

INQUIRY INTO 'ENERGY FROM WASTE' TECHNOLOGY

Name: Name suppressed

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Submission to NSW Government
Inquiry into Energy from Waste Technology

Dear Committee members,

In relation to the above inquiry, I submit the following information for consideration and discussion;

- All incinerators (which includes gasification, pyrolysis and plasma arc technologies) are in fact a waste of energy. Due to the relatively low calorific value of waste, incinerators only make small amounts of energy while destroying large amounts of reusable materials.
- Burning waste for energy also drives a climate changing cycle of new resources being extracted from the earth, processed and shipped around the world, and then wasted in incinerators.
- Burning waste also pollutes people and the environment. Mercury, dioxins, lead, and other pollutants come from burning waste. In terms of climate impacts, incinerators emit more carbon dioxide (CO₂) per unit of electricity than coal-fired power plants.
- Energy from incinerators is not renewable. Paper and metals come from finite natural resources and plastics and tires are fossil fuels. Burning these resources creates a demand for 'waste' and discourages real waste management solutions.
- According to the IPCC Fourth Assessment report on Climate Change, "Waste minimization, recycling, and re-use represent an important and increasing potential for indirect reduction of GHG emissions through the conservation or raw materials, improved energy and resource efficiency and fossil fuel avoidance."
- The already well known Australian experience - The Solid Waste and Energy Recycling Facility (SWERF) The only gasifier to treat municipal waste in Australia was established in Wollongong, New South Wales in 2001. Proponents Brightstar Environmental and Energy Developments Ltd named the technology the Solid Waste and Energy Recycling Facility or SWERF. An

identical plant was proposed to be established Maddington, Western Australia at the same time but community opposition saw more than a 1000 residents turn out on the streets to protest against the facility. The Maddington SWERF was withdrawn shortly after.

The Wollongong SWERF was plagued by operational problems and emissions breaches during its three year 'test period'. Emissions breaches³⁰ included major exceedences of arsenic and SO_x, carbon monoxide over 13 times the German limit (50 mg/Nm³). The gasifier also produced significant emissions of dioxins, hydrogen chloride, hydrogen fluoride, polyaromatic hydrocarbons, hexachlorobenzene and heavy metals. In 2004, the SWERF facility was abruptly closed by its parent company EDL31 following withdrawal of funding for the project in mid-2003. Brightstar Environmental was also negotiating contracts to establish waste gasifiers in India, the UK, US and other Australian cities. These contracts were cancelled following the failure of the Wollongong SWERF and Brightstar Environmental no longer operates.

- In a UK government study¹ comparisons between landfill with gas extraction and waste incinerators generating electricity found that the climate change impacts of incineration were clearly worse.² While this is not an argument to suggest that landfill is environmentally acceptable it does cast serious doubts on claims that incineration of waste is anything other than an expensive and polluting waste disposal technology.
- Waste incinerators are widely documented as a source of air pollutants including acid gases, nitrogen oxides (NO_x), sulphur oxides (SO_x), heavy metals, particulates and persistent organic pollutants (POPs) such as dioxins and furans. Incinerator proponents claim to have reduced air emissions to acceptable levels over recent decades by installing very expensive pollution filters and scrubbers which are collectively known as APC (Air Pollution Control).

Zero waste is an achievable goal already being successfully implemented in cities around the world in stark contrast to the primitive idea of burning waste under the pretence of producing 'energy'.

¹ HM Customs & Excise (2004) Combining the Government's Two Health and Environment Studies to Calculate Estimates for the External Costs of Landfill and Incineration, December 2004

² Hogg, D., (2006) "A Changing Climate for Energy from Waste?" Eunomia Research and Consulting. May 2006.p 21.

