated materials.
- A strict time limit is set within which closure and post-closure plans must be prepared and implemented.

²⁵ Environmental Justice Australia, *Unearthing Australia's Toxic Coal Ash Legacy* (2019). Available at: https://www.envirojustice.org.au/wp-content/uploads/2019/07/EJA_CoalAshReport-Ir.pdf.

- A closure plan is agreed that is enforceable by both the environmental regulator (EPA) and the community including the following elements:
 - conditions of compliance are clear and have time frames for compliance;
 - community enforcement actions are available to ensure the plan is followed strictly.
 - mechanisms that allow companies to bypass their obligations without thorough explanation, allow time to lapse without having implemented rehabilitation within a strict time period, and/or waive rehabilitation requirements by deferring to reports such as third-party engineering reports, must be removed.
- The operator is required to maintain a financial assurance before rehabilitation takes place. Financial assurance details, including amount, are made publicly available.
- The impact of the ash dam's contaminants in water, surface water, air and land are detailed, as are the environmental and human health impacts of these contaminants.
- There are detailed descriptions of long-term monitoring program (at least 30 years) funded by the operator that include:
 - groundwater monitoring systems;
 - remedial actions to restore groundwater to original conditions where contamination continues or in the event that contamination is discovered post-closure; and
 - ash dam cap inspection and cap maintenance.
- All documents related to ash dam rehabilitation are publicly available, preferably on a publicly accessible website, including:
 - monitoring data;
 - reports used to develop the corrective action plan;
 - the final corrective action plan;
 - communications between the ash dam operator and regulators overseeing the rehabilitation and closure plan;
 - any penalty infringement notices or court orders issued for non-compliance; and
 - all community update reports.

3.3. What about reuse industries?

For decades companies in Latrobe Valley have been talking about establishing a coal ash reuse industry. In fact, the owners of Hazelwood said in their 2005 Environmental Effects Statement for the expansion of the

West Field mine that rehabilitation couldn't be comprehensive because the EPA didn't want to rule out using the ash in the future.²⁶

But is reusing coal ash a good idea?

It is, if it's safe to use it. The safest way of using coal ash in other industries is when it's incorporated into a solid form such as concrete, bricks and tiles. But when it comes to coal ash from brown coal, even the coal ash reuse industry says there's not enough information to know how to safely use Victoria's coal ash.²⁷

The Victorian EPA does not have guidelines for reusing coal ash safely. To make sure that it's safe to use we need the EPA to develop safe reuse guidelines.

3.4. Best practise community engagement

Best practice environmental planning and decision making, especially where communities live close to sources of serious contamination and pollution, always includes public participation. Community involvement is critical to make sure that planning and decisions are made to thoroughly protect environmental and community health. It is so important that international law was made about it 30 years ago. This is known as the Aarhus Convention.

As noted above, best practice coal ash dam rehabilitation must include community engagement. The Latrobe Valley has an excellent opportunity to be part of the preparation of the ash dam rehabilitation plans for Yallourn and Loy Yang.

3.4.1. The Aarhus Convention on community engagement in environmental decision making

The *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters* (Aarhus Convention) outlines what best practice public participation in environmental decision making must involve.²⁸ It's founded on the principals of participatory democracy, and aims to protect both environmental and human rights by holding governments and public authorities to account by obliging them to make sure that access to information, public participation, and access to justice is embedded in environmental planning and decision making.

These activities are summarised below.

Access to information	The public must be able to request and be provided with information about the environment from government bodies and public authorities. It also
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²⁶ Enesar Constuling Pty Ltd, IPRH West Field Project, Environment Effects Statement (2004), Chapter 10, p. 12.

²⁷ Ash Development Association of Australia and Link Strategy, *Road base applications using Victorian power station ash*, P. 5. Available at:

²⁸ *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters*, opened for signature 25 June 1998, 2161 UNTS 447 (entered into force 30 October 2001) (Aarhus Convention).

	means that government bodies and public authorities must collect information, such as water and air monitoring data, without the public having to ask for it.
Public participation	Access to accurate and up-to-date information is fundamental to proper public participation. There are three parts to public participation. First, public participation for people who may be affected by or interested in decisions related to an activity – such as an ash dam rehabilitation plan, or power station licence. Secondly, public participation in the development of plans, programmes and policies related to the environment, such as the Latrobe Valley Regional Rehabilitation Strategy. Finally, the public should be involved in the preparation of laws and rules, such as the new Environment Protection Act, and the Declared Mines Regulations.
Access to justice	Public participation must occur without obstruction, and enforce community access to information by including review process for denials of access to information or regarding decisions about the environment or an industrial facility. This is a way for the public to directly enforce environmental law.

Best practice coal ash dam rehabilitation is directly tied to best practice community engagement. The Latrobe Valley community must have the opportunity to contribute to and participate in decision-making and we must have access to the information we need to do so. Best practice public engagement is much more than people writing submissions that may or may not form part of the EPA, or the operators, planning and decision-making processes. Our views and solutions can't be treated as a tick-the-box exercise. We must have a seat at the table in the planning, design, and outcome of the ash dam rehabilitation plans.

Best practice community engagement in Latrobe Valley regarding the ash dams doesn't currently exist. We don't have access to water monitoring data. We don't know the structural integrity of the ash dams. We don't know how and to what standard Engie is required to rehabilitate the Hazelwood ash dams. All these unknowns breeds mistrust between the community and the power stations, and the EPA whose job it is – if it applies best practice to itself – to provide us with the information we need to know what we're living next to and how we can be deeply involved in the planning and decision making for the future of our region.

