NO WASTE INCINERATOR TARAGO

Communities Against the Tarago Incinerator (CATTI)

Formal Objection to the proposed Veolia Woodlawn Advanced Energy Recovery Centre (ARC)

Attachments

Artwork by Kaylani Boyd (Age10)
of Lake Bathurst, 5km from the proposed incinerator

Attachments

These documents provide additional detail on CATTI's response to the EIS and its Appendixes sorted by the Key Issues outlined in the SEARs. This includes identification of errors, omissions, inconsistencies, false and misleading information.

**Due to the limited timeframe for review of the EIS, these attachments were not completed at the time of submission.*

NO WASTE INCINERATOR TARAGO

SEARs requirements:

- **justification for the proposal and that the proposal is permissible with consent**
- **a detailed description of the history of the site, including the relationship between the proposed development and all development consents and approved plans previously and/or currently applicable to the site**
- **demonstration that the proposal is consistent with all relevant planning strategies, environmental planning instruments, adopted precinct plans, draft district plan(s) and adopted management plans and justification for any inconsistencies.**

The Woodlawn ARC Environmental Impact Statement fails to meet the SEARs requirements for statutory and strategic consent because:

1) it fails to justify the proposal meets the criteria for an energy-from-waste (electricity generation) facility with relevant permissions; and

2) it is inconsistent with the relevant planning strategies, plans and instruments, specifically the:

a) NSW Energy from Waste Policy statement;
b) NSW Energy from Waste Infrastructure Plan (2021);
c) NSW Waste and Sustainable Materials Strategy 2041;
d) NSW Electricity Infrastructure Roadmap;
e) NSW South East and Tablelands Regional Plan;
f) Goulburn Mulwaree Community Strategic Plan 2042;
g) UN 2030 Sustainable Development Goals adopted by Australia;
h) Australian Government's membership of the High Action Coalition to End Plastic Pollution; and
i) European Industrial Emissions Directive (IED) Best Available Techniques conclusions (BAT-C).

1. Fails to justify the proposal as an energy-from-waste facility with relevant permissions

The proposal detailed in the Woodlawn ARC Environmental Impact statement is a waste management proposal, not an electricity generation project. Justification for the proposal is based on the NSW Waste and Sustainable Materials Strategy 2041 that states waste-to-energy facilities may be required to reduce the need for landfill capacity. The following are extracts from the strategy:

At least one large-scale regional energy recovery facility and medium-scale 'dirty MRF' required to reduce the need for additional landfill capacity in this decade (NSW Waste and Sustainable Materials Strategy 2041, page 21)

Recovering energy from waste can be a legitimate and necessary residual waste management option where it can deliver positive outcomes for the community and the environment and assist in lowering our carbon footprint and reducing the need for landfill. Energy recovery can reduce emissions by replacing more carbon-intensive fuels and by stopping harmful methane emissions from materials in landfill.
We want to support energy recovery where it makes sense to do so and where it is used to manage residual waste, not as an alternative to recycling.

Thermal energy from waste facilities are the most common technology. These generate some electricity as well as heat and steam. Other types of energy recovery include anaerobic digestion and gas capture.
(NSW Waste and Sustainable Materials Strategy 2041, page 22)

The proposal detailed in the EIS is no different in nature to the existing Woodlawn bioreactor landfill which captures methane gas that is then used to generate energy via an energy plant. This method of energy recovery is mentioned in the above excerpt as *"anaerobic digestion and gas capture"*. Therefore, the proposal should be classified and assessed as a *"Waste Collection, treatment and disposal"* project in the same way as the existing Woodlawn Bioreactor – not "Electricity Generation – Other".

Further evidence to demonstrate the proposal does not meet the criteria for "*"Electricity Generation – Other*" is that the EIS provides no means for electricity distribution to the grid. Transmission infrastructure upgrades and requirements needed to connect the project to the NSW electricity grid are not specified in the EIS documentation. Additionally, waste-to-energy incinerators are not mentioned in the NSW Electricity Infrastructure Roadmap as a necessary or viable energy source.

2. The proposal is inconsistent with the relevant planning strategies, plans and instruments

a) Inconsistent with the NSW Energy from Waste Policy statement:

https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/waste/21p2938-energy-from-waste-policy-statement.pdf

The NSW EfW Policy Statement makes clear in its introduction on page 1 "*Energy from waste can be a valid pathway for residual waste where: community acceptance to operate such a process has been obtained"*. It is clear there is no community accepted to operate such a facility in this region. There has been overwhelming community opposition to the proposal which is backed by local representatives, local Councils, approximately 3,500 parliamentary petition signatures of opposition and formal public objections to the EIS.

The EfW Policy Statement notes that operators of an energy from waste facility will need to be 'good neighbours'. Veolia's 20 years of failing to comply with existing landfill license conditions, multiple fines and warnings, withholding of information, contamination of local groundwater and waterways and reneging on community funding when publicly opposed demonstrates Veolia is not, and will not be, a 'good neighbour'.

In addition, the Woodlawn ARC Environmental Impact Statement (EIS) fails to provide certainty that the proposed facility will meet the emissions criteria of the NSW EfW Policy statement as follows:

- The NSW EfW Policy Statement emissions monitoring and design requirements standards differ to those of the European Industrial Emissions Directive (IED) Best Available Techniques conclusions (BAT-C). The reference facility provided by Veolia operates under the requirements of the IED BAT-C, and cannot demonstrate compliance with the NSW EfW Policy Statement requirements. The policy requires demonstrated compliance through "reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions" (page 5).

- The EIS notes:
  "The principal areas of difference relate to the air emission levels for the plant which are designed to be in accordance with the NSW Energy from Waste Policy. It is noted that the emission levels for NSW are required to be monitored and maintained over a 1-hour averaged basis. Whilst the target compliance emission levels may be higher than those and other limits specified in Europe and the UK, the shorter averaging timeframe, hourly versus daily, presents further challenges to designers. (Woodlawn ARC – BAT Assessment, Page 2)

  Summarily, although the NSW emissions values may be higher than the European Industrial Emissions Directive (IED) values, because they are monitored over a shorter timeframe (1 hour averages versus daily averages) this results in more emissions excursions and micro-exceedances being captured in the measurements than would be captured in a longer measurement timeframe. This makes it difficult to assess compliance across both the NSW EfW Policy and the IED BAT-C. Any data monitoring should also be conducted in a moving window (as opposed to a fixed window) to ensure better capture of exceedances.

- The EIS documentation demonstrates there are no plants in a similar regulatory environment that can be used for comparison. For example, this statement in regard to emissions measurement standards:
  "However, potential reference plants are not currently available that meet the requirements of the NSW EfW Policy as the requirements on energy recovery facilities and the Technical Requirements for emission standards, process monitoring and proof of performance testing for emissions to air are different from other regions; notably within this report against the EU Waste Incineration (WI) Best Available Techniques (BAT) Conclusions7 published in November 2019, and the minimum requirements for waste incineration specified in Chapter IV of Directive 2010/75/EU on industrial emissions8 (IED)." (Woodlawn ARC – BAT Assessment, page 17)

  In assessing compliance of the proposed facility to best available techniques, the BAT Assessment Appendix L(i) states:
  "Therefore, potential reference plants are not currently available to benchmark against all the requirements of the NSW EfW Policy as the requirements on energy recovery facilities are different in other regions; notably, the Technical Requirements for emissions standards." (Woodlawn ARC – BAT Assessment, page 69)

  The proposed facility also differs to the reference facility in terms of design and scale. The Staffordshire reference facility is a two line facility while the proposed Woodlawn facility is single line and considerably larger than the reference facility in scale.
  "Whilst the Staffordshire Energy Recovery Facility (ERF) in the UK (reference facility) is comparable in facility size (340,000tpa v 380,000tpa) and exhibits strong similarities to the proposed Woodlawn ARC in its selection of technologies that represent BAT, the scale of the proposed facility is considerably larger than that of the reference facility at around double the size based on a single line." (Woodlawn ARC – BAT Assessment, page 21)

  The document discusses combustion temperatures of either 850 degrees Celsius or 1100 degrees Celsius. It states that the proposed Woodlawn facility will be operated at 850 degrees Celsius, but then does not provide a temperature for operation at the Staffordshire reference facility, merely stating that the reference facility "achieves this requirement" (Table 6-6: Technical Criteria, Woodlawn ARC – BAT Assessment, page 25). In regard to the temperature, the waste feedstock sampling for the proposed facility also demonstrated the likelihood of waste feedstock comprising more than 1% of halogenated organic substances. There are no measures proposed in the EIS for combustion of this waste at 1100 degrees Celsius for 2 seconds as required in the NSW EfW policy.

  The proposal is thus unable to demonstrate compliance through "reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions" as required by the NSW EfW Policy (Page 5).

- It is also concerning that aspects of the technical assessment of compliance (for example, the BAT Assessment – Appendix L(i)) do not follow recognised engineering procedures for conducting an independent assessment. An example of this is the Technology assessment which draws a conclusion on the achievement of limits (that aligns with the claims Veolia is making) prior to an examination of the technology proposed for use (and/or a comparative assessment of other technologies).
  "The Woodlawn ARC will comprise a single combustion line, using an inclined moving grate to efficiently combust the full range of waste feedstock. The technology chosen ensures that under normal operating conditions, emission limit values do not exceed the emission levels associated with the NSW EfW Policy. Only proven technology deployed in similar regulatory applications and at similar scale will be Used." (Woodlawn ARC – BAT Assessment, page 4)

  Additionally, there are indications that cost considerations were used as a selection criteria prior to a full assessment of the system performance against other available technologies. For example, in discussing the nitrogen oxides abatement method in the quantitative BAT assessment the report states:
  "This results in SCR generating higher operating costs whilst resulting in lower plant energy efficiency." (Woodlawn ARC – BAT Assessment, page 13)
  Cost considerations should only be factored into an assessment once the technological capabilities of the various available technologies have been assessed and compared as to their effectiveness in achieving the required outcomes of the project.

b) Inconsistent with the Energy from Waste Infrastructure Plan (2021)

https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/waste/21p3261-energy-from-waste-infrastructure-plan.pdf

The proposal fails to adhere to the precautionary principle set out in the Plan that *"Protecting human health and the environment is a fundamental objective"(*page 4). It also fails to achieve the Plan's requirement to *"take precautionary approaches for all regional communities, especially those that may be more vulnerable to air quality impacts. Populations can still experience health impacts when emissions are below the national standards, and for some common air pollutants, there is no safe threshold of impact."* This is a community already suffering from pollution as well as the impacts from Veolia's existing operations exceeding its licensed conditions. This includes community exposure to polluted groundwater and waterways, regular odour pollution that exceeds air quality standards and results in negative health impacts on the Tarago community, and significant lead contamination in the town.

