ADDITIONAL SUBMISSION ON

NEXT GENERATION ENERGY FROM WASTE FACILITY, EASTERN CREEK

30 July 2015

Introduction:

Boomerang Alliance opposes the granting of a planning permit for the development of the proposed Next Generation Energy proposal at Eastern Creek. This submission is in addition to our original brief points and we appreciate the short extension granted.

The adoption of waste to energy (W2E) within NSW waste policy was only recent with its intent being:

> "Energy from waste can be a valid pathway for residual waste where:
> • Further material recovery through reuse, reprocessing or recycling is not financially sustainable or technically achievable; &
> • Community acceptance to operate such a process has been obtained."

Further, the policy highlights that "these outcomes are contingent on ensuring that any energy recovery proposals represent the most efficient use of the resource and are achieved with no increase in the risk of harm to human health or the environment. Clean air is fundamental to everyone's wellbeing: poor air quality can be particularly critical to the health of children and chronically ill and older people, as well as affecting the natural environment and amenity of communities."

Through this lens, Boomerang Alliance notes that it is inappropriate that Next Energy Generation is proposing that one of the first facilities which may be approved in NSW is:

- Is of a scale (500,000 – 1 million tonnes p.a.), unheard of in Australia – being some 250% greater than any facilities in Australia
- Targets waste streams which are completely outside of materials the NSW EPA has considered to be 'eligible fuels' i.e. "a low risk of harm to human health and the environment due to their origin, composition and consistency."

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- Is so large to force the waste industry to both accelerate their own competing W2E proposals and undermine the more expensive recycling process.

The staging and roll out of W2E facilities in NSW needs to be carefully managed – some proposals will be based on complementing a viable and sustainable recycling operation, where operators will seek to enhance their levels of resource recovery; others are simply motivated by the high waste levy in NSW i.e. a strategy to develop a low cost processing facility to avoid the payment of the waste levy.

Typically facilities that develop complementary facilities are operated in conjunction with facilities recovering material that maximise the commercial value of the product they receive, and there is a strong driver to pursue the waste hierarchy by recycling all materials available and process a small proportion of the material available to them. For example, the Sita ResourceCo alternative fuels business in Adelaide (that has been in operation since 2007) produces between 150,000 – 200,000 tonnes of Resource Derived Fuels (RDF) from a residual that represents around 10% of more than 2million tonnes of recyclate produced each year and results in less than 5% being landfilled. Similarly Visy Industries produce an RDF of around 100,000-200,000 tonnes per annum from single streams of recyclate (i.e. where the material being input is of a homogenous nature) from its Coolaroo & Campbellfield facilities – representing just 5-10% of its recycling output.

By comparison the Next Energy proposal to put more than 25% of the material it hopes to receive into a mixed waste fuel that will also generate a residual ash waste from the W2E Phase One plant of some 165,000 tonnes per annum plus the material it receives that is unsuitable for thermal processing (i.e. won't burn) or is at high risk of causing toxic emissions.

This demonstrates the facility's financial driver is more based on avoidance of the waste levy than the pursuit of a genuine resource recovery product – which is further underpinned by the fact that the proposal produces just 70MWe from an input of 552,000 tonnes of waste (consumes 7,885 tonnes of waste per MWe) compared to (for example) the Visy facility at Coolaroo which produces 33MWe of energy from just 100,000 tonnes of waste (consumes just 3,030 tonnes of waste per MWe). We would also question why there is a need to expand energy supply when generation capacity is declining due to reduced demand.

Facilities that have a commercial driver to avoid waste disposal charges rather than the pursuit of the highest order of recovery will always have a financial motivation to reduce their recycling in favour of the lower order of recovery apparent in the Next Energy proposal.

Poor Planning, Consultation and Transparency of Information:

The proposal is of a very poor quality in our opinion; not only is the information confusing in the way it variously switches between the proposed inputs and outputs between the stages of its rollout, it also fails to explain in a straightforward manner:

- The total tonnes received on the site by waste stream and material (which is a basic KPI of any legitimate recycling operation);

- What is currently recycled on the site by waste stream and material (again a basic industry KPI);

so that an assessment of what fraction of the Genesis facility receivals will actually be processed.

