

## In Context

Bathurst Community Climate Action Network was a witness and made a submission to the NSW Public Works Committee 'Inquiry into the costs for remediation of sites containing coal ash repositories' in 2020. In its Final Report, the Committee acknowledged the great financial, environmental and health burden that the coal ash by-product entails. For example, there are known cumulative effects in NSW of leaching of heavy metals into waterways, moving into food chains, affecting fish, birds and the broader ecology. Human health is also impacted.

Hunter Community Environment Centre (HCEC) was another contributor to the inquiry. In their document 'Clean Up Coal Ash', we read, with regards to the Lithgow area, that:-

- There is now approximately 28Mt of dumped coal ash in the Lithgow area, 15Mt of it at Mount Piper. This covers many hectares (page 4).
- An estimated 9.6Mt of extra ash is projected to be accumulated before closure of the Mount Piper power station (page 4).
- As coal continues to be used for power generation, so the size of the repositories is increasing. Of the coal ash produced at Mt Piper at the moment, about 0.17Mt is re-used, and 0.4Mt dumped annually (page 3).
- For the year 2018/19, some 249,946kg of heavy metals were reported as added to 'on-site tailings storage' by Mt Piper's owner to the National Pollution Inventory (page 19).
- There is evident present failure of ash dams, as noted in pages 33 – 40.
- It details testing of 24 parameters across 7 sites from Sawyers Swamp Creek to west of Mt Piper. It shows how heavy metals at times greatly exceed ANZECC triggers and NSW EPL 367 limits (page 39).
- Disturbingly, HCEC estimated that the Mount Piper storage of accumulated ash annually leaches 10,423kg of National Pollution Inventory (NPI) reportable metals, and a total of 20,560kg of metals (page 7). There are also much smaller estimated quantities of NPI reportable and other metals leaking from the old Wallerawang ash repositories.

The present closed coal ash placements are leaching, and will continue to leach for an indeterminate time. No impermeable liners were attempted to be used for any of these dams. It seems that these leaks cannot be sealed, as they can be from multiple positions and at depth, and the repositories cover a large area. How many leakage spots might there be from the 3 present repositories (Lambert North, Lambert South, Mount Piper)? It is not feasible to excavate these present dumps, line them and re-deposit the ash, plus suitably dispose of other possible contaminants found in the emplacements.

These present leaks will likely take hundreds of years to fully discharge their heavy metal burden into the environment and waterways. Leachate borne in water can likely migrate via strata for long distances. Interception is helpful, but cannot fully guarantee to capture all leachate. This makes elimination of production of coal ash all the more important.

As noted in the 2021 Report of 'NSW Public Works Committee Inquiry into the costs for remediation of sites containing coal ash repositories' there are many sites of coal ash in NSW that have been contaminated with other items, hence making the ash unsuitable for later recovery and re-use.

Burning of coal releases the heavy metals which have been concentrated and nearly completely immobilised in the seams for at least 150 million years. By far the best way to eliminate the coal ash problem is to not burn coal.

## Particular comments on Energy Australia's Report

Use of lining and improved leachate management are welcome positive steps.

On page 19, the 'Historic Mine Working Footprints' diagram shows Western Main Underground Workings footprint in pink cross-hatching, which is shown as underlying most of the proposed LNAR. Do the old underground workings now contain voids or unstable material? I could find no discussion about the strength of the underlying old workings in supporting the weight of the LNAR.

Taking into account the geology and stability of this site, what is the appropriate buffer height between underground workings and/or voids and overlying coal ash emplacements? Could there be stress on the integrity of the voids,

and/or the strength of the lining? Is the lining flexible? How can any perforations and damage to the liner be found and fixed? What is the life of the liner, as these ash placements may not be accessed for re-use for an indeterminate time?

Also, 'There is a small area near the western boundary of the LNAR that retains some of the remnant pillars from historic underground mining activities (Figure2-1)'. (2.1, page 18 of Report). Is there the possibility of hydraulic linkages between these old workings and any old underground voids/unstable material they contain, to the proposed LNAR? Are the underground voids lower than the proposed depth of the LNAR, rather than adjacent to it? If so, could this place extra stress on the integrity of a full LNAR?

Is there adequate provision for possible vibration, subsidence and earthquake? Does there need to be a further Geotechnical Report?

Energy Australia's Modification Report, point 1.3, page 5, says 'Energy Australia(EA) has been investigating groundwater and surface water in the vicinity of the repositories...(they) indicate that the current practice may not be successful in restricting the escape of leachate into the surrounding environment.' EA acknowledges failure of the present dumps to contain leachates.

In the Modification Report, Energy Australia adopts risk minimisation as is best known, but it cannot remove all risk.

## Recommendations

Although there are big opportunities for coal ash re-use, the time frame needed to implement this does not address this present application.

Recommendations:

1. That coal power be established as a last-resort source of dispatchable energy, so as to reduce the production of ash; and that this condition be written into approval for this Modification, so that it does not oblige the government to give maximum life to the power station.
2. That there be a timeline for the closure of Mount Piper.
3. That all of the station's land, air and water emissions are publicly, and at least annually, reported.
4. No company should be allowed to close and leave a power station until the site/s involved are completely remediated.
5. That re-use of coal ash be encouraged.

The environment keeps full account of pollution effects, and it does not, indeed cannot, forget.

The people of the Lithgow area have paid, and continue to pay for, the damage from coal ash and the neglect of abandoned sites.

## References:

NSW Public Works Committee Final Report: "Inquiry into the costs for remediation of sites containing coal ash repositories" <https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2556#tab-reportsandgovernmentresponses>

Hunter Community Environment Centre: "Clean Up Coal Ash" <https://www.hcec.org.au/research-and-reports>