In relation to placement of such a toxic ash incinerator within metres of homes, I submit the following information for consideration and discussion:

- The release of toxic air emissions from incinerators can have a significant impact on human health. Because toxic emissions can have a significant lag time or latency period before their human health impacts become obvious scientific studies have only recently emerged that acknowledge the scale of public health impacts from waste incinerators. A range of public health studies and contamination investigations related to waste incineration are outlined below. The public health impacts associated with incinerator technologies have been documented by internationally recognised scientists in the fields of respiratory and cardiac medicine and epidemiology.³
- Waste incinerators release a diverse range of toxic substances to the atmosphere. Some toxic compounds are short-lived and some are persistent and all have varying degrees of toxicity. Once released from an incinerator toxic materials may be carried long distances or deposited in nearby soil and surface water. How these toxic releases affect human health is difficult to assess as people may be exposed to multiple toxic compounds at one time and exposures may vary between individuals even in the same location. Some groups of people, such as young children, the elderly and immune compromised individuals may be more susceptible to health effects than others. There is also the issue of latency of onset of symptoms after exposure which can take decades. All of these issues make it difficult to predict health impacts of incinerator emissions and to attribute causality between an individual's sickness and a specific source of emissions. This can be complicated further by the presence of other polluting facilities or sources of pollutant exposure. Assessing the health impacts of emissions usually falls into the two categories of predictive assessment (health risk assessment) or epidemiological studies examining current or past population group exposures. Health risk assessment is a form of modeling often criticized for its high levels of uncertainty and inability to consider the impacts of chemical mixtures and cumulative impacts over time. Epidemiological studies are considered more reliable but usually identify population health impacts only after they have occurred.

The result is that it can be very difficult to assess the impacts of waste incineration until after they have occurred. Incineration proponents rely almost exclusively on health risk assessment when seeking regulatory approvals and this has been criticized by some health professionals.

The British Society for Ecological Medicine in their 4th report (2008) concluded the following in relation to determination of the health impact of MSW incineration:

'Typically this decision is based on an inexact method called risk assessment. They tend to rely almost exclusively on this type of assessment

³ British Society for Ecological Medicine (2008) The Health Effects of Waste Incinerators. 4th Report of the British Society for Ecological Medicine.

and often have little understanding of its limitations. Risk assessment is a method developed for engineering but is very poor for assessing the complexities of human health. Typically it involves estimating the risk to health of just 20 out of the hundreds of different pollutants emitted by incinerators.'

A number of waste incinerator proponents in Australia have pointed out that Japan, as an advanced industrialised economy, has numerous incinerators operating 'successfully'.

Japan has very limited space available for landfill and in the 1970's adopted waste incineration to manage its waste streams.

Now Japan has the dubious honour of being the largest waste burner of any country in the world with nearly 70% of the world's waste incinerators burning 70% of Japan's MSW. The price of this commitment to incineration has been high in terms of public health risk.

Japan now has dioxin contamination levels ten times higher than any other industrialised country and is now struggling to reduce dioxin emissions.⁴

A large cohort study in Japan has identified increased symptoms associated with proximity to waste incinerators, particularly in children.

*"The findings suggest that proximity of schools to municipal waste incineration plants may be associated with an increased prevalence of wheeze, headache, stomach ache, and fatigue in Japanese children"*⁵

Another study investigated an area in Japan near a MSW incinerator that had high levels of dioxin contamination in soil and an unusually high rate of cancer in residents.

*The study tested blood samples from 13 women and 5 men living within 2 km of the incinerator. Levels of dioxins were raised considerably in the residents compared to background levels found in the general population. For instance, women had an average blood level of 149 pg TEQ/g lipid and men 81 pg TEQ/g lipid, whereas the background level for the general population is in the range of 15 to 29 pg TEQ/g lipid. The authors commented that increased exposure in the residents was considered to be due to direct inhalation of dioxins from the stack gas of the incinerator and by intake of local vegetables contaminated by stack gas*⁶.

⁴ Corliss, M., (1999) Dioxin: Levels high in incinerator-happy Japan. Japan Times May 7

⁵ Miyake, Y., et al (2005) Relationship between distance of schools from the nearest municipal waste incineration plant and child health in Japan. European Journal of Epidemiology 20 1023-1029

⁶ Ohta S., Kuriyama S., Nakao T., Aozasa, O. and Miyata H. and Tanahashi M. (1997). Levels of PCDDs, PCDFs and non-ortho coplanar PCBs in soil collected from high cancer-causing area close to Batch-type municipal solid waste incinerator in Japan. Organohalogen Compounds 32: 155-160

A 2013 study investigating health impacts from MSW incineration and hazardous waste treatment plants in Spain concluded,

“Our results support the hypothesis of a statistically significant increase in the risk of dying from cancer in towns near incinerators and installations for the recovery or disposal of hazardous waste”⁷.

