

Personal response to the Waste to Energy proposal for Eastern Creek, Sydney.

16 November 2020. Dr Ben Ewald B.Med, ,PhD

Introduction

The proposal "Cleanaway's western Sydney energy and resource recovery centre" has some aspects that are environmentally beneficial, but on balance we do not think that the current proposal can safely be operated over the long term.

The environmental benefits include reduction of waste going to landfill, and the displacement of a relatively small 59 Mw of generation capacity that would otherwise come from coal which harms the climate and creates air pollution. The waste stream for incineration is the balance after a very disappointing 5% has been recovered for recycling.

The proposal is technically sound if operated perfectly in an ideal world. After incineration of waste the combustion gases are treated sequentially by a semi dry reactor, bag filters, then a wet scrubber. In the semi dry reactor Selective Non Catalytic Reduction with injection of ammonia gets rid of the oxides of nitrogen. Hydrated lime and activated carbon are injected to react with acid gases, and contaminants such as heavy metals. These then form particles that are captured in the bag filters. This is followed by a wet scrubber that removes some things missed by the filters such as the finest particles and residual gaseous contaminants. When operating properly this should remove all important pollutants down to acceptable levels.

I see three main problems:

1)

This facility is designed to incinerate at 850 degrees, which is acceptable under the NSW Energy from Waste policy only if the waste stream contains less than 1% PVC. That policy states:

"Must reach 850 C for 2 seconds, but this is 1100 degrees if there is more than 1% halogenated organic substances."

One of the common plastics in the waste stream is PVC, a halogenated organic substance, which forms dioxins if incinerated incorrectly. PVC is the plastic used for plumbing pipes, vinyl flooring, furniture, electrical insulation and household items such as shower curtains. This plant does not meet the NSW policy as there is no provision to measure or limit PVC content of the waste stream, and the combustion temperature is 850 not 1100 degrees.

2)

The waste stream from a 3 bin council system is deemed adequately sorted to be burned in the facility. This assumes that every person follows all the rules and does not dispose of any inappropriate items in their bin. There is no system to prevent people disposing common domestic items like used lead acid car batteries, fluorescent light bulbs that contain mercury, nickel cadmium batteries, or pool chlorine. These items will produce high levels of contamination that could overwhelm the pollution control systems.

The measures to reject unacceptable waste are inadequate.

To quote the EIS:

"Unacceptable waste is waste that will not be accepted by the facility."

Unacceptable wastes include:

- Hazardous waste, as defined by the NSW waste classification guidelines
- Medical waste
- Asbestos
- Liquid and oily wastes
- Contaminated soils
- Tyres
- Animal carcasses
- Waste with a chlorine content of greater than 1%
- Separated recyclable materials or separated FOGO waste
- Any car or industrial batteries or concentrations of disposable batteries
- Concentrations of lightbulbs or other electrical wastes
- Materials excluded from the facility by any operating license or approvals provided by a regulatory body in New South Wales
- Highly corrosive or toxic liquids or gases such as strong acids or chlorine or fluorine
- Construction and demolition (C&D) waste.”

The method to identify and reject unacceptable waste is to check the paperwork for each truck of waste, and then if visual inspection is thought necessary to tip it out on the floor of the receiving area for visual inspection. This seems quite inadequate. How does a staff member identify a car battery in the middle of 10 tonnes of rubbish?

3)

The track record of enforcement of environmental laws in NSW is poor. No company executive has ever been gaoled for breeches of environmental regulations. The common punishment is a \$15,000 fine which is a tax deductible business expense for the company. It is easy to foresee that after a few years operation there could be breakdowns in operating procedures such as:

Lax enforcement of the unacceptable wastes policy. It is in the company's financial interest to accept every truck load, and when it seems no one is looking it is predicable that standards will slip.

Poor maintenance of bag filters. These periodically wear out and take time and money to repair, so cost cutting could lead to delays in noticing or replacing damaged filters.

Conclusion

Incineration is a very low ranked option on the waste management hierarchy, below recycling and only one step above land fill. No evidence is presented that the waste stream will be less than 1% PVC, so the incineration temperature is inadequate to prevent the production of dioxins. Our main concern is the inadequate measures to exclude unacceptable waste from the feedstock, with the current proposal prone to human error or incompetence. Maybe if the proposal was relocated to Macquarie St one could be more confident that ongoing operations would be conducted in an environmentally safe manner under the watchful eye of regulators.