Unfortunately, the EPA hasn't required Loy Yang A or Yallourn to engage the Latrobe Valley community in the development of their ash dam rehabilitation plans. EPA and the power station operators must make sure that they apply best practice community engagement to the development of the ash dam rehabilitation plans.

It's also important in the context of a just transition for Latrobe Valley. A just and fair transition isn't just about workers and the economy, even though these are really important.

4. Why environmental justice and comprehensive environmental remediation is necessary as part of a just and fair transition.

4.1. After the mine fire and closure announcements we still don't have clear solutions for rehab.

A lot of important things have happened since the Hazelwood mine fire in 2014. The Health Innovation Zone and Special Economic Zone were established. The Latrobe Valley Mine Rehabilitation Authority was established. The government is developing the Latrobe Valley Regional Rehabilitation Strategy.

However, none of these initiatives treat environmental remediation as an opportunity to properly clean-up the result of years of mining, nor as a way to create local jobs and expertise. For years we've looked out at mines and power stations. Wouldn't it be nice, after those mines and power stations close, to look out over a landscape that has been comprehensively remediated and know that a new local job industry was created to protect our land and water after the last mine closes?

Despite these important developments we still have no idea what mine rehabilitation will look like and what will be done to thoroughly rehabilitate the coal ash dams.

There are ash dams inside both Yallourn and Hazelwood mines. It's very unclear what the relationship between the relevant government agencies and the power station operators is to ensure that coal ash dams inside the mines are comprehensively rehabilitated to stop groundwater contamination. And if the mine operators are allowed to use water to fill the mines, what does poor ash dam rehabilitation mean for water quality? Will we really be expected to swim and water ski in a large contaminated puddle? Or will the mines be fenced off forever?

The Latrobe Valley community must be left with safe water and land that we can use well into the future.

4.2. Jobs for workers is not even half of the issue.

A just and fair transition isn't just about moving from one industry to another, or focussing on coal workers. These are important aspects of a just transition, but they're not – and shouldn't be – the only focus. And a just transition isn't just about doing the bare minimum to clean-up after over one hundred years of digging up and burning coal. A just transition must be about everyone in Latrobe Valley. And everyone relies on a clean environment to have the healthiest lives possible.

A just transition, then, is one that includes comprehensive remediation of industrial sites, including the coal ash dams and the mines. The good news about comprehensive environmental remediation is that it creates jobs and cleans up our land, water and air.

This has happened in other parts of the world. Research undertaken by the Northern Plains Resource Council (NPRC) of Montana, United States, in collaboration with the International Brotherhood of Electrical

Workers Local Union 1638, shows that there are employment opportunities presented by comprehensive rehabilitation of the Colstrip power station coal ash dam.²⁹

This includes excavating coal ash from its current location to thoroughly remediate contamination and prevent ongoing groundwater and surface water contamination, and building water treatment plants to clean up contaminated water. These processes will make more sustainable jobs, as they are much more comprehensive, job intensive, and have much greater environmental benefits.

If we're going to have a coal ash reuse industry in Latrobe Valley then we have to know whether it's safe. This includes making sure the EPA develops coal ash reuse guidelines for brown coal ash, and that the community has access to coal ash information including how toxic it is and how it can be safely used. Otherwise, we don't know if we're just creating another problem for our health and our environment down the track.

4.3. A clean environment to support healthy community.

One of the initiatives to come out of the Hazelwood Mine Fire Inquiry was the creation of the Health Innovation Zone (**HIZ**), Assembly and Advocate. Many people had a lot of hope about what the HIZ meant for the Latrobe Valley and it has done a lot of good work. But one thing the HIZ doesn't do, and that the Assembly and Health Advocate don't do, is take environmental pollution into consideration as an impact on people's health.

Environmental pollution, such as air pollution, can and does have a poor impact on people's health. It can and does cause asthma attacks, higher rates of childhood asthma, cancers, heart diseases and stroke. We are often told that if we got more exercise or eat less junk food then we would be healthier – and that's true. But it's also true that if the environment that we live in has high rates of pollution then it's really hard to escape toxins that we have no control over.

The good news is that the HIZ can be implemented into the Latrobe Planning Scheme – our local planning law – so that it has to be taken into consideration whenever anyone wants to build a new polluting industry. It could also contribute to making sure environmental remediation is undertaken in a thorough way. And it could help inspire the EPA to make sure that those who make the pollution are controlling the pollution as much as possible.

²⁹ See: Northern Resource Plains Council and International Brotherhood of Electrical Workers Local Union 1638, *Doing it Right: Colstrip's Bright Future with Cleanup*, 2018, available at: https://northernplains.org/wp-content/uploads/2018/07/DoingItRight_FullStudy_FNL_WEB.pdf; Northern Resource Plains Council, *Doing it Right II: Job creation through Colstrip cleanup*, April 2019. Available at: https://northernplains.org/wp-content/uploads/2019/04/DIRTII_FINAL_WEB.pdf; Northern Resource Plains Council, *Doing it Right II: Job creation through Colstrip cleanup*, April 2019, available at: https://northernplains.org/wp-content/uploads/2019/04/DIRTII_FINAL_WEB.pdf.