Submission No 137

INQUIRY INTO PROPOSED ENERGY FROM WASTE FACILITIES

Name: Name suppressed

Date Received: 8 October 2025

Submission regarding :Veolia Woodlawn Advanced Energy Recovery Centre

Topic area: Total CO2, GHG emissions Carbon Accounting

Project: " Construction and operation of an energy recovery facility with a capacity to thermally treat up to 380,000 tpa of residual municipal solid waste and commercial & industrial waste and to generate approximately 30 MW of electrical energy".

Quotes

- ES2.2 It is estimated that three tonnes of residual waste replaces one tonne of coal, delivering a low carbon energy solution , whilst reducing the need for landfill".
- From Appendix Q GHG impact assessment.

There is no consideration of the construction phase GHG emissions it impact being dismissed "given the short term nature of construction, the relatively low emission rate, and conservative nature of the operational assessment".

Comment: Clearly there will be negative impact from use of large volumes of concrete, machinery, road construction, culverts etc; neat "sweep under the carpet"! Did calculation based on 200mm thick concrete and scaled area of 12960 m2 and only found 1060 tonnes of CO2 released. This is only about 25 cars emissions per annum.

Comment: They are stating that the export of electricity to the grid was considered as a "GHG" offset. The value of this offset depends on the amount of electrical power consumed by the ARC plant itself and the residual amount for export to the grid.

They use a 3 level scenario thus:

Baseline: Total operational GHG emissions (scope 1,2,3) for a baseline scenario (no ARC) 117,228t CO2 equivalent. This represents the current operation of the plant

Level1: operational GHG emissions for a scenario 1 (no ARC) 238,072t CO2 equivalent. Here the waste is sent to the bioreactor up to existing approved limit of landfill (1.1 Mtpa)

Level 2: Here a proportion (approx 33%?) of waste is diverted to the new ARC. The estimated GHG is 323,850t CO2. It is the inclusion of electricity generation which they cite as giving a net operational GHG emissions of 71,828 CO2 equivalent per annum. So 323,850 – X = 71,828 i.e 252,022t CO2 GHG emissions per annum are saved by the use of the ARC to generate electricity.

They argue that the 71,828 CO2 emissions represent only 0.01% of the national GHG emissions and 0.05% of NSW emissions. They state these are not significant.

They state that GHG emissions intensity of electricity generated by the project is 0.64 Kg CO2 per KWh, and this lower than the NSW grid value of 0.85 kg CO2 per KWh. Using these figures for a full year I calculate 168,192 tonnes of carbon are released to the atmosphere by the ARC.

NB. Wind energy produces around 0.011 Kg of CO_2 per KWh. So for 30MW we would have only 2,890 tonnes of carbon released, a factor of 1/58!

NB. NSW government is committed to a 50% reduction in emissions by 2030 and the largest coal mine in NSW will close by 2030 (source NSW Climate and Energy Action); indeed the Eraring coal fired power station (2800 MW) is also due to close in 2025.(source Chris Briggs University of Technology Sydney). Hence its not relevant to use coal fired generation as a comparison for this project, and as the projected life of the ARC is 25 years clearly this plant will be highly inefficient compared with the latest renewable power sources coming on line within a decade.

There is some confusion here: parts of the appendix state 240,000 MWh, while the design output is 28.42 MW (not 30 MW). Appendix R on life cycle analysis states that " Accounting for parasitic loss, the exportable electricity is expected to be up to 219,830 MWh, using this figure the power actually available to export is a maximum of 25.1 MW (based on a 24/365 year). Allowing for maintenance and annual shutdowns what is the likely lower figure?

Appendix R states that the proposed residual MSW and C&I waste based electricity production system has lower environmental impact than electricity production from coal, and biomass for all impact categories. They also state that the ARC will produce electricity with a lower environmental impact than natural gas except with regard to acidification.

The Appendix R makes the statement that there is avoidance of biogenic methane arising from the decomposition of MSW and C&I waste as this is diverted from landfill to the ARC. Is this the 6.12E+02 Kg CO_2 equivalent referred to in table 10?

The Appendix R states that the annual savings are up to 395,034 tonnes CO_2 eq.

According to https://www.epa.gov the US EPA landfill gas (LFG) is a natural by-product of the decomposition of organic material in landfills. LFG is composed of roughly 50% methane and 50% carbon dioxide or CO_2 and small amounts of non-methane organic compounds. These other gases include ammonia and hydrogen sulphide. According to the New York State Department of Health www.health.ny.gov Important Things to Know About Landfill Gas landfill gases are released when bacteria breaks down organic waste. The amount of gas produced will depend on a number of factors including the type of waste present, the age of the landfill, oxygen content, the amount of moisture, and temperature. Increasing temperature, or moisture will increase gas production and although gases generally reach a peak in 5 to 7 years; LFG can still be produced from sites over 50 years old.

Clearly it is better to reduce the quantity of organic material going to landfill by separation at source. The organic waste collected in Sydney is part of the city's comprehensive approach to sorting the waste into three categories. As this procedure matures it should lead to greatly reduced volumes of organic waste being placed in the "general household" waste bin. The organic waste will be compostable

and hence part of the “circular economy”. At the same time the volume of LFG will gradually reduce as the amount of organic waste is reduced.

Appendix L (i) Waste Feedstock analysis

The argument is put forward that the Woodlawn Advanced Recovery Facility (ARC) will be an integral part of Eco Precinct as this will extend the life of the Bioreactor by reducing the volume sent to it. Furthermore it is argued that the facility would be a receiver of waste caused by a natural disaster, and without the ARC the Sydney Basin putrescible waste capacity would be exhausted by 2036. Indeed the argument is also advanced that there would be an ample supply waste despite mandatory requirements and waste per capita reduction. There are graphs of waste feedstock assessment which suffer from heavily extrapolated data which of course cannot be substantiated. A counter argument is that this data is based on increasing population growth in the Sydney area which can be negatively impacted by socio-economic changes and by changes in consumer activities and a downturn in industrial & business activity. 3.1 table 6 states that population estimates were only available to 2041, and the population forecasts were extrapolated to 2050 using 2036-2041estimates.

In addition to the above, I feel this project would have a negative impact by causing a long-term degradation of local farmland. The plume from the stack will inevitably lead to pollution outside of the immediate operating area. Veolia’s record in the courts to date regarding leachate of run-off into the watercourses should be of great concern. This could adversely affect produce, such as eggs, vegetables, meat sold by the local farmers as people would be concerned about the effect of pollution on the food. Farmers would be concerned about the health of their animals ingesting pollution and it getting into the food chain.

A further consideration is the possibility of dioxins getting into the foodchain of native animals and birds. Dioxins are known to cause thin shells and deformed birds and although they have less effect on insects, there is bioaccumulation in the birds that are insectivores in particular. The threat to Australian biodiversity is well known and understood. This plant, when operating, will add a further threat to wildlife in general.