Submission No 79

INQUIRY INTO COSTS FOR REMEDIATION OF SITES CONTAINING COAL ASH REPOSITORIES

Organisation: Nature Conservation Council of NSW

Date Received: 20 February 2020

Nature Conservation Council
The voice for nature in NSW

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Submission: Costs for remediation of sites containing coal ash repositories

About us

The Nature Conservation Council of NSW is the state's peak environment organisation. NCC represents over 150 environment groups and thousands of supporters across NSW. Together we are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW.

Overview

Coal ash waste practice in NSW lacks regulation and transparency, creating a large risk and liability for the NSW government, communities and environment. Specifically these risks relate to human health, environmental contamination, and potential for environmental disasters.

There are five operational coal ash repositories in NSW that reside nearby the coal-fired power stations of Eraring, Mount Piper, Vales Point, Liddell and Bayswater. There is also an unrehabilitated coal ash repository nearby the Wallerawang power station. All of these repositories are impacting nature and communities in a number of ways that we have explored in this submission.

Key concerns

Impacts of toxic waste from coal-ash

Coal ash creates an enormous waste issue for NSW. Coal ash accounts for nearly one-fifth of the entire nation's waste (EJA, 2019). Australian power stations produce an estimated 10 to 12 million tonnes of coal ash annually, and Australia has well over 400 million tonnes of ash currently stored in dams (EJA, 2019).

Despite this large volume and the hazardous nature of coal ash its disposal lacks adequate safeguards to protect communities and environmental health. It is toxic and if not carefully disposed of can contaminate air, soil and water.

Even when using best practice disposal methods, there remains a significant risk of contamination to the NSW environment and communities. The NSW Government should work to carefully and strictly manage existing coal ash dumps and rehabilitate closed dumps to minimise the risk posed to NSW nature and communities.

Coal ash reuse

Australia has very low rates of coal ash reuse compared to other countries. Only 25% of ash generated each year by Vales Point and Eraring is reused (HCEC, 2019). Rather than leaving large volumes of coal ash in unregulated landfill to indefinitely pollute, there is a significant opportunity to generate economic activity and jobs in the re-use of this ash in encapsulated products like bricks.

There are emerging technologies that transform coal ash into lightweight aggregate for the building industry, where coal ash is incorporated into a solid substrate such as concrete, bricks and tiles (Stewart, 2020) (BZE, 2017). This is the least harmful fate of coal ash as this practice is safer than other forms of reuse as the potential leaching of toxic chemicals to water or the re-emission of particulates to air is greatly reduced (EJA, 2019).

Fly ash can actually improve certain properties of concrete, as it has major greenhouse gas savings (HCEC, 2019). Globally, the manufacture of cement produces more greenhouse gas emissions than any other single product – about 3 billion tonnes per year, or 8 percent of the world total (HCEC, 2019). In Australia, production of Portland cement – the most basic and the most commonly used cement – is responsible for 7.4 million tonnes of emissions, about 1.3 percent of national emissions (HCEC, 2019).

However, there are a number of factors that impede coal ash reuse including the vertical integration of the cement industry, transport costs, and the inelastic demand. These factors hamper price competition (HCEC, 2019). Reducing these barriers is critical, and the Government should invest in researching methods to incentivise coal ash reuse.

Hunter Community and Environment Centre's *'Out of the Ashes*' report stated: *"Currently, power station operators have little to no incentive to increase ash reuse or to ensure that coal ash contracts are let to users and marketers with the most capacity and incentive to reuse coal ash."* In their report they put forward the solution to charge power station operators a levy per tonne on coal ash waste. This could be achieved through the imposition of an EPA regulated Load Based Licence levy. This would provide a powerful motivation for coal stations to increase coal ash reuse.

Contamination of nature and waterways

The standard treatment of this toxic waste in Australia is to mix it with water and then pipe it to nearby ponds and dams that haven't been built to protect groundwater and surface water (EJA 2019). This practice can lead to toxic heavy metals and other pollutants in coal ash entering groundwater, surface water bodies, soil and air, risking human health, aquatic life, birds, wildlife and water quality (EJA, 2019)

Many coal-fired power stations sit near recreational lakes and reservoirs - such as Lake Macquarie on the NSW Central Coast. The Eraring and Vales Point power station reside by

Lake Macquarie, neither of which are lined to protect groundwater. The groundwater at Vales Point and Eraring has been found to be contaminated (EJA 2019).

Hunter Community Environment Centre (HCEC) has documented the effect of the Vales Point and Eraring ash dams on heavy metal pollution in Lake Macquarie. Water samples from Lake Macquarie taken near to Vales Point power station were found to be contaminated with copper, nickel, and zinc at concentrations that exceeded Australian and New Zealand Environment and Conservation Council (ANZECC) (2000) trigger values for marine waters.