The proposal fails to meet four of the eight criteria established for waste to energy incinerators (page 5):

- Be compatible with environmental and climatic factors (air quality) – the project would pollute the surrounding environment already suffering from the cumulative impacts of Veolia's existing operations, residual impacts from the Woodlawn mine and numerous other state significant projects.

- Support secure and sustainable access to energy in locations that need it – there is no demand from Tarago and the surrounding region for additional energy capacity. More sustainable and environmentally-friendly electricity generation is already provided through numerous existing local windfarms along with existing and planned solar farms.

- Attract investment and economic opportunities to communities who need it – Tarago and the surrounding region has a strong economy and does not require investment from this proposal. The NSW government has not identified this local government area as in need of investment, nor has it been included in any Special Activation Precincts or Regional Job Precincts. The unemployment rate is less than 5% and is lower than the state and national unemployment rate.

- Support existing waste, net zero and regional growth strategies – The project will not support the NSW Waste and Sustainable Materials Strategy 2041 as it will not result in any additional capacity for residual waste in NSW to 2040 (see details below). It is also inconsistent with the South East and Tablelands Regional Plan which notes growth in this region will come from protecting agricultural land, renewable energy (wind and solar – not waste incineration), tourism, protecting the environment and building safe and healthy communities.

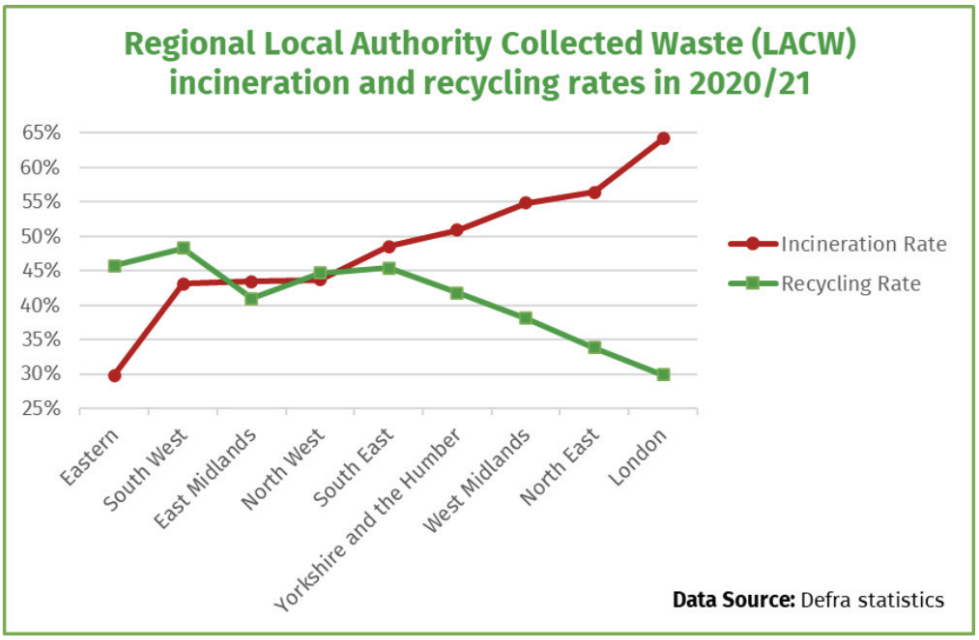
c) Inconsistent with the NSW Waste and Sustainable Materials Strategy 2041

https://www.dpie.nsw.gov.au/__data/assets/pdf_file/0006/385683/NSW-Waste-and-Sustainable-Materials-Strategy-2041.pdf

The waste strategy justifies waste incinerators due to critical waste infrastructure requirements and limited landfill capacity. It states that by 2030 "at least one large scale regional energy recovery facility will be required to reduce the need for additional landfill capacity in this decade". Veolia have publicly reported that their existing Woodlawn Bioreactor landfill is viable on existing waste volumes up until 2047. Given this project involves no increase to the volume of waste being accepted at Woodlawn, it provides no additional capacity between now and 2040. Therefore the proposal fails to achieve the additional capacity requirements set out in the strategy.

Not only will this proposal provide no additional capacity for NSW, it will also actively discourage a key principle of the strategy – to transition to a circular economy and drastically increase recycling rates. Feedstock analysis for the proposed incinerator shows that more than 60% of the waste stream will be composed of recyclable materials like glass, metal, paper, cardboard, plastics and FOGO (food and garden organic) waste (Woodlawn ARC Environmental Impact Study, page 109). European data demonstrates that waste incineration reduces recycling rates.

For example, the diagram below (compiled using data sourced from the UK Department for Environment, Food and Rural Affairs) demonstrates how increases in incineration rates are synonymous with a decline in recycling rates (ukwin.org.uk/facts)



Regional Local Authority Collected Waste (LACW) incineration and recycling rates in 2020/21

d) Inconsistent with NSW Electricity Infrastructure Roadmap

https://www.energy.nsw.gov.au/sites/default/files/2022-08/NSW%20Electricity%20Infrastructure%20Roadmap%20-%20Detailed%20Report.pdf

This roadmap, released in November 2020 sets out the infrastructure required to replace coal-fired power stations over the coming 15 years and other relevant policies and programs being followed by the NSW Government to secure the energy needs of the state into the future. There is not a single mention of waste to energy incineration as a necessary, viable or attractive energy source for NSW. Waste to energy incineration is not listed as a renewable energy option, nor does it qualify for Green Power generator accreditation under the NSW Green Power program – in fact it is specifically excluded from the program. This demonstrates that the proposal is not renewable energy, is inconsistent with NSW's policy for power generation into the future, and as such cannot be endorsed as a State Significant power generation development.

e) Inconsistent with NSW South East and Tablelands Regional Plan

https://www.planning.nsw.gov.au/~/media/Files/DPE/Plans-and-policies/south-east-and-tableland-regional-plan-2017-07.ashx

This Plan sets out the blueprint for balanced growth in the Tablelands region while protecting the region's environment until 2036. It is designed to guide land use planning and is an overarching framework for the NSW Government to guide development proposals and infrastructure funding decisions. The proposed waste incinerator is inconsistent with and threatens the below priorities for the region set out in the plan:

- Positioning the region as a hub of renewable energy excellence (wind, solar, hydro, geothermal and bioenergy – not waste incineration)
- Protecting important agricultural land.
- Protecting important environmental assets
- Mitigating and adapting to climate change
- Securing water resources
- Building safe and healthy communities

f) Inconsistent with the Goulburn Mulwaree Community Strategic Plan 2042

https://www.goulburn.nsw.gov.au/files/sharedassets/public/other-documents-on-exhibition/operational-plan/goulburn-mulwaree-community-strategic-plan-2042.pdf

The proposal is inconsistent with the following environmental strategic objectives set out in the plan:

- Our natural environment is maintained, protected and enhanced in line with community expectations
  - C.1 protect and enhance the existing natural environment, including flora and fauna native to the region.
  - C.3 Protect and rehabilitate waterways and catchments

- Adopt environmental sustainability practices
  - C.4 Investigate and implement approaches to reduce our carbon footprint
  - C.5 Council to investigate and adopt environmentally sustainable practices across the organisation
  - C.6 Work with community, businesses, government and community support services to mitigate and adapt to the impact of climate change and adopt environmentally sustainable practices.
- Our rural character and natural landscapes are protected and maintained
  - C.11 Maintain a balance between growth, development, environmental protection, and agriculture through sensible planning.
  - C.12 Economic growth and development will consider the rural character, local environmental and historical features, and community aspirations
  - C.13 Implement planning and development policies and plans that protect our built, cultural, and natural heritage.
  - C.14 Consider community feedback, local character and identify, economic factors and social impacts in planning decisions.
  - C.15 Encourage positive social and environmental contributions from developers.

g) Inconsistent with the UN 2030 Sustainable Development Goals adopted by Australia

This proposal is inconsistent with the below Sustainable Development Goals:

- Good Health
- Clean Water & Sanitation
- Clean Energy
- Reduced inequalities
- Responsible consumption
- Protect the Planet
- Life below the water
- Life on land
- Peace and Justice

h) Inconsistent with Australian Government's membership of the High Action Coalition to End Plastic Pollution

https://hactoendplasticpollution.org/

In November 2022, the Australian Government joined the High Action Coalition to End Plastic Pollution which commits to a policy of ending plastic pollution by 2040 via international treaty. This policy has a target of recycling or reusing 100 percent of plastic waste by 2040. Veolia's waste incinerator proposal is inconsistent with this government commitment as it would lock in high volume incineration of plastic waste until at least 2050, a decade past this policy commitment.

i) Inconsistent with the European Industrial Emissions Directive (IED) Best Available Techniques conclusions (BAT-C)

https://eippcb.jrc.ec.europa.eu/sites/default/files/2020-01/JRC118637_WI_Bref_2019_published_0.pdf

The European Industrial Emissions Directive (IED) Best Available Techniques conclusions (BAT-C) issued in November 2019 is considered representative of world's best practice standards for the industrial incineration of waste. Veolia provides an assessment of their compliance with the IED BAT-C in Appendix L(i) Woodlawn ARC – BAT Assessment. The NSW EfW Policy requirements are based on this directive. Concerns listed with the incompatibility of IED BAT-C and NSW EfW Policy requirements are listed under a) Inconsistent with the NSW Energy from Waste Policy Statement. Concerns specific to the IED BAT-C are as follows.

There are a number of items in "7. Assessment of Woodlawn ARC against the BAT Criteria" (Woodlawn ARC – BAT Assessment, page| 29) that are marked compliant where the information provided is insufficient and/or the comment is inconsistent with the stated compliance. These are:

- BAT 1 is stated as compliant but most of the statements relate to future planning documents or decisions. Therefore this is not compliant and needs to be assessed at a later time frame.
- BAT5 requires emissions to be monitored during OTNOC but the comment clearly states this will not be the case.
- BAT11 requires radioactivity detection on inputs yet this is clearly not included in the comment for the design.
- BAT12 does not mention anything about container storage on site, at crisps creek or sydney. All storage locations should be included.
- BAT19 only restates electricity generation. Does this BAT not look for other recovery besides electricity generation (e.g. heat recovery)?
- BAT32 the explanation does not account for why compliance to this is indicated as N/A.
- BAT33 the comment is not applicable as it does not refer to using water from the process (as noted in the BAT subtechnique). It instead discusses using rainwater in preference to bore water.
- BAT34 is applicable as it is processing ashes at the plant

The BAT compliance assessment makes a considerable number of generic statements about EfW.
Proof of performance compliance is only mentioned in regard to monitoring. There is insufficient information to demonstrate proof of performance for plant operation.