Further, what Next Energy describes as 'consultation' with the community is more accurately described as a 'sales pitch' involving slick and bullish videos, opinions on the operations impacts that are light on facts and appear to quite deliberately avoid factual information.

For example the FAQ on DADI's website answers the question 'will there be extra traffic with the following answer "Probably not as all of the fuel waste is already delivered to the adjacent Genesis Facility via Wonderland Drive and away from residential areas" despite the fact the proposal identifies that as many as 336 additional truck movements per day are anticipated (appendix R Traffic Report). Whether this impact is reasonable or not, it is apparent that the statement underpinning community consultation is quite deliberately misleading for nearby residents.

Similarly there is no independent performance data provided and when the proponents met with Boomerang Alliance's Convenor Jeff Angel they answered questions in broad terms only in what would be better described as an initial briefing rather than the standards of consultation we experience with most of the industry. While a visit to the existing facility was discussed but could not eventuate – it would not have added any further illumination.

At no point have the proponents acknowledged that Waste to Energy plants have had any pollution issues, nor have they openly described risk scenarios and how they would manage them (because they won't occur?) and finally the proponent has not disclosed its own regulatory record.

Specific Concerns

The following represents specific concerns Boomerang Alliance has in relation to the proposed performance and safety of the proposal:

1. The proposal exaggerates the amount of waste to landfill available to be diverted within the C&I and C&D streams. Using the data from the most recent National Waste Report the total remnant waste (nett of recycling, existing energy recovery and hazardous waste) is around 3million tonnes per annum (2010/11). Of that another 1million tonnes would need to be 'quarantined' to meet the NSW targets for C&I recycling (70%) and C&D recycling (80%). Further, the amount of waste generated in the Sydney Metropolitan Area represents 72% and obviously it must also be recognised that the metropolitan area has better recycling rates than regional and rural areas (where the levy is lower and the reprocessing costs are higher). Consequently, we would estimate that around 1 – 1.2million tonnes per annum is theoretically available for any W2E proposal. That the first of 14 WTE proposals we are aware of seeks to 'claim' it will capture and process between 80-100% of the remaining market is frankly ridiculous.

2. Any mixed waste stream has the potential to be contaminated with toxic materials as the input point cannot be controlled. Testing of emissions from the 'stack' only identifies toxic pollution after the pollution incident has occurred. Reflecting current best practice, each batch of fuel should be sampled in a lab prior to its use as a fuel.

   In particular there are a number of waste streams identified within the proposal where toxic contamination is common. Particularly shredder flock which commonly contains lead, mercury, solvents and brominated flame retardants.

   A briefing paper on motor vehicle waste by Sustainability Victoria in September 2014 outlines that "shredder floc typically consists of a combination of plastics, rubber, textiles, metals and inert materials such as dirt and glass, and is generally contaminated with heavy metals, mineral oils and hydrocarbons" and concludes that "the uncertainty regarding contaminant levels and high processing costs, at present, precludes shredder floc from being used in other products such as fascia or road base".

   Shredder floc is designated as a hazardous waste in Europe. It should be noted that toxic emissions could occur not only in its treatment but due to trace elements in produced fuel. Similar issues have been noted in other shredder floc sources including electronics, white goods etc.

   Given the proposal regularly cites its compliance to EU standards it is disappointing the proposals does not disclose the fact that in Europe, shredder floc is designated as hazardous waste.

3. Processing a mixed plastic stream poses significant pollution risks, the Oregon Chapter of Physicians for Social Responsibility who noted that:

   - "Lots of different additives are added to plastics as colorants, stabilizers, plasticizers, catalysts, fillers, etc., and new additives are constantly added. At least some of these additives are known to be neurotoxic, carcinogenic, endocrine disruptive or to cause other types of harm under some manufacturing, use, or disposal conditions";
   - "Some plastics contain more additives, and especially more additives known to be carcinogenic, neurotoxic, or endocrine disruptive. Of all the types of plastics, the most dangerous is polyvinyl chloride, or plastic #3, because it is manufactured with chloride, and because it requires more stabilizers and plasticizers (softening agents to produce flexibility)"; and
   - Other plastics that are especially likely to contain additives that are carcinogenic, neurotoxic, endocrine disruptive, and/or be otherwise harmful are plastic #6 (polystyrene) and some of the plastics in the catchall #7 category (e.g., polycarbonate).

