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Feedback to the *NSW energy from waste - options paper (December 2024)*

Introduction

The Australian Industrial Ecology Network (AIEN) welcomes the opportunity to respond to the *NSW EPA's Energy from waste (EfW) - options paper (December 2024)*. As an independent environmental peak body with over 15 years of experience in supporting industry pursue environmental excellence and promoting environmental values the AIEN appreciates the NSW EPA's intent to refine and modernise its EfW framework.

This submission supports all of the EPA's proposed reforms, including:

- Revisions to EfW precincts.
- Updates to the definition of thermal treatment.
- Flexible use of eligible fuels in on-site industrial energy systems.

The AIEN notes the following points within the "*NSW Energy from waste – options paper dated December 2024*"

- "At the current rate of waste generation, Greater Sydney is projected to run out of key landfill capacity by 2030. In some regional areas, like Coffs Harbour and Port Macquarie, landfill capacity is also likely to expire this decade."
- "NSW is making progress towards a circular economy. We are implementing strategies to reduce the volume of waste we generate and to reuse, repair and recycle what we can't avoid. However, we also need to make sure that we have enough capacity to safely manage our residual waste, material that we cannot recycle."
- "Our 20-year waste strategy, the *NSW Waste and Sustainable Materials Strategy 2041*, identifies that critical residual waste infrastructure is urgently needed."
- "The waste strategy identifies that a mix of residual waste infrastructure is needed this decade across NSW. This includes at least one large-scale regional energy recovery facility to reduce the need for additional landfill capacity. The waste strategy then projects that at least three large-scale regional energy recovery facilities will be needed by 2040."
- "Recovering energy from waste can be a legitimate and necessary residual management option where it can deliver positive outcomes for the community and the environment. It is important to get the settings right for the energy from waste framework so that we can enable this infrastructure and safely manage our residual waste in a more useful way than disposing of it in landfill."

History and Timing

The NSW EPA initially published its Energy from Waste policy around 2015. In addition, there have been many strategies and guidelines for the appropriate management of materials/resources within NSW. In the ensuing 10 (plus) years, the trajectory of waste management has been such that the NSW EPA now considers NSW has a waste “crisis”.

Considering the management and regulatory frameworks in place for over a decade, what factors have led to the current state of waste management in NSW? The AIEN considers it is incumbent upon the Regulator and the NSW Government to ensure that adjustments and enhancements to regulatory frameworks are made to navigate the state towards a resolution to the current waste situation.

The Energy from waste – options paper adds the *NSW Waste and Sustainable Materials Strategy 2041* has identified that critical residual waste infrastructure is urgently needed. Unfortunately, as matters stand, NSW has minimal experience or expertise in energy from waste infrastructure based upon the aggregate responses of product manufacturers, consumers, the resource management industry, Local Government thus far. The question must be posed; Exactly how will landfill deficits (particularly in Sydney, Coffs Harbour and Port Macquarie) be addressed by the proposed changes? It could be reasonably concluded the situation is bordering on irretrievable, given at least 10 of the 15 years for action (2015 to 2030) having expired, no facilities are planned, insufficient expertise exists within NSW and an approvals process applies that will inevitably ensure projects take a minimum of three to four years to implement.

The AIEN ran a series of national Energy from Waste (EfW) Conferences between 2014 and 2019 where all of the issues relevant adoption and rollout of EfW infrastructure was discussed. In particular, the broad industry-based acceptance of EfW being applied only to “residual” materials developed during the conference series. “Residual” materials being defined as those materials that can be separated from the waste stream and usefully value-added. Although the conference series was held in Ballarat each year, it would be possible to retrieve records that would indicate the level of participation from NSW EPA and the NSW Government more broadly.

If belatedly, it is of significance the NSW EPA would now state “Recovering energy from waste can be a legitimate and necessary residual management option where it can deliver positive outcomes for the community and the environment. It is important to get the settings right for the energy from waste framework so that we can enable this infrastructure and safely manage our residual waste in a more useful way than disposing of it in landfill.” This AIEN submission will now focus upon how the proposed changes within the Energy from waste - options paper will/could provide genuine impetus to the agreed objective(s).

Change 1 – Changes to Precincts

The AIEN notes the following quotations within the *Energy from waste – options paper* document dated December 2024:

“There are currently four precincts identified in the Protection of the Environment Operations (General) Regulation 2022 as areas that permit the thermal treatment of waste to recover energy: West Lithgow Precinct, Parkes Special Activation Precinct, Richmond Valley Regional Jobs Precinct, and Southern Goulburn Mulwaree Precinct.”

“No large-scale energy recovery from waste facility has been approved for development in NSW in any of the four precincts to date. However, two proposals are mature and progressing:

- Veolia Woodlawn Advanced Energy Recovery Centre within the Southern Goulburn Mulwaree Precinct.
- Regional Growth NSW Development Corporation's expression of interest for a facility within the Parkes Special Activation Precinct.”