SEARs requirements:

A detailed justification that the site can accommodate the proposed development having regard to:

- **existing site operations, their environmental impacts and mitigation measures**
- **the proposal's potential environmental impacts and existing site constraints**
- **the compatability of the proposed use with surrounding land uses.**

Concerns with the proposed Woodlawn ARC site suitability in regard to the above SEARs requirements is as follows:

1. No analysis of compatability with the neighbouring mine has been completed.

2. Pollution plume analysis is insufficient to demonstrate the compatability of the proposed facility with existing agricultural land use. In particular, areas in the vicinity of Tarago, Bongaralaby Creek, Lake Bathurst and Taylors Creek.

3. The Air Quality Impact Analysis does not sufficiently address the pollution impacts of a waste incinerator located at an altitude of 720 metres above sea level on surrounding residents, farmers and onsite workers.

4. The Air Quality Impact Analysis fails to properly address the specific geographical formations (ridge lines) around the site in conjunction with the prevailing winds and the extent of the resulting pollution impacts upon residential landholders and agricultural land use.

SEARs requirements:

a community and stakeholder participation strategy identifying key community groups and stakeholders, including:

- **details and justification for the proposed consultation approach(s)**
- **a description of the form of engagement activities undertaken, including details of how the Applicant has engaged in a genuine dialogue with the community**
- **clear evidence of how each stakeholder identified in the community and stakeholder participation strategy has been consulted**
- **details of issues raised by the community and surrounding landowners and occupiers, how issues have been addressed and whether they have resulted in changes to the development**
- **details of the proposed approach to future community and stakeholder engagement based on the results of consultation**
- **details of how monitoring data will be communicated and made publicly accessible to the community, in accordance with the NSW Energy from Waste Policy Statement (EPA, 2021)**

Community and stakeholder engagement conducted for the proposed Woodlawn ARC fails to meet the SEARs criteria because:

1. community engagement was not adequate, transparent, nor genuine in its intent and implementation;

2. issues/concerns raised by the community are trivialised and minimised, and project messaging continually ignored community feedback;

3. there has been minimal feedback of community issues/concerns into the deveopment planning and implementation;

4. the engagement process has functioned to disempower the community; and

5. proposed future community and stakeholder engagement measures are inadequate.

1. Community and stakeholder engagement was not adequate, transparent, nor genuine in its intent and implementation

The project engagement for the proposed Woodlawn ARC has been hampered throughout by:

- lack of transparency about the nature the proposed facility and its possible impacts upon stakeholders;
- lack of engagement with the communities and stakeholders most likely to be affected by the proposal;

Some examples noted are listed in the following points;

- presentation of misleading information.

- "The overarching approach for the engagement activities undertaken was to provide a transparent, structured and meaningful engagement program for the local community and stakeholders. The program has included:
    - arranging a community connection session with the Woodlawn Eco Precinct CLC and the Staffordshire ERF reference plant CLC;" J200931 | RP1 | v3 120

"On 4 May 2022 Veolia arranged an online meeting between members of its CLC and CLC members from Veolia's UK reference site, the Staffordshire Energy Recovery Facility. The session was designed so that Australian community representatives could ask what it's like to live near an EfW facility, in a peer-to-peer format. Veolia experts working at the facility were also on the call and the session was run by an independent facilitator.
There were seven Australian CLC and/or council representatives on the call and two Veolia representatives from Australia. There were also two CLC members from Staffordshire as well as three Veolia Staffordshire representatives." (Appendix K, Project Engagement, page 23)

Community members requesting information from this meeting were told that the meeting was not a CLC meeting, so there were no minutes, specifically: "*The meeting with Staffordshire, on the other hand, was facilitated independently of Veolia. As it was a closed meeting, and not run by our team, we do not have meeting minutes from it."* (31/08/22, email to FJ from theARC@veolia.com). Council representatives who minuted the meeting to share with the wider community were prevented from distributing the information when Veolia classified the entire session "commercial-in-confidence". As such, this session did not contribute to transparent and meaningful engagement for the local community nor the vast majority of stakeholders.

- History of Community Engagement at Woodlawn Eco Precinct - Since 2004, over $30 million has been provided to the Goulburn Mulwaree Council in the form of host fees, specific community projects including via the Veolia Trust, and for road upgrades and maintenance. (Appendix K, Project Engagement, page 7)

Over 18 years of operation, the Veolia-Mulwaree Trust (a separate entity to Veolia) has contributed just $1.4 million to the Tarago Community most impacted by its operations (Tarago Times, Veolia Update, November 2022, page 15). Council also indicates host fees for road repairs and maintenance are in no way adequate to recompense for the damage truck movements are causing to regional roads. (Refer Goulburn-Mulwaree Council objection to the proposed Woodlawn ARC).

Additionally, these fees are a condition of Veolia's operating licence. The percentage of this contribution when represented as a portion of Veolia's operating profits from the Woodlawn Site would likely be negligible. However, these profits are also not a matter of public record, further demonstrating the problems the community encounters in seeking information.

It is also notable that this section on community engagement fails to make mention of 'odour complaint' reporting. By far the most common interaction local residents have with Veolia is to report odour complaints.

- "The Woodlawn Eco Precinct is located approximately 50km south of Goulburn, in a predominantly rural area." (Project Engagement, page 8)
"The proposed project site is approximately 70km north of Canberra." (Project Engagement, page 8)

Yet another instance (repeated ad nauseam throughout the EIS) in which the distance of the proposed facility from major population hubs is misleadingly represented. All distances not specifically indicated to be "by road" should be direct path distances to enable stakeholders to accurately assess the impact of the proposed facility on them.

- Veolia attendance at Tarago And District Progress Association Incorporated (TADPAI) meetings: Veolia attended only one public TADPAI meeting in the past 12 months (on 11 April 2022), and at Veolia's request, in-person community attendance at this meeting was limited to 10 people (including the TADPAI executive). There were no COVID-19 restrictions in place at the time that would have impacted the meeting. This drastically limited community access and the ability to ask questions and receive information about the proposal.

- Veolia has a long-standing history of community engagement at its Woodlawn Eco Precinct and prides itself on operating with transparency, respect and commitment. (Appendix K, Project Engagement, page 7)

  Veolia has a strong track record of working with the local community around Woodlawn Eco Precinct and will continue to act with transparency, integrity and respect throughout the planning and, if the proposal is successful, the delivery of this new facility. (Project Engagement, page 11)

  Veolia's history of operations fails to demonstrate 'transparency, respect, integrity or commitment' in community engagement. In regard to respect, Veolia has misled the community (in promising that odour from their landfill site would not impact the community), and then failed to adequately address hundreds of odour complaints each year from residents surrounding the facility over a period spanning more than 18 years. This demonstrates neither respect, nor the commitment to adhere to operating licence conditions.

  Veolia also continues to demonstrate that transparency from its operations is not what the community can expect. The following are a few demonstrations that transparency is lacking in Veolia's stakeholder engagement:

  - Veolia actively opposed the release of information relating to EPA notices it received over the course of its operations (GIPA EPA 783);

  - Veolia routinely classifies material that could reasonably be expected to be in the community interest as "commercial-in-confidence" (e.g. the meeting between Veolia, the Community Liaison Committee, Council and Veolia's Staffordshire Reference facility);

  - Despite several emails sent to Veolia requesting an update (10/07/22, 23/10/22, 8/11,22) and EIS information indicating information is updated monthly, Veolia's Staffordshire Four Ashes incinerator air emissions data for any the entirety of 2022 is still unavailable on the website (as of 11/12/22).

  - The community was left uninformed for more than 5 years about seepage from Veolia's evaporation dams which has been infiltrating groundwater and Crisps Creek. Just two days before the EIS release, Veolia was issued with an EPA licence breach for groundwater pollution (EPA Notice 3503885, 24/10/22). Neither the community (through the local newsletter or Veolia's website updates) nor the Community Liaison Committee had been informed of this issue prior to release of the EPA notice.

  - Veolia was issued an EPA penalty notice on 28th November (Penalty Notice 3173531433) and a $15,000 fine for offensive odour in breach of their licence conditions. Despite the matter being raised in a Goulburn-Mulwaree Council meeting on Tuesday 29th November by a CATTI representative, Veolia CEO Richard Kirkman (who attended and spoke at the meeting) failed to elaborate to Council and local residents about the substance of the penalty notice. Mr. Kirkman avoided all mention of the subject, even when questioned in relation to odour at the Woodlawn facility. Residents had no means of confirming the penalty notice details as these were (and still are as of 1/12/22) unavailable in the EPA public register. The substance of the penalty notice was only confirmed following resident email enquiries directed to the EPA.

  - Investigation of Veolia's operations throughout Australia and the world demonstrates lack of transparency is institutionalised.

- Veolia will continue to be transparent about the feedback received and how the organisation will respond. Project enquiries will continue to be responded to in a timely manner. If Veolia is not able to address something community members have asked for, or raised as a concern, then Veolia will provide an explanation as to why this is the case. (Appendix K, Project Engagement, page 11)

  Many enquiries made by the community about the project have met with the response that the information is 'commercial-in-confidence'. No explanation has been provided as to why answers to the enquiries are 'commercial-in-confidence'.

Veolia's response to enquiries has often been slow, and required follow-ups to elicit a reply. Some questions were never answered. Below are three examples:

- Veolia never provided answers to the list of community questions asked during the TADPAI meeting on 11/04/22. This was despite follow-up by TADPAI.
- Resident questions (FJ) sent on 13/06/22 were not replied to until 27/06/22 after follow up by the resident.
- Resident questions (FJ) sent on 22/07/22 were not replied to until 12/08/22 after follow up by the resident.

A considerable number of questions were deflected with the explanation that details will be available in the EIS. For example, the following question for which there does not appear to be any details for in the EIS (simply a generic statement that details will be added to "Veolia's LCRMP" (Woodlawn ARC Environmental Impact Statement, page 81).