Those townships in the proximity of MSW incinerators had the highest excess cancer mortality for populations of all the towns studied.

France also has a high proportion of waste incinerators compared to most other countries. Researchers conducted a study in the area of Doubs, eastern France, to investigate clustering of two types of cancer, soft tissue sarcoma and non-Hodgkin’s lymphoma, near to a MSW incinerator. The study was undertaken following a report of high dioxin emissions from the incinerator. The study found highly significant clusters of both cancers in areas close to the incinerator but not in other surrounding regions⁸

The NSW Government MUST consider current and relevant International research already available. Which highlights the health issues, the facts and fatal diseases acquired over time with previous similar incinerators to the health of the community. The residents of this development application live only metres from this incinerator development.

In addition, consideration for the following should also be heard:

- Lack of community consultation has been held by the applicant. There are many people living within metres of this DA who are not aware it is proposed.
- The applicant has had many EPA breaches, on the spot fines, contaminated land clean up notices, re diverting pollution into stormwater and many other EPA breaches (too many to mention). With such an important development there is no confidence within the community that the application (Mr Malouf) will ensure this incinerator meets ALL EPA guidelines and requirements now and into the future. There is no guarantee maintenance will be upheld and kept to ensure lack of pollution and toxic gases are kept to a minimum.

⁷ García-Pérez, J., et al (2013) Cancer mortality in towns in the vicinity of incinerators and installations for the recovery or disposal of hazardous waste. Environment International 51 (2013) 31–44

⁸ Viel J.-F., Arveux P., Baverel J. and Cahn J.-Y., (2000) Soft-tissue sarcoma and non-Hodgkin's lymphoma clusters around a municipal solid waste incinerator with high dioxin emission levels. Am. J. Epidem. 152:13-19

In closing, I will leave one important fact with the Committee.

We know now what they did not know then -

Asbestos containing products were popular and cost effective when manufacturers and builders began using asbestos for its desirable physical properties:

- sound absorption,
- average tensile strength,
- resistance to fire, heat, and electricity,
- and affordability.

It was used in such applications as electrical insulation for hotplate wiring and in building insulation. When asbestos is used for its resistance to fire or heat, the fibres are often mixed with cement or woven into fabric or mats. These desirable properties made asbestos very widely used.

Asbestos use continued to grow through most of the 20th century until public knowledge (acting through courts and legislatures) of the health hazards of asbestos dust outlawed asbestos in mainstream construction and fireproofing in most countries.

Concern of asbestos-related illness in modern times began in the 20th century and escalated during the 1920s and 1930s. By the 1980s and 1990s, asbestos trade and use were heavily restricted, phased out, or banned outright in an increasing number of countries. Banned in Australia in 1883.

The severity of asbestos-related diseases, the material's extremely widespread use in many areas of life, its continuing long-term use after harmful health effects were known or suspected, and the slow emergence of symptoms decades after exposure ceased, made asbestos litigation the longest, most expensive mass tort in U.S. history and a much lesser legal issue in most other countries involved. Asbestos-related liability also remains an ongoing concern for many manufacturers, insurers and reinsurers.

To date, The Australian Mesothelioma Registry reports that 641 Australians died from mesothelioma in 2014, the most recent public accounting of the disease. Those figures also indicated the disease toll was increasing over time, and different medical models point to a peak in deaths from mesothelioma between 2014 and 2021. The number of mesothelioma cases in the country is expected to reach 18,000, according to the Australian Institute of Health and Welfare.

The demographics of Australian mesothelioma patients are consistent with the rest of the world. Of those who died from mesothelioma in 2014, approximately 80 percent were men, and the age range of those affected was 70 to 79.

Warnings were raised, medical statistics proved asbestos caused fatal lung diseases but no one listened. 30 years on, and Australia is reaching 18,000 lung diseases cases from a product that wasn't researched properly.

Why would we even consider duplicating such a fatal health hazard in 2017?

The NSW Government MUST consider current and relevant International research already available. Which highlights the health issues, the facts and fatal diseases acquired over time with previous similar incinerators to the health of the community. The residents of this development application live only metres from this incinerator development.

Yours sincerely