“For the Richmond Valley Regional Jobs Precinct, Richmond Valley Council resolved in November 2022 to pause its efforts to develop an energy from waste facility. There are no mature proposals for this area and there are logistical challenges given its distance from Greater Sydney.

The West Lithgow Precinct map was revoked after the withdrawal of Energy Australia's State Significant Development application for a facility in that precinct.”

“Analysis commissioned by the EPA to assess NSW residual waste needs identified that even if the proposals for the Goulburn Mulwaree Precinct and Parkes Special Activation Precinct were approved and developed, the cumulative capacity would still be insufficient to replace the current throughput of the Lucas Heights Landfill, which is scheduled to exhaust in 2030.

The analysis further identified that outside these two proposals, there are mostly speculative proposals for large-scale energy from waste facilities in NSW. The most defined proposal was a Cleanaway-led consortium proposal for a 400,000 tonnes/year energy from waste facility at the former Wallerawang power station site in the Lithgow area. The other potential opportunity was an energy from waste facility in the Hunter region by Remondis at its Tomago Resource Recovery facility. These sites have been considered against the principles for locations of energy from waste facilities set out in the infrastructure plan, and may be suitable.”

The AIEN supports the NSW EPA's proposed changes to precincts as follows:

- Richmond Valley Jobs Precinct no longer identified as a priority infrastructure area and the map revoked.
- West Lithgow Precinct boundaries extended to include the former Wallerawang power station and a map gazetted.
- A new priority infrastructure area is established for Tomago and a map gazetted.
- No changes to Parkes Special Activation Precinct and Southern Goulburn Mulwaree Precinct.

However, the AIEN would also make the following comments/recommendations in relation to the scope of the proposed changes:

1. Given there have been no EfW developments in NSW since the precinct concept was initiated, does the precinct concept serve any purpose other than to add another layer of red tape to the development process? Given NSW EPA has justifiable pride in exercising the maximum level of scrutiny over developments, surely desperately needed EfW plants should be eligible to be located anywhere Australia's strictest environmental regime would allow? The AIEN agrees the extended West Lithgow Precinct, the Southern Goulburn Mulwaree Precinct and a new Tomago Precinct would be well located to service the ongoing needs of the main population centres of **N**ewcastle, **S**ydney and **W**ollongong. However, this allows for the vast expanses of NSW to be serviced by the three precincts already mentioned and the precinct at Parkes. The NSW EPA has identified critical need for EfW infrastructure along the northern coastal areas which can only be realistically serviced by the Tomago Precinct.

Areas in the south of the state will encounter equal difficulties in being serviced by the Parkes Precinct or the Southern Goulburn Mulwaree Precinct. The AIEN again asks whether the precincts concept is fit for purpose relative to NSW's needs in managing its way through the waste "crisis".

2. The AIEN recommends scrapping the concept of precincts for EfW facilities and applying the full rigor of NSW environmental and planning regulations in like manner to any other proposed development. In that way, areas of greatest waste infrastructure need can be forwarding projects without the additional layer of bureaucracy required to amend the list of nominated precinct locations as a first step. It is apparent to the AIEN that a relatively attractive EfW proposal has been received by NSW EPA in relation to the area immediately north of Newcastle. Rather than directing full attention to assessing its merit, the current exercise of amending policy is absorbing valuable time and resources.

Change 2 – Changes to the definition of "thermal treatment"

The AIEN notes the following quotations within the Energy from waste – options paper – NSW EPA document dated December 2024:

"A process that is currently excluded from the definition of 'thermal treatment' is:

- the thermal treatment of waste plastic to produce plastic products, or inputs for plastic products, if at least 65% of the weight of the waste plastic thermally treated in a 12-month period is converted into plastic products or inputs for plastic products.

"This exclusion is intended to allow processes that deal with plastic waste in a circular way, i.e. where a significant proportion of the input plastic is converted into plastic products or is used as input to plastic products. The EPA review of the energy from waste framework has made a preliminary finding that only allowing this exception for plastic waste may be too narrow. There is an opportunity to expand this exception to allow for other types of waste to be thermally treated to produce new products or inputs for those products."

"A further option is to have an exclusion for processes that result in a clear environmental benefit (the benefit being subject to criteria in the regulation or guidelines). This could allow other thermal treatment activities — for example, generating sustainable aviation fuel — if they could be shown to produce a clear environmental benefit."

The AIEN supports the NSW EPA's proposed changes to the definition of "thermal treatment" as follows:

- Expand the exclusions to allow processes that treat waste to produce 'like for like' products or inputs for those products, not only for plastic.
- Expand the exclusions to allow for processes that make a product that has a clear environmental benefit in line with criteria specified in the regulation or guidelines.