All five samples near Eraring power station were found to be contaminated with copper, lead, nickel and/or zinc at concentrations that exceed the ANZECC trigger values for maine waters. Concentrations of selenium in the water discharged from Vales Pt into Lake Macquarie are increasing to levels 55 times the level recommended to protect sensitive fish and birds (HCEC, 2019).

The Wallerawang Power Station was permanently retired in 2014, but the ash dam has never been decommissioned.

An EPA audit report found they were discharging too much acid and sulphur into the Cox's river which flows into Sydney's drinking water (EPA, 2016). It's been over five years now and yet there is still no plan, nor requirement for remediation of this toxic site by the owners.

Governments must make coal-fired power stations clean up their act. The NSW Government should introduce mechanisms that hold coal-fired power stations accountable for the pollution and contamination caused by coal-ash dumps. Cleaning up existing contamination is critical to protecting water sources, preventing air pollution, and planning future land use.

Access to information

As laws currently stand, there is a lack of publicly available information on coal ash dumps and how they are managed.

This is particularly significant, as communities living near coal ash dumps are at great risk of exposure to toxins. The toxins in coal ash have been linked to asthma, heart disease, cancer, respiratory diseases and stroke. A United States Environmental Protection Agency risk assessment found that living near unlined ash dumps increases the risk of damage to liver, kidney, lung, and other organs as a result of being exposed to toxins at concentrations far above safe levels (EJA, 2019)

The public has a right to know about coal ash dumps and how they are managed to protect their health. Currently this information is only available through lengthy and expensive Freedom of Information procedures. It is highly concerning that comprehensive information about coal ash dumps is not readily available to the Australian public. Communities have a right to know this

information and should be included in decisions regarding ash dumps including expansion, rehabilitation, closure and post closure planning.

Liability for NSW State Government

The state of NSW coal ash dumps opens the NSW Government up to massive liability. Unlike most landfill sites, coal fired power stations are not required to provide financial security for the rehabilitation of coal ash dumps, leaving taxpayers exposed to the cost of clean-up.

The Eraring coal ash dam wall holds about 35 mega tonnes of coal ash. A truly frightening fact given experiences of coal ash dump containment failures in the USA, such as the 2008 Kingston Tennessee catastrophic coal ash dam collapse, where 5.4 million tonnes of coal ash sludge flooded an area of 300 acres (National Geographic, 2019). The toxic sludge swept away multiple houses, filled two rivers, and destroyed a residential community. Clean up cost over US $1 billion and more than 30 clean-up workers died of illnesses from toxic ash exposure during the clean up. More than 200 workers remain ill, ten years after the disaster (NRDC, 2018).

For both the Eraring and Vales Point power stations the Government is liable for pre-sale contamination of their coal ash dams. The Government should reflect on the international coal ash disasters and ensure they take every possible measure to mitigate this risk.

<u>Summary of recommendations</u>

Broadly we support the recommendations being put forward in the submissions of Environmental Justice Australia and Hunter Community Environment Centre, and acknowledge the role they have played as experts on the impacts of coal ash dams in NSW.

Specifically Nature Conservation Council of NSW recommends the NSW State Government:

1. Develop coal ash dam specific regulations under the *Protection of the Environment Operations Act.* These regulations at a minimum should be:
    a. Consistent with international best practice ash repository management and remediation.
    b. Applied to both active and inactive, open and closed ash dumps.
    c. Developed in consultation with impacted communities.
    d. Enforceable by the NSW Environment Protection Authority.
2. Commit to protecting nature and communities from coal ash contamination by:
    a. Requiring all ash dams to be lined and to be leach proof.
    b. Re-siting, reconstructing and comprehensively decontaminating the poorly constructed ash ponds of Vales Point and Eraring power stations.
3. Fund research and incentivise coal ash reuse by:
    a. Imposing a $20 a tonne minimum load based licence fee on all coal ash disposed of in repositories.
    b. Funding research into coal ash reuse in collaboration with industry.
    c. Providing incentives based on this research for environmentally safe coal ash applications that result in large volumes of ash being removed from ash dams.

4. Increase public access to information by:
    a. Developing mechanisms that require the NSW EPA to publish and make public annual reports on the reuse of coal ash from all repositories, including the quantity of coal ash generated at each power station, the destination and purpose of all coal ash transferred for reuse.
    b. Developing mechanisms that require ash dam operators to report annually on the testing conducted on coal ash reused for other purposes.
    c. Providing public access to all groundwater monitoring data.
    d. Releasing annual reports to the NSW Parliament that quantify the state's liability for remediation and rehabilitation of coal ash dams.

I trust that this information is of use to the committee and would be happy to expand on these points at a hearing. Please contact Liz Hadjia if we can be of any further assistance to the committee.

Yours sincerely,

Chris Gambian
Chief Executive
Nature Conservation Council of NSW

References

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