- Question: 15) What work will Veolia do when decommissioning the incinerator?
- Veolia: This will be outlined in the EIS.
- (Email from TheARC@veolia.com to FJ, 27/06/22)

Contradictory information was provided throughout the process - for example, in regard to the timeframes required to shut down and start up the incinerator. The same 'expert staff' member (originally from the UK but now working on Veolia's WA project) at the Tarago in-person information day during the public exhibition period alternately stated 15 hours (for start-up and shut down) and then 12 hours (for start-up and shut down) to two different local residents. Email enquiries (18/07/22 from theARC@veolia.com to FJ) elicited the response that start up takes 8 hours and shutdown takes 6 hours.

Residents were regularly fobbed off with use of the phrase "commercial-in-confidence" or "will be provided in the EIS". Below is one example that combines both these oft-used phrases.

"The project team has reviewed your questions to see what can be answered at this time. Much of the information relating to your email is either commercially confidential in regards to our Staffordshire facility or will be provided in the Environmental Impact Statement (EIS) that's being prepared, meaning it cannot be shared at this time." (12/08/22, email from TheARC@veolia.com to FJ)

Given the extremely limited amount of time provided to examine the lengthy EIS documentation, this did not provide residents time to fully examine the items of concern. Additionally, these types of replies worked to discourage enquiries and engagement in the process.

Additionally, responses about important topics were often vague, deflective or inconclusive. Below is one example where re-clarification of the response was required to elicit clear information:
(Email from TheArc@veolia.com to FJ, 7/07/22)

> Q: Have any of these facilities remained under the emissions limit values for the full course of their operations (including during periods of OTNOC)?
>
> A: Spikes in emissions have occurred, and in such cases, our sophisticated process control and shutdown procedures are activated. An important point to note is that emissions are monitored in real-time, and can be acted upon immediately. In the unlikely case of a prolonged period of a spike in emissions, an automatic shut down would occur so the matter could be rectified. All flue gases continue to be treated in the flue gas treatment system.
>
> (Clarification email from TheARC@veolia.com to FJ, 18/07/22)
> Q: You note that "short spikes in emissions" and "spikes in emissions" have occurred at Veolia's overseas plants. Is it correct that "spikes in emissions" refers to periods of time where the incinerator is exceeding its emissions limit values?
>
> A: Yes.

- Tarago is a small town, with a community of around 400 people. (Appendix K, Project Engagement, page 8)

  2021 Census data indicates a population of 510 people. 2016 Census data indicates a population of 426 people. This information is readily available on the internet. This is misleading and appears to be a pattern to downplay the number of people who will be impacted by the proposed facility.

- 3.2 Meaningful engagement – The ARC is classified as a State Significant Development. This classification means there are strict requirements around the planning process and the NSW Government asked Veolia to carry out a number of economic, environmental and social impact assessments. Veolia was also required to show that the company has engaged in a meaningful way with people who will be affected by, or are interested in the project.
  Veolia has been a part of the local community around Woodlawn for over 20 years and prides itself on being a trusted and valuable contributor to the area. The Woodlawn Eco Precinct team listens and responds to community and stakeholder feedback. Veolia is committed to consulting widely with the public as part of the planning process and has worked with the local community throughout EIS preparation. (Appendix K, Project Engagement, page 9)
  Veolia references that the NSW Department of Planning, Industry and Environment's "Undertaking Engagement Guidelines for State Significant Projects (DPIE 2021) states the expectations to:

  "Ensure effective engagement by providing the information community, councils and government agencies need to understand a project and its impacts and are given the opportunity to participate in a meaningful way;

  Ensure engagement is proportionate to the scale and impact of the project; ...

  Be open and transparent by reporting back on processes, key decisions and outcomes of what was heard, what changed and why.

  In order to reach the diverse and disparate rural communities within the local and regional areas around Woodlawn, a mix of communication tools and activities was used – see sections 3.8 and 3.9. (Appendix K, Project Engagement, page 10)

  04 Engagement activities – The overarching approach for the engagement activities undertaken as part of the consultation prior to the lodgement of the EIS was to provide a transparent, structured and meaningful engagement program for the local community and stakeholders. The program has included:

  - Announcing the ARC proposal early and explaining the planning process
  - Raising awareness of the proposal and planning application through detailed briefings with stakeholder and community groups;
  - Creating simple and clear project information materials to help inform the wider community and increase understanding about the project;
  - Establishing project communications channels to allow people to find out more information and share feedback, including a website, 1800 number and subscription newsletter;
  - Hosting site tours and open days at the Eco Precinct to allow people to visit the site and speak to Veolia team members directly about the proposal;
  - Responding to feedback by holding a number of community information sessions specifically on how energy from waste technology works and how air quality will be managed;
  - Sharing regular project updates through community and stakeholder mailouts, including feedback forms and online surveys;
  - Project team members personally door knocking neighbours to discuss the proposal;
  - Facilitating a community connection sessions with the Woodlawn Eco Precinct CLC and the Staffordshire reference site CLC;
  - Providing multiple and varied opportunities for community members to provide feedback on the proposal; and
  - Providing opportunities at community information sessions for local residents and representatives to engage directly with the independent researchers conducting the air quality and human health impact studies.

  A summary of engagement activity can be seen in Table 2 and Figure 8 below. A detailed breakdown of all engagement activity by stakeholder group can be found in Table 3. (Appendix K, Project Engagement, page 21)

  The local community notes many ways in which Veolia's engagement was not meaningful nor genuine.:

  1. The special meeting organised with the Staffordshire Reference Facility comprising of Community Liaison Committee and Council representatives was classified as 'commercial-in-confidence' at the end of the meeting so that representatives were unable to share information with the wider community. This meeting contributed nothing to the community's understanding of the project and its potential impacts.

2. Veolia provided an email address for questions, but then provided deflective or partial responses to some questions, deferred answers to a significant percentage of questions (until the release of the EIS), and stated that other questions would not be answered as they were 'commercial-in-confidence'.

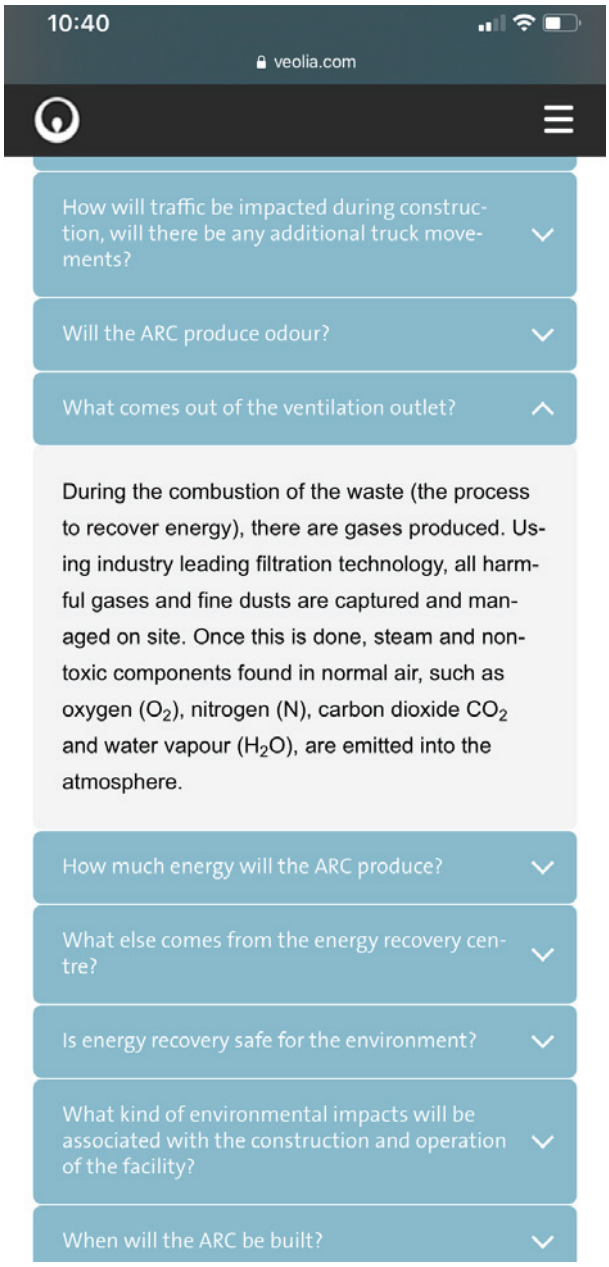
For example:

"The project team has reviewed your questions to see what can be answered at this time. Much of the information relating to your email is either commercially confidential in regards to our Staffordshire facility or will be provided in the Environmental Impact Statement (EIS) that's being prepared, meaning it cannot be shared at this time." (12/08/22, email from TheARC@veolia.com to FJ)

3. Veolia has constantly misled the community about what the development entails, the scale of the development, and the scope of the development. For example, Veolia has constantly repeated that Woodlawn is 70km from Canberra, and 50km from Goulburn. These are not direct path distances, but rather the distance by road from the facility, but they are rarely qualified as such in the EIS documentation and project materials. For the purposes of community assessment of the risks from the development, residents need to be informed of the direct path distance from the facility, as air emissions (and corresponding water supply concerns) are related to the direct distance on the map.

4. Veolia attended one TADPAI meeting in April 2022 to discuss the project. However, a condition of the meeting was that no more than 10 local residents could physically attend (inclusive of TADPAI representatives). Although the meeting was available on Zoom, it meant that many in the community were unable to access it due to internet connectivity issues or unfamiliarity with Zoom. Additionally, as questions needed to by typed into the meeting chat, it further limited opportunity for those unfamiliar with Zoom (in particular, older residents).

5. Many residents living within 10-15km of the facility (direct path distances) received no postal information about the proposed development. This includes residents who regularly report odour from the Woodlawn facility. Odour reporting requires residents to provide their address to the EPA. An odour report is generated, and Veolia is provided with this odour report. Although the house numbers are removed, the street names and suburbs associated with all odour reports are provided to Veolia and are made available publicly in the odour reports register. If Veolia was interested in meaningful engagement, all residents living along the specific streets and in suburbs that were already reporting concerns from current operations would have been sent mailout information about the project. This is the most direct way (and one of the most obviously identifiable ways) to contact the persons most likely to experience issues with future operations.



6. Residents report (and our team have confirmed) that the Veolia 1800 hotline will ring for in excess of five minutes without being answered.