4. The identification of significant plastics and glass in the proposed fuel mix will mean it is derived from used containers found on building sites, manufacturers etc. These containers often contain used chemicals, powders and flammable material. Once crushed during collection any remnant material will spread through the load of mixed waste and even if the contaminated container is recovered, the potential for a pollution incidence is high.

5. The EIS claims the current facility already achieves 75-80% recycling but it is very difficult to validate this. The claimed independent audits that verify this should be released in full.

   In particular it states early in the EIS that it will meet the state recycling target of 60% - however this is incorrect because the overall state target is 70-80% recycling and 75% for diversion from landfill. Note that energy from waste is not considered recycling and is excluded from the 70-80% target. The material components for recycling are C&D - 80%; C&I is 70%; MSW is 70%.

   A further issue that requires serious review is the production of 165,000t of ash (at the 500,000t input stage). The methodology to project the ash residual and its constituent nature is naïve – without a detailed specification of the materials that will be treated and its source (or waste stream) no-one can project either the volume of residues produced or its potential risks to the environment and human health.

   Additionally, the EIS speculates that this will be reused as road base – but it is far more likely to be seriously contaminated and landfilled. Consequently this tonnage should be deducted from the recycling claim.

6. The EIS does not consider substantially better recycling (now and in the future) as an alternative, but rather ignores such an alternative as it would work contrary to the proposal (energy from waste is not recycling). This is a serious concern as while the project starts at 500,000mtpa it seeks to double that amount and makes no mention of the long length of contracted supply (likely from a dirty MPC and largely subject to initial visual inspections) which would lock in such inadequate resource recovery technology. The proposal seeks to justify itself on the basis of reduced waste to landfill but this is a poor metric when placed in the context of the need to increase higher value resource recovery. The current state target of 70-80% recycling by 2021 – is highly likely to increase after that date.

   We have particular concern about the use of plastic film, dense plastics, paper and card (estimated to be about 120,000t in Stage 1 – see table 7, Appendix K, p28). These are eminently recyclable and improved recovery techniques could capture them for recycling.

7. The proposal seeks a major change to existing emission controls to the detriment of air quality in a complex semantic argument:

"10.4.3 CHLORINE CONTENT OF RESIDUAL WASTE FUEL The following is stated in the IED (Industrial Emissions Directive): “If hazardous waste with a content of more than 1% of halogenated organic substances, expressed as chlorine, is incinerated, the temperature has to be raised to 1,100°C for at least two seconds” In the NSW EfW Policy the following is stated: “If a waste has a content of more than 1% of halogenated organic substances, expressed as chlorine, the temperature should be raised to 1,100°C for at least 2 seconds after the last injection of air”

There is a small, but significant difference between these two texts, with considerable implications for EfW in Australia (“hazardous waste” versus “waste”). PVC is not classified as a hazardous waste in both jurisdictions. Moreover, the IED regulation is not concerned about “chlorine”, but about “hazardous waste with halogenated organic substances”. In the European EfW experience it has been found that EfW typically has to cope with concentrations of PVC of around 1% (MSW) with around 0.4% as background chlorine (not PVC related). Residual fractions from recycling, C&D and C&I can reach up to nearly 10% in the European experience. If TNG would find similar chlorine level of around 1% in MSW as per European experience, the current NSW EfW Policy would require burning at 1,100°C/2s instead of 850°C/2s.

Current technology (from all EfW providers) doesn’t allow efficient energy recovery at the higher temperature. In consequence, the energy efficiency requirement of R1>0.65 cannot be achieved. Hence, the NSW EfW Policy will contradict itself unless the wording is changed (back to the European IED). TNG believes that the text of the NSW EfW Policy needs to be amended to reflect the EU regulation and the European experience of safe EfW at chlorine concentrations of typically around 1% with some waste fractions up to 8%. The issue of chlorine is purely technical, e.g. the capability of the flue gas treatment to cope with short-term chlorine peaks as well as long-term chlorine concentrations – whatever level they are. The NSW EPA will consider this proposal of a change to the NSW EfW Policy as discussed with NSW EPA on 12th February 2015." (p116).

Boomerang rejects the proposal to weaken the controls. It further demonstrates possible additional weakening pressures in the future if imposed controls prove too difficult to maintain.

Jeff Angel

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