

**Submission  
No 52**

**INQUIRY INTO COSTS FOR REMEDIATION OF SITES  
CONTAINING COAL ASH REPOSITORIES**

**Name:** Mr Adrian Spicer

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To the Honorable Members of the Committee,

My name is Adrian "Aj" Spicer and I am 34 years old and unemployed while I apply for the Disability Support Pension. I suffered a stroke at the age of 29 and I have continuing effects that have reduced my capacity for work, study and social activities. Need less to say a stroke at in my 20's was statistically rare, unexpected and life changing. However, thought the doctors could not find a definitive cause for my stroke, I did not think my sleepy little home town of Dora Creek could have anything to do with it. Until recently.

I have recently returned to Dora Creek to be closer to my family as they assist me financially, emotionally and logistically during this tough time in my life where my capacity is limited and variable due to the chronic fatigue, constant pain across the left side of my body and sensitivity to visual stimulation I continue to experience due to my stroke. As I planned my return to Lake Macquarie I discovered that the Sport and Recreation Camp at Myuna Bay had been closed down, overnight and without community consultation.

After a bit of research online I discovered that the camp is at risk of being inundated with coal ash in the event of the nearby dam failing during an earthquake. I followed my nose through the internet and discovered the contents of the dam is Fly Ash. Fly ash contains poisonous heavy metals such as Mercury, Arsenic and Cadmium. I also found a report "out of the Ashes" (HCEC) which outlined just how much of these Elements have leached from the ash dam into grown water and has found its way into the fish and crabs of lake Macquarie.

After attending a community forum regarding the Coal ash and the pollution from both Erraring and Vales Point ash dams I learnt of the possible health risks of heavy metals both in the fly ash dam but in the surrounding air soil and water. These health risk include stroke and some forms of cancer. This hit home for me for not only did I have a dramatic health scare myself at a young age but my younger step brother, who's mother lived in Dora Creek during the pregnancy his infancy, was Diagnosed with Leukemia a week after his 21st birthday.

As I investigated how Origin are processing the fly ash I discovered that it is now illegal for them to sell it to use as road base. However, through this small amount of internet research I discovered there are better processes and technologies that can be implemented to not only remove the ash from the dam but trap the heavy metals preventing them from contaminating the human habitat.

I have been interested in architecture and "new" technologies for quite a while as prior to my stroke I was half way through a 3D animation and Games Design degree and some of the possible career paths I investigated involved 3D printing or 3d design of "built environments", city planning, architecture etc. one design principal I discovered and found appealing was "Cradle to Cradle" or sometimes referred to as "circular economy". Which ever term is used, the fundamentals are quite simple "waste become food"

Waste to food means a shift in how we view the products that produced so that any "left over" material from the production process should be brought into the manufacturing of additional products that benefit people. With this in mind, I applied the Cradle to Cradle logic to the power generation at Australia's largest power station that looms over Dora Creek. Electricity is not the only product that is produced but rather electricity AND heavy metal laden fly ash.

Metals like Cadmium, Selenium and Copper have inherit value, buildings under construction are often striped of their copper piping by opportunistic thieves yet the the amount of copper that is

released into Lake Macquarie each year by the power station is in the hundreds of tons! What is preventing the maximization of benefit from the "bi-products" of electricity generation but a lack of scope and imagination?

One of the most promising products that could be made from fly ash is a concrete that has the unique property of being fire proof and does not absorb heat. In addition to this the process of curing the concrete in a pressurized, steam filled environment, changes the molecular structure so that it traps heavy metals within the product. Imagine park benches, bus stops, train platforms and other public spaces that utilize a concrete that not only removes poisonous contaminants from entering the lake but also are cold to the touch during the hottest days.

Now this to me sounds like a "win win" and gives me a little hope for the future but I understand that business and government don't tend to be guided by the health of a single individual, or the hopes of a technology enthusiast but it is clear to see there is economic value to be made in cleaning up the coal ash. Not only can fly ash bricks find a significant niche in the market but there are seaweed strains that can be used to filter out metals from the waters of Lake Macquarie that can be used for bio-fuel, fish food for aquaculture and even carbon sequestration.

There are some road blocks to creating industries and viable products that use "waste as food" and most of them I see are government regulations and regulations. For one, any by product of electricity generation is not classified as Waste. This clever loophole allows the operator of the power station to dump the fly ash into un-lined dams that allow the air, soil and water to be contaminated. This also means they are not required to release any testing of contents of the dam or contamination from the dam in the surrounding air, soil and water.

Another is the deal between the power station owner and the purchaser of the fly ash, Fly Ash Australia. They have exclusive rights to the fly ash but do not produce fly ash bricks and use far too little to make an impact on the fly ash kept in the dam, in fact the dam is set to expand. Breaking this monopoly will allow new and existing businesses to process and remove the fly ash whilst creating products that do not impact human health.

Not only does the contamination from fly ash pose a risk to human health but also will impact the tourism and recreational economy of communities surrounding fly ash dams, the sediment is toxic, the crab and fish population is contaminated well above what is considered "safe". During my life when ever I have told people I'm from Lake Macquarie they often reply "I love visiting Port Macquarie!" what will the impact on the tourism trade there be once people in Sydney or Brisbane find out about the high levels of heavy metals in "that lake near Newcastle"?

As I am not working due to the fatigue, visual sensitivity and constant pain I live with every day I have some time that I am willing to dedicate to raising awareness of the health and social impacts of having fly ash contaminate the human habitat. I have experience in a government funded community development non for profit in the education sector and I will look to build a community run non for profit that will focus on the removal and re-purposing of the fly ash as well as the potential for new industry that utilizes the existing infrastructure that surrounds the power station.

I would hope that the state government assist in this and any other effort to remove the fly ash from any community that is affected. Some of the ways I think state government can do this are as follows;

-Close the loop hole that does not classify fly ash as the poison that it is.

-Require the operators of fly ash producing businesses to publicly publish contaminate levels in the surrounding air, soil and water

-Break the monopoly for the use of fly ash

-Use Fly ash products in public construction projects

-Encourage private construction to utilize Fly ash products specifically and Cradle to Cradle more broadly

-Fund community groups that have a focus on coal transition, mine or industrial land regeneration

-Offer incentives for new businesses that use industrial waste as a raw material or technologies that reduce contaminants in the human habitat.

-Increase health funding or, at least, fund studies into the health conditions surrounding fly ash dams

I will be following up with each of the Honorable members that sit on this committee as well as continuing to reach out to stakeholders in the local civil, commercial, industrial, health and educational communities to raise awareness of this issue and perhaps kick start a move toward job creation through the fly ash removal and re-purposing.

I would like to attend any of the public committee hearings and am willing to present my submission in person. Please keep me informed of the committee proceedings and outcomes. I look forward to meeting each of you personally.

Warmest regards  
Adrian "Aj " Spicer