7. Veolia's promotion of the proposal throughout the process has overwhelmingly focussed on the perceived benefits of the project, and failed to adequately address the risks and concerns of the community. Veolia's website in the early stages of the project stated that only steam would be emitted from the stack. This means many in the community have likely been left without a full understanding of the potential risks associated with the development.

8. Several residents noted they did not receive Veolia's project newsletter despite subscribing multiple times.

- 3.7 Project stakeholders - Table 1: Woodlawn detailed ARC stakeholder map (Appendix K, Project Engagement, page 11)

The project stakeholder map appears to omit several stakeholder groups of obvious interest. The first is persons registered as having made an odour complaint about the current Woodlawn operations. The second ommission is the large number of agricultural stakeholders and groups representative of farming interests in the region - e.g. NSW Farmers Federation, vintner/wine associations for Canberra and Southern Tablelands, organic/regenerative farming associations, apiarist associations, relevant wool/cattle/sheep/poultry representative organisations, and so on. Additionally, several notable local media groups appear to be missing - for example, The Queanbeyan Age and many local newsletters encompassing the most directly affected residents, such as Windellama News, The Wamboin Whisper and the Regional Independent (Bungendore). (It is unclear whether "Regional news" in the table refers to the "Regional Independent" or "About Regional" or neither).

- A dedicated project email address - thearc@veolia.com - was established to receive queries from neighbours and stakeholders. Since March 2021, 20 emails have been sent to the dedicated project email address, from the community. (Appendix K, Project Engagement, page 24)

This appears to be another misleading statement. The detailed record of engagement table notes only 3 persons who have emailed to this address. CATTI is aware of one individual who emailed to and received replies from the address in excess of 15 times. Were these each counted as individual community interactions? If not, where is the additional correspondence shown in the communication log?

- Meet the Experts Session - The social media advertisements were targeted at communities living within 40 kms of the Eco Precinct and more than 16,500 people were reached in total. (Appendix K, Project Engagement, page 25)

Does this distance refer to a road or direct path distance? The difference is significant. For example, if this refers to direct path distance it will include Goulburn (36km) and the outskirts of Canberra and Queanbeyan (42km and 45km respectively). If this refers to road distance, none of those population centres would be included, being 47km, 70km and 60km distant respectively.

- Figure 8: Summary of engagement activities undertaken: over 4,350,800
Total potential audience reach from coverage relating to the ARC through print, online, TV and radio. (Appendix K, Project Engagement, page 27)

This statement highlights the lack of understanding of the area of operation and the meaninglessness of the project engagement campaign. Based on the 2021 census, the populations of the four local government areas surrounding the proposed development are:

- Goulburn-Mulwaree: 32,138;
- Queanbeyan-Palerang: 63,364;
- Yass Valley: 17,234; and
- Upper Lachlan: 8,491

The population of the ACT (40km to the south-west) is 453,558.
The total population of all the surrounding area is thus 574,785 people. The above figure would be equivalent to Veolia reaching each of the people living in these areas 7.5 times. Yet people living 10-15km from the proposed facility received nothing in their mailbox. In a rural area, with intermittent internet connection in many places and an emphasis on outdoor rather than computer-based employment, surely it would have been a more meaningful engagement to ensure letters introducing the project were mailed to each household within a minimum 30km radius as part of the engagement process.

- Table 3: Feedback themes – detail
In addition to these events, Veolia has provided the community with:
  - Additional air quality management information on Veolia's website.
  - Access to the information used during community events for those who were unable to attend.
  - Information on reference sites in the UK and Europe, so that residents can see how other EfW sites operate. As part of this, Veolia also held an online community information session to connect the Woodlawn CLC with CLC members from its

reference site in Staffordshire.

- A list of academic studies independent of Veolia on its website, which demonstrates the safety of EfW technology.

(Appendix K, Project Engagement, page 30)

Delayed and reluctant provision of information relating to air quality management has been a key area of community concern throughout the process. Despite repeated requests, Veolia avoided providing a list of the expected air emissions outputs until release of the EIS. Veolia also placed misleading information on its website stating that no harmful emissions would be pumped out the stack. "*Once this is done, steam and non-toxic components found in normal air, such as Oxygen (H20), nitrogen (N), carbon dioxide (CO2) and water vapour (H20), are emitted into the atmosphere."* (Veolia.com)

The CLC meeting referred to above was classified commercial-in-confidence so members could not share any information from the sessions (and are also unable to reference it in their submissions). The academic studies Veolia placed on its website refer to incinerators and incineration technology. This is confounding for the community as Veolia has refused to acknowledge the role that incineration plays in this facility. In fact, in a media article in the Canberra Weekly (10 November, 2022), Veolia described it as 'grossly misleading and incorrect' to describe the facility as an incinerator.

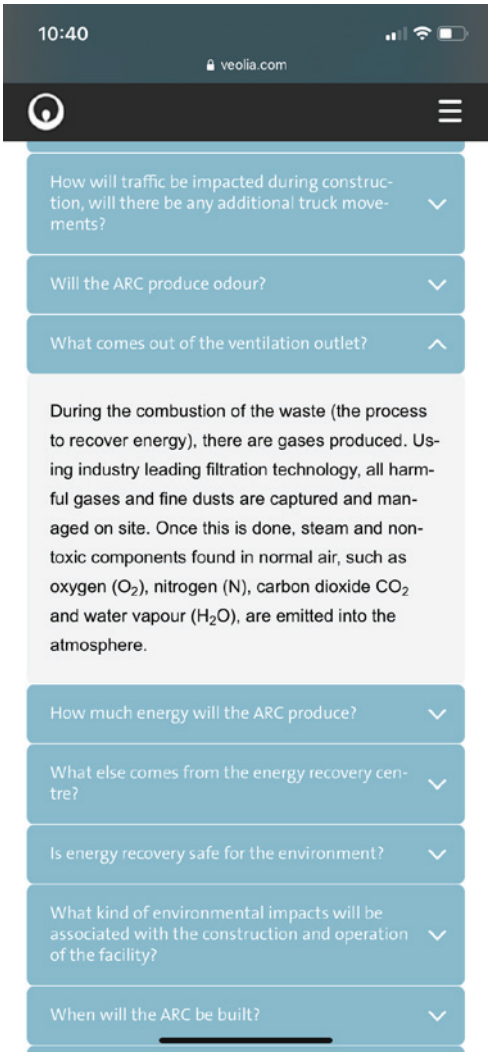
- In response to the community' concerns, Veolia will implement an ambient air quality monitoring program to measure air quality surrounding the Eco Precinct. Veolia has asked the community to have their say on where the monitors will be installed as part of the Meet the Experts event. Veolia will work with the community to determine the best way to present the data/information from the monitors. (Project Engagement, page 31)

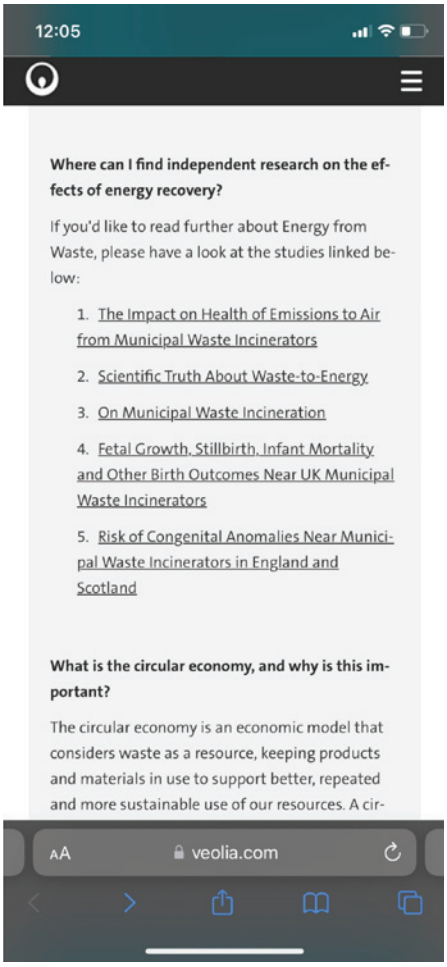
This does not appear to be an appropriate method of determining where air quality monitoring equipment should be installed. There were only 3 respondents to the "Meet the Experts" survey (Appendix K, Project Engagement, page 24). Additionally, only 44 individuals from the community attended the event. This further demonstrates the lack of meaningful engagement with the community, and does not predict future meaningful engagement. Additionally, it disregards the role that expert opinion should play in helping determine the location of monitoring stations.

- Table 3: Feedback themes – detail: EfW technology
  - The role of diesel
  - Other sites around the world and why we are proposing this technology when they are being shut down everywhere else in the world

  (Appendix K, Project Engagement, page 33)

These items do not appear to have been addressed in the table showing Veolia's response, nor do they appear to have been adequately addressed in the EIS.





2. Issues/concerns raised by the community are trivialised and minimised, and project messaging continually ignored community feedback

Project messaging throughout Veolia's community and stakeholder engagement for the Woodlawn ARC failed to incorporate community feedback, and community concerns were minimised and trivialised as a result.

- 3.6 Project key messages
  The following key messages formed the basis for ARC project communications during the consultation prior to the lodgement of the EIS:

  - Veolia is proposing to build a new facility at Woodlawn Eco Precinct that will help transform household and commercial waste into energy.
  - Using state-of-the-art technology, the proposed Advanced Energy Recovery Centre will take waste that cannot be recycled and turn it into electricity; enough to power 40,000 homes.
  - Building on the success of the existing precinct, the new facility will be a major investment for regional NSW, creating hundreds of local jobs and driving economic growth in the area.
  - The facility will be an important part of the emerging circular economy for NSW, helping to divert waste from landfill and reduce carbon emissions.
  - Veolia is a world leader in sustainable waste management. Energy from waste technology is being used safely in many countries; Veolia owns and operates more than 65 energy recovery facilities globally.
  - There are strict rules on managing any environmental impacts from energy recovery facilities. Veolia is a global expert in the field and will meet the stringent environmental standards set by the NSW Environment Protection Authority.
  - Veolia has been a part of the local community for nearly twenty years and takes pride in being a trusted and valuable contributor to the area. We listen to feedback and act on what the community tells us.
  - Veolia has a strong track record of support for the local community economically, environmentally and socially. This includes through the Veolia Mulwaree Trust and the rehabilitation of the former mining site. (Appendix K, Project Engagement, page 11)

The project's key messages are missing a number of important key elements and present an innacurate view of the project. Transparency is lacking for the following reasons:

1. There is no mention of possible alternatives to the proposal. These were never discussed with the community, nor was the community's opinion about alternatives sought.