However, the AIEN would also make the following comments/recommendations in relation to the scope of the proposed changes:

3. The AIEN (in many previous submissions to the NSW EPA) has expressed concern the NSW EPA's focus upon environmental idealism leads to "perfect becoming the enemy of good". The AIEN agrees that projects should be prioritised upon their ability to promote the genuine circularity of resources and materials within the economy and has been a constant advocate for the approach. That said, the AIEN also asks the question; How bad does the waste "crisis" need to get before good projects minimising landfill and other environmental impacts can be embraced rather than rejected upon seemingly ideological lines? There are many processes available (with a number being invented within NSW) whereby useful thermal treatments could be adopted that either fail to reach the 65% regulatory threshold or lead to the manufacture of an economically valuable product not directly related to the original input resource.
4. The AIEN considers the potential utilisation of thermal treatment to include manufacture of biomass into fuels, etc as a step forward in NSW EPA's thinking. However, significant and environmentally beneficial outcomes can/will be realised if NSW EPA can further consider holistic cycles involving carbon/biomass in particular.
5. The AIEN supports the notion of NSW EPA moving to assess all thermal treatments on the basis of environmental benefit alone. Otherwise, the state will continue to reject good projects with environmental benefit in pursuing idealistic goals and perfection.
6. The nominated potential changes in relation to the definition of "thermal treatment" will still not be sufficient to allow certain useful environmentally sound projects to proceed including:
 - Utilisation of harvested woody weeds and forest timber residues arising from road construction to produce valuable biogenic products (such as char) or energy; and
 - Projects associated with circular harvesting of certain crops and managing their regrowth as a carbon neutral proposition.

Change 3 – Changes to exceptions for powering onsite industrial manufacturing processes

The AIEN notes the following quotation within the *Energy from waste – options paper* document dated December 2024:

"The Protection of the Environment Operations (General) Regulation 2022 clause 144 sets out exceptions to the prohibition on thermal treatment of waste to recover energy. The exception in clause 144(4) allows the thermal treatment of waste to recover energy if:

- (a) the activity is carried out to replace the use of a less environmentally sound fuel, and
- (b) the fuel was, or was lawfully able to be, thermally treated at the premises immediately before 8 July 2022, and
- (c) for fuel thermally treated at the premises in the 12-month period ending immediately before 8 July 2022 —at least 90% of the energy recovered from thermally treating the fuel, including energy generated from the energy, was used in, or to power, industrial or manufacturing processes at the premises during the period, and

- (d) at least 90% of the energy recovered from thermally treating the waste, including energy generated from the energy, is used in, or to power, industrial or manufacturing processes at the premises in a 12-month period.

This exception enables existing facilities who needed to use fuel(s) to power industrial or manufacturing processes onsite, to replace a less environmentally sound fuel with waste.

Feedback from industry on this provision is that it is too restrictive and that with improving technology there is a case to support that waste fuels should be allowed to displace liquefied petroleum gas, natural gas and liquefied natural gas. The use of waste to replace those gas fuels is currently not permitted under the regulation.

The EPA's preliminary finding is that this would need to be considered on case-by-case basis and depend on the evidence in each case to determine if the process proposed for recovering energy from waste to power industrial or manufacturing processes on site results in a more environmentally sound outcome than using liquefied petroleum gas, natural gas and liquefied natural gas fuels. Given that this exception is limited to existing facilities that were lawfully able to thermally treat fuel at the premises to power industrial or manufacturing processes before the commencement of the prohibition on 8 July 2022, it is feasible to potentially expand this exception to enable a case-by-case assessment of proposals to replace gas fuels with waste."

The AIEN supports the NSW EPA's proposed change to the exception for powering onsite industrial or manufacturing processes as follows:

- Adjust the exception under clause 144(4) of the regulation to enable the EPA to consider and allow proposals to replace liquefied petroleum gas, natural gas, and liquefied natural gas with energy recovery from waste, on a case-by-case basis.

However, the AIEN would also make the following comment in relation to the scope of the proposed change:

7. The NSW EPA should always evaluate proposals on a case-by-case basis. In particular, projects with significant net environmental benefit should never be ruled out due to legacy details from a prior time. Within the bounds/context of the existing stringent NSW regulatory regime with respect to development consent, the NSW EPA should always be encouraging energy efficiency amongst businesses and residents in order to reduce reliance on fossil fuels.
8. Unnecessary bureaucratic detail such as threshold percentages for internal application, etc inevitably serve to frustrate development. The EPA should be primarily concerned with each case being assessed only upon the merits. For each project, allow the holistic assessment of environmental cost/benefit to be the governing criteria regarding consent.

The AIEN wishes the EPA well in its current assessment endeavours in relation to the *NSW EPA's Energy from waste (EfW) - options paper (December 2024)*. There are several points raised in the AIEN's submission that it would be pleased to discuss further with the NSW EPA as part of the current review or subsequent to it.

Yours Sincerely,



Colin Barker
AIEN Chair