2. The key messages above (and the messaging throughout the campaign) continually avoided addressing the risks associated with the project. These can only be inferred by the mention of "stringent environmental standards" and the fact that the project requires these standards.

3. The key messages indicate that only non-recyclable waste will be used, when in fact the waste feedstock analysis confirms that more than 60% of the feedstock will be organics, paper/cardboard and plastics.

4. There is no mention of how waste will be managed which is the central element of the project. A common theme throughout both the Veolia and NSW Government publications regarding this technology and the Woodlawn ARC proposal has been the absence of the word 'incinerate' or 'incinerator'. The above key project messages do not even mention the term "thermally process" which has been the key manner in which Veolia and the NSW Government have avoided drawing attention to the fact that waste will be burnt/ incinerated. Use of the term 'thermally process' would at least allude to the fact that waste is being burnt.

5. The key messages are quite misleading about the risks of the project. By mentioning the strict environmental standards, Veolia trivialises/minimises the many licence breaches and licence alterations issued for its Woodlawn facility since it began operation in 2004. For those unfamiliar with Veolia's operations, the omission of Veolia's environmental record at the site, along with the omission of any risks and the omission that waste will be burnt, paints an overwhelmingly benign and positive view of the project. It is a highly inaccurate and misleading way to portray the 'key messages' of the project.

- One of the main objectives for this consultation process has been to present clear, simple and accessible messaging about the project. (Appendix K, Project Engagement, page 19)

  Some notable omissions from these objectives are the need for 'balanced' and 'open' messaging in terms of the risks, alternatives, motivations for, and impacts of the project.

- Meet the Experts - An information session was held at the Tarago Town Hall on 4 June 2022 to directly engage the community with the independent researchers who are conducting the Air Quality Impact Assessment (AQIA) and Human Health Risk Assessment (HHRA). (Appendix K, Project Engagement, page 24)

  Veolia referred to this event in the community as an opportunity to "meet the **independent** experts". The phrase 'independent expert' was repeated ad nauseum. This is yet another example of attempts to mislead the community. Consultants performing a paid role to produce a report on behalf of the proponent are not 'independent'. They are paid consultants.

- Circular Economy - Veolia has been pleased that stakeholders generally support the relationship of a circular economy to the proposal and understand the role of the ARC in sustainable waste management. (Appendix K, Project Engagement, page 31)

  CATTI question the validity of this statement given Veolia's demonstrated avoidance of openly and transparently describing the ARC operation, functions and risks throughout the engagement process. Additionally, we are aware that a considerable portion of the community have expressed concern that the ARC and facilities like it are not a necessary part of sustainable waste management. It appears the voices of these stakeholders are being minimised in this report. It is also concerning that the concerns raised by residents about the linear nature of waste incineration as opposed to genuine circular economy principles have been omitted from the summary.

- Consultation and communications
  Requests about Veolia using both colloquial and technical terminology in their materials to accommodate all levels of understanding Veolia has listened to local people' feedback about how the project is described. Veolia' response included amending its language when talking with the community and members of the public to better reflect terminology that the community would use. (Appendix K, Project Engagement, page 32)

  Notably absent are the concerns raised about the absence of the word 'incineration'/'incinerator' in describing the project. This was a common theme from the community from the initial stages.

- Odour - Veolia recognises that odour from existing operations is and has been an issue for some people living nearby, and is committed to reducing odour impacts. Odour management is a high-priority for both Veolia and the community. (Appendix K, Project Engagement, page 34)

  The ongoing issues with odour in and around Tarago (to distances over 20km from the facility) since Veolia's Woodlawn facility opened in 2004 adequately demonstrate that odour management is not a "high-priority" for Veolia. Veolia's committment to reducing odour is called into question by their failure to rectify the matter over a period of 18 years, and their recent EPA fine of $15,000 for odour offences in June 2022 along with the lack of discernable improvement in the odour impact in Tarago and surrounds. (NSW EPA Penalty Notice 3173531433).

- Latest records show a 40% increase in captured gas (in July 2022 compared with the yearly average to date). (Appendix K, Project Engagement, page 34)

  CATTI notes the serendipitous timing of the increased gas capture. This took place only after greenhouse gas emissions for the bioreactor had been calculated for the purposes of conducting a comparative greenhouse gas emissions assessment with the proposed ARC for the purposes of the EIS. CATTI also notes that the sudden focus on increased gas extraction technology coincided with Veolia's ARC proposal, despite ongoing community odour complaints for many years prior.

- There would not be an increase in the total amount of waste approved to be received at
  Woodlawn, and the ARC would use existing rail infrastructure, operating within existing traffic waste input limits for both road and rail. (Appendix K, Project Engagement, page 5)

This statement doesn't indicate whether or not Veolia would be increasing the amount of waste they currently receive. They are not currently at their approved waste limits, so are they planning to increase the waste intake? What will this mean in terms of truck and train transport? This is another example of lack of transparency on an issue of significant concern to residents.

3. Minimal feedback of community issues/concerns into the development planning and implementation

- Requests for a longer public exhibition – Public exhibition timelines are decided by the Department for Planning and Environment. Veolia has communicated this to the community. (Appendix K, Project Engagement, page 32)

The community at each and every event expressed the desire that Veolia, as the proponent, advocate for a longer exhibition time on behalf of the community. Goulburn-Mulwaree Council in their SEARs request advocated for a 3 month exhibition timeframe. Whilst the community understands that the final responsibility for the exhibition timeframe sits with the NSW Department of Planning, Industry and Environment, the community believe that had Veolia added their voice to the representation for a 3 month exhibition period then that request was likely to be granted. Veolia's refusal to advocate on the matter is a further demonstration that Veolia has not, and does not intend to participate in meaningful community engagement.

- Road and rail - The community expressed concerns about traffic delays on the hill climbing out of Crisps Creek due to slower moving heavy haulage vehicles transporting waste. Veolia investigated the impact of road widening to address this. Veolia undertook an independent traffic assessment, which found that the level of service is within limits, but that during construction delays would increase slightly in peak hour. As this is a short-duration impact, widening the road is not recommended to be necessary. (Appendix K, Project Engagement, page 38)

This has been (for many years) and will continue to be an issue of considerable concern for the community. Veolia's refusal to address this issue is yet more evidence that stakeholder engagement was not meaningful.

4. The engagement process has functioned to disempower the community

- *Figure 7: IAP2 Public Participation Spectrum* (Appendix K, Project Engagement, page 11) – Not only is the IAP2 Public Participation Spectrum printed in the report a blurry reproduction, but it is also missing the bottom half of the spectrum denoting how these participation goals relate to the promises made to the public. One particularly notable omission from the entirety of Veolia's engagement has been to inform, consult and collaborate on the development of alternative options and identification of a preferred solution. No alternative solution has been presented to the community, nor has the community's opinion been sought on potential alternatives. Additionally, the overriding theme from community interactions has been the feeling of disempowerment in the decision-making process – the feeling that the community has no meaningful power to the affect the decision-making outcomes. Community requests in regard to the submission process have been ignored not only by Veolia, but also by the NSW Department of Planning, Industry and Environment. Feelings of community disempowerment are strengthened when reading the EIS and noting the extent of Veolia's collaboration with DPIE in direct contrast to the lack of DPIE and Veolia engagement with the community. This is exacerbated by the evident lack of consultation and cooperation on the proposal in regard to requests made by Goulburn-Mulwaree Council.

- Requests for a longer public exhibition – Public exhibition timelines are decided by the Department for Planning and Environment. Veolia has communicated this to the community. (Appendix K, Project Engagement, page 32)

The community at each and every event expressed the desire that Veolia, as the proponent, advocate for a longer exhibition time on behalf of the community. Goulburn-Mulwaree Council in their SEARs request advocated for a 3 month exhibition timeframe. Whilst the community understands that the final responsibility for the exhibition timeframe sits with the NSW Department of Planning, Industry and Environment, the community believe that had Veolia added their voice to the representation for a 3 month exhibition period then that request was likely to be granted. The refusal to advocate for a longer exhibition time on behalf of the community is a clear indication that Veolia will continue to disregard community input moving forward. Denying stakeholders an appropriate timeframe in which to examine the documents relating to a proposal that may negatively impact their health, environment, farms and financial wellbeing over the next 25 years, is a significant act of disempowerment.

- As evidenced by its existing facilities globally, Veolia was able to demonstrate that the integration of EfW into the waste hierarchy does not impact recycling rates, and that rather countries which utilise EfW tend to increase their rate of recycling over time. (Appendix K, Project Engagement, page 34)

Many stakeholders expressed concern that the facility would be burning recyclable materials. This is confirmed in the waste feedstock analysis which indicates organics, paper/cardboard and plastics make up over 60% of the feedstock. The previous information is also in direct contrast to information from the UK[1] which clearly demonstrates that regions with higher rates of waste incineration have lower rates of recycling. Veolia operates many facilities in the UK where this information is from. The community is highly skeptical of claims that incinerating waste will not reduce recycling rates. Veolia has not provided sufficient evidence to demonstrate recycling will not be impacted. Dismissing the community's concerns in this manner without properly addressing the issue is another way in which the document owners (Veolia) acts to disempower the community in the decision-making process.

1. Reference: Data sourced from the Department for Environment, Food and Rural Affairs, UKWIN (UK Without Incineration Network) Facts & Figures (ukwin.org.uk/facts) 2022)

5. Proposed future community and stakeholder engagement measures are inadequate

Veolia's future community and stakeholder engagement strategy relies heavily on the existing Woodlawn bioreactor Community Liaison Committee. Veolia describes the CLC in the following way:

- Veolia prides itself on having been a respectful and valuable contributor to the local community for almost 20 years. Community and stakeholder engagement began with Veolia's acquisition of the former mining operations, with the Community Liaison Committee (CLC) established in 2001 for the initial Eco Precinct. Since its inception, the CLC has played an important role in Veolia's community engagement program. (Woodlawn ARC Environmental Impact Statement, page 19)

- Following approval being granted for the development of the Bioreactor landfill, Veolia established the Community Liaison Committee (CLC) in 2001, which continues to function. The purpose of the CLC is to achieve an open and transparent dialogue between operations at the Eco Precinct and the community. The regular meetings provide an opportunity for Veolia to share quarterly updates on its operational activities, and a forum for committee members to provide feedback as individuals and from the wider community. Actions from these sessions are recorded and made publicly available on Veolia's Woodlawn Eco Precinct website (https://www.veolia.com/anz/WoodlawnEcoPrecinct). (Woodlawn ARC Environmental Impact Statement, page 116)

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

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IAP2 Public Participation Spectrum

- To enhance the benefits of community connectedness and resilience associated with Veolia's community contributions, it is recommended that investment and community development be prioritised in the local area and tailored to the social needs of the community. Veolia will seek to refresh the structure, organisation and objectives of the CLC with the goal of meeting these plans. (Woodlawn ARC Environmental Impact Statement, page 284)
Currently, Veolia invests and works collaboratively with the community through the Community Liaison Committee and Veolia

Mulwaree Trust. To date Veolia has supported the community with over $12M in grants, which has been distributed to 1,400 projects to enhance local facilities, education, and the environment (Veolia 2021a). To enhance the benefits of community connectedness and resilience associated with Veolia's community contributions, it is recommended that investment and community development be prioritised in the local area and tailored to the social needs of the community.
Veolia will seek to refresh the structure, organisation and objectives of the CLC with the goal of meeting these plans. (Woodlawn ARC Environmental Impact Statement, page 284)

There are a number of problems associated with reliance on Veolia's Community Liaison Committee for future stakeholder management and engagement:

1.CLC membership (controlled by Veolia) demonstrates a pattern of non-representation and under-representation of the community members most impacted by its ongoing operations. Women are more likely to be impacted (and likely to be more severely impacted) by odour from the current operations (due to biological olfactory differences between men and women). Additionally, women are more likely to undertaken caring responsibilities for those experiencing illness or health concerns associated with Veolia's operations (including caring for children, parents and neighbours). There have been no female community representatives in attendance at CLC meetings in more than 2 years (since 12th November 2020). Prior to this, female representation has been minimal and sporadic. Concerns were raised by the community as a priority with Veolia in May 2022 (given the proposal for an incinerator) but the matter is yet to be addressed. This fails to demonstrate that the CLC will be an effective means of engagement with vulnerable members of the community.

2. The CLC has failed to ensure that there is an "open and transparent dialogue" with the community. CLC minutes are often not uploaded until 6 months after the date of the meeting. Former CLC members have stated that Veolia's meeting minutes do not accurately reflect community concerns raised in the meetings.

Veolia has restricted the CLC from sharing information with the community. One example is the CLC meeting with the Staffordshire CLC that was classified "commercial-in-confidence" at the end of the meeting to actively prevent information sharing.

3. Veolia provides contradictory advice to residents about the purposes of the CLC, its remit and joining information. For example, Veolia stated that the CLC had no involvement with the ARC process: "I'd like to highlight that the CLC is not engaged with the Advanced Recovery Centre (ARC) Project, and their meetings do not discuss the project's progress. The purpose of the committee involves current onsite operational activities only. CLC members have requested that any and all ARC related updates and discussions be held in separate meetings, called by the project team or the committee as required." (email from Justin Houghton, 2/05/22). This advice is clearly contradicted by the information presented in the EIS, one example being the CLC meeting with the Staffordshire CLC.

4. Concerns raised about the CLC structure and functionality are unlikely to be addressed in a timely manner. Concerns about the under-representation of women on the CLC were raised with Veolia in April 2022. They are yet to be resolved.

5. There are currently no community representatives remaining on the CLC. All the remaining CLC representatives resigned in protest at Veolia pushing ahead with the Woodlawn ARC proposal against the wishes of the community.

6. Document inaccuracies are as follows:
Mayor Peter Walker, Goulburn-Mulwaree Concil (GMC)
Cr Denzil Sturgiss, GMC
Attended Woodlawn Community Open Day and met with project representatives.
Project update shared via correspondence.
20 June 2021
27 August 2021
Mayor Peter Walker Thank you letter for Community Open Day attendance.
Letter sent to provide an update on the project and invite further discussion.
14 July 2021
10 August 2022(Project Engagement, page 58)

These entries appear incorrect. GMC Mayor on 20 June 2021, 27 August 2021 and 14 July 2021 was Bob Kirk.
Mayor Peter Walker
Warwick Bennett – General Manager
Scott Martin – Director Planning and
Environment
Meeting and discussion with Project Director. 30 September 2021
(Project Engagement, page 59)
This entry appears incorrect. GMC Mayor on 30 September 2021 was Bob Kirk.

SEARs requirements:

a quantitative assessment of the potential air quality, dust and odour impacts of the development (construction and operation) on surrounding landowners, businesses and sensitive receptors, in accordance with relevant EPA guidelines, including:

- **a description of all potential air emissions and odours and their sources, including construction, operational, transport sources and dust generation**
- **details of the receiving environment, including meteorology and climate, topography, surrounding land use, sensitive receptors and ambient air quality**
- **modelling of 'worst case' (including a trip or emergency shutdown), regulartory and reference facility emission scenarios**
- **consideration of the recent (May 2021) amendments to air pollutant standards in the National Environmental Protection (Ambient Air Quality) Measure (NEPC, 1998)**
- **justification for the level of assessment undertaken based on risk factors, including but not limited to the proposal location, characteristics of the receiving environment and the type and quantity of the pollutants emitted**
- **details of the proposed technology and a demonstration that it is technically fit for-purpose, including details of commissioning and proof of performance**
- **details of emission control techniques and practices, including emission sampling and monitoring, that will be employed, and benchmark these against best practice emission control and management, with reference to the European IPPC Bureau 'Industrial Emissions Directive', BAT (Best Available Techniques) Reference Document (BREF) BREF 2019 and the NSW Energy from Waste Policy Statement (EPA, 2021)**
- **demonstrate a commitment to continual improvement with respect to emission control techniques and practices**
- **an assessment of cumulative air quality and odour impacts associated with the facility and surrounding development, including any approved (but not yet constructed) developments and the proposed Jerrara Power Energy from Waste Facility (SSD-22879238)**
- **details of all air quality and odour management, mitigation and monitoring measures**

A number of items of concern have been identified with the Air Quality Impact Assessment in relation to the SEARs criteria. Due to the time constraints related to providing a response within the public exhibition timeframe, these are presented below in no particular order:

- Staffordshire ERF – Annual Report
  An interpretation shows that the emission levels are consistently stable from month to month. This data is communicated monthly to the public via our Veolia website in terms of a percentage of each ELV. A more detailed WID report is sent to the EA each month showing emissions per pollutant per line, per month in terms of half hourly averages and daily averages. (Appendix L(ii) - Woodlawn ARC Reference Facility, page 8)

  The statement that Staffordshire ERF data is updated monthly to the public is untrue. The last updated data on the Staffordshire Four Ashes Website is from December 2021 (as of 9/12/22). When this matter was queried with Veolia by a local resident (FJ) in June 2022, the resident was told data was only required to be updated 6-monthly. During subsequent follow-up prior to and during the EIS exhibition period, Veolia

stated there was no legal requirement to update this information. This demonstrates existing problems with a lack of transparency at the reference facility and a pattern of misinformation to the communities affected by Veolia's operations. It builds upon communication and transparency issues associated with Veolia's current Woodlawn operations to provide compounding evidence that residents will not be afforded transparency if this proposal proceeds.

- 10.2.2 ERF emissions monitoring – As per the requirements of the EfW Policy, as far as practicable to do so, validated emission monitoring data will be made available publicly within 24 hours following the end of a weekday and the following weekday after weekends and public holidays. Emission monitoring data will be made available to the EPA in real time graphical publication and a weekly summary of continuous monitoring data and compliance with emissions limits published on the internet. (Air Quality Impact Assessment, page 126)

  The EIS states that the Veolia reference facility in Staffordshire makes emissions data available on a monthly basis to the public. (Appendix L(ii) - Woodlawn ARC Reference Facility, page 8) Veolia has variously stated in email communication with a local resident (FJ) that the reference facility data is updated 6-monthly, and subsequently stated that there is no requirement for the data to be updated at all. The data has not been updated in over 12 months. This demonstrates there is no guarantee this information will be made publicly available with the full transparency required to the affected communities and monitoring agencies.

- The maps used in the Air Quality Impact Assessment grossly understate the number of residential dwellings in Tarago. They make it appear as though there are only a couple of houses where there are many. (Figure 3.2, Air Quality Impact Study, page 17)

- Claims that there will be no 'significant change' to air quality impacts is misleading. It attempts to minimise the air impacts that the EIS quantifies, and disguise that the project will generate particulate matter and the emissions of specific toxic compounds such as sulphur dioxide, ammonia, heavy metals, dioxins and furans into the local atmosphere which are not currently being emitted from the existing operations. This will impact the surrounding community which is not currently exposed to such emissions.

- The pollution plume study is highly questionable. Both Woodlawn and Tarago are on the Great Dividing Range. Woodlawn is at an altitude of 720m and Tarago at 700m. There are several substantial ridges between the two locations, reaching 100m-200m above the surroundings. The prevailing wind pattern is east-west with dominant easterly winds during winter. The north-south ridges will have a substantial impact on the prevailing eastward winds, forming eddies parallel to and on the leeside of the ridges. These will dump accumulated pollution in the valleys behind the ridges. As Tarago is directly adjacent to a north-south ridge, it is likely to be heavily affected by pollution dumped from the eddies. Similarly affected will be agricultural land around Bongaralaby Creek and Lake Bathurst. Lake Bathurst, with no natural outlet, is likely to keep accumulating pollutants drained into it. The CALMET modelling is insufficiently detailed to provide the necessary accuracy and must be rerun with a higher resolution. Modelling using coarser grids most likely will under-represent the pollution imposed on Tarago by a Woodlawn incinerator.

- Section 5.4 Meteorological modelling (Air Quality Impact Assessment, page 31) – The report states *"In the absence of upper air measurements..."*, but the Bureau of Meteorology website for upper air data states that this is measured at Canberra. As one of the weather stations used was Canberra, why is there an *"absence"* of upper air measurement data?

- Figure 5.6 Example of spatial variation in CALMET-predicted wind field – Eco Precinct and Tarago (Air Quality Impact Assessment, page 31) – If this diagram is indicative of wind direction in the area then it clearly shows a change in wind direction in the region of tarago that is different to that at the Eco Precinct. This would likely result in some significant eddies in the area of Tarago that would result in deposition of material. Was this the case in any of the modelling? Would this have a significant impact on the odour issues that are seen in the area?

- Figure 5.8 Diurnal variation in CALMET (Air Quality Impact Assessment, page 34) – It is unclear if this height shown is above Sea Level or some other datum point. This needs to be clarified.

- Sampling/modelling outlined in the AQIA will not prevent nor adequately monitor Persistent Organice Pollutant (POP) pollution. The air quality impact assessment indicates there will be twice-yearly stack sampling for pollutants not measured by the CEMS - "specifically dioxins and furans, PAHs, HF and assorted metals" (Appendix O – Air Quality Impact Assessment, page 55). Occasional measurement of emissions of highly toxic Persistent Organic Pollutants (POPs) such as dioxins and furans and the monitoring of yearly averages is concerning because surrounding residents will be breathing air at the time of pollution, including when emissions levels are at their highest. Studies done on the continuous monitoring and bio-monitoring of dioxins from a modern, best-practice incinerator installed in 2011 near Harlingen in the Netherlands[1, 2, 3, 4, 5] clearly show that occasional measurement of dioxins can lead to seriously flawed outcomes: *"Currently only short-term flue gas sampling is mandated by the authorities; based hereupon, under normal operating conditions, the incinerator appears to be compliant with emission standards. This short-term sampling scheme is seriously flawed, however, in that it only demands one continuous 12-hour sampling period per annum – an extreme grab sampling transgression in the time domain. In starkest possible contrast, significantly elevated dioxins emissions were measured in flue gas during events of unstable combustion conditions by continuous long-term measurements. The dioxin congener patterns from long-term flue gas sampling show similar patterns as the congeners found in backyard chicken eggs and grass, evidence that elevated dioxins in eggs is due to emissions from the incinerator. These results make it mandatory to perform long-term, continuous measurements for all sources where similar hightemperature combustion/emission processes take place."*[4] POPs are toxic at concentrations in the order of parts per billion (ppb, 10^{-9}) and even parts per trillion (ppt, 10^{-12}). They accumulate in the fatty tissue of humans and animals and do not naturally break down. Individual chemical sensitivity to toxins and pollutants varies considerably, and children are particularly vulnerable to toxins as they develop. The concerns about POPs pollution are highlighted by the Woodlawn ARC EIS Waste Feedstock Analysis that indicates some feedstock is likely to contain more than 1% of halogenated substances, which would require incineration at 1100 degrees celcius to minimise POPs pollution. The Woodlawn design indicates operation will take place at 850 degrees celcius.

References:

1. https://www.researchgate.net/profile/Abel_Arkenbout2/publication/298436004_Biomonitoring_of_dioxinsdl-PCBs_in_the_north_of_the_Netherlands_eggs_of_backyard_chickens_cow_and_goat_milk_and_soil_as_indicators_of_pollution/links/5a3cd240a6fdcc21d8791c88/Biomonitoring-of-dioxins-dl-PCBs-in-the-north-of-the-Netherlands-eggs-of-backyard-chickens-cow-and-goat-milk-and-soil-as-indicators-of-pollution.pdf).
2. https://www.ausimm.com.au/publications/epublication.aspx?ID=17245
3. http://www.afvalovennee.net/wp-content/uploads/Sampling-monitoring-and-source-tracking-of-dioxins-in-the-environment-of-an-incinerator-in-the-Netherlands-kopie.pdf
4. http://www.wcsb8.com/Media/WCSB8/presentations/1445_Abel.pdf
5. http://m.energy.siemens.com/mx/pool/hq/automation/automation-control-pg/sppa-t3000/documents/Harlingen_control-system_sppa-t3000_complete-electrical-package_sppa-e3000_service-for-I&C-electrical.pdf

- Woodlawn's altitude and hot summers will aggravate the pollution impact of incineration. The proposed incinerator at Woodlawn will be located at an altitude of 720 metre and will operate across an expected temperature range from -5°C to 40+°C. Air at an altitude of 720 metre is about 9% less dense than air at sea level[1, 2, 3] . Air at 40EC is about 13% less dense than air at 0 °C.[2, 4] The two effects are cumulative. On a hot summer afternoon, and there will be plenty with accelerating global warming, air around the Woodlawn incinerator could be about 22% less dense than air at sea level at night. Yet, the incinerator will emit similar quantities of most pollutants as at sea level, and probably more carbon monoxide. Air that is 22% less dense will thus become some 28% (22*100/78%) more polluted compared with "standard" air. People breathing the less dense air will need to breathe greater volumes for the same oxygenation, thus may breathe in 28% more pollution. People will experience its pollutants more severely in the Tarago region than they would on the eastern seaboard, and it will be harder to sustain incineration within allowable pollution limits. If the NSW EPA rejects the notion of incineration in the Sydney basin (at an altitude of 50 metres or less) then they also should reject the notion of an incinerator at Woodlawn at an altitude of 720 metre where aggravated pollution from the incineration process would severely impact on the health of local residents and workers at the facility.

References:

1. http://www.air-dispersion.com/formulas.html
2. https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=47804&CFID=77708346&CFTOKEN=52782755
3. https://www.homerenergy.com/products/pro/docs/latest/altitude.html
4. https://www.engineeringtoolbox.com/air-altitude-density-volume-d_195.html

- Dust generation - dust generated during construction does not appear to have been assessed as an additional consideration to site emissions during construction.

- Modelling ‘emergency shutdown’ - the emergency shutdown scenario assumes that there is no alternate path for toxins to atmosphere except through filters. It is assumed that if any anomaly is detected then the system stops feeding waste until this is resolved. There is no assessment on the time to recovery.

- Modelling: the document does not appear to address dosing issues relating to ammonia, activated carbon or lime.

- Justification for the level of assessment undertaken was not spelt out in terms of the SEARs requirements - i.e. *“risk factors, including but not limited to the proposal location, characteristics of the receiving environment and the type and quantity of the pollutants emitted”.*

- There is insufficient detail provided on commissioning and proof of performance. The proof of performance is attributed only to sensor performance and does not relate to full performance of incinerator and power systems. Accuracy of the sensors does not provide the assessment against the performance parameters required - it provides measurements only (lacking efficiency or emission performance assessment).

- Assessment against the BAT items listed has been done but it is difficult to assess the level of confidence generated. The BAT compliance assessment makes a considerable number of generic statements about EfW. Proof of performance compliance is only mentioned in regard to monitoring. There is insufficient information to demonstrate proof of performance for plant operation. There are a number of items in “7. Assessment of Woodlawn ARC against the BAT Criteria” (Woodlawn ARC – BAT Assessment, page| 29) that are marked compliant where the information provided is insufficient and/or the comment is inconsistent with the stated compliance. These are:

    - BAT 1 is stated as compliant but most of the statements relate to future planning documents or decisions. Therefore this is not compliant and needs to be assessed at a later timeframe.
    - BAT5 requires emissions to be monitored during OTNOC but the comment clearly states this will not be the case.
    - BAT11 requires radioactivity detection on inputs yet this is clearly not included in the comment for the design.
    - BAT12 does not mention anything about container storage on site, at crisps creek or sydney. All storage locations should be included.
    - BAT19 only restates electricity generation. Does this BAT not look for other recovery besides electricity generation (e.g. heat recovery)?
    - BAT32 the explanation does not account for why compliance to this is indicated as N/A.
    - BAT33 the comment is not applicable as is does not refer to using water from the process (as noted in the BAT subtechnique). It instead discusses using rainwater in preference to bore water.
    - BAT34 is applicable as it is processing ashes at the plant.

- *10.1.2 Operational phase emissions – A detailed review of the mitigation measures proposed for the project has been undertaken as part of the EIS (Appendix L1, Ricardo 2021 and Appendix L2, Fichtner 2021). The reviews concluded that the measures proposed for implementation at the project are aligned with accepted BAT measures for air pollutant emission control wherever practicable to do so. (Air Quality Impact Assessment, page 125)*

  The BAT assessment is flawed as there are sections where compliance is claimed but the conditions are not met. There is also no assessment within the BAT assessment document for what is practicable. What is Veolia’s definition of practicable for each of the emissions that are listed? The BAT assessment relies on information relating to the most used technologies and does not conduct an assessment of the technical appropriateness of the technology, nor in most circumstances, on all the technology options available. (One example is the vitrification of APCr.).

- It is also concerning that aspects of the technical assessment of compliance (for example, the BAT Assessment – Appendix L(i)) do not follow recognised engineering procedures for conducting an independent assessment. An example of this is the Technology assessment which draws a conclusion on the achievement of limits (that aligns with the claims Veolia is making) prior to an examination of the technology proposed for use (and/or a comparative assessment of other technologies).

  "The Woodlawn ARC will comprise a single combustion line, using an inclined moving grate to efficiently combust the full range of waste feedstock. The technology chosen ensures that under normal operating conditions, emission limit values do not exceed the emission levels associated with the NSW EfW Policy. Only proven technology deployed in similar regulatory applications and at similar scale will be Used." (Woodlawn ARC – BAT Assessment, page 4)

  Additionally, there are indications that cost considerations were used as a selection criteria prior to a full assessment of the system performance against other available technologies. For example, in discussing the nitrogen oxides abatement method in the quantitative BAT assessment the report states:

  "This results in SCR generating higher operating costs whilst resulting in lower plant energy efficiency." (Woodlawn ARC – BAT Assessment, page 13)

  Cost considerations should only be factored into an assessment once the technological capabilities of the various available technologies have been assessed and compared as to their effectiveness in achieving the required outcomes of the project.

- There is no direct mention of continual improvement of the systems described in the Air Quality Impact Assessment (emission control techniques and practices). Continual improvement is merely implied. Attempts are made to link odour control to the demonstration of continual improvement, but community experience suggests this has not been successful nor applied consistently. This is supported by an EPA penalty notice (3173531433) and fine of $15,000 issued to Veolia on 28 November 2022 for odour offences in June 2022.

- Air quality and odour management, mitigation and monitoring measures are listed in the Air Quality Impact Assessment, but it is unclear whether or not this is a full list with all details included.

- Figure ES1 (Air Quality Impact Assessment, page ES.5) shows the measured background and predicted particulate 2.5, NO2 and CO concentrations. NO2 and CO concentrations from current and future operations equal half the typical condition measurement. Does this mean that Veolia's operations contribute half of the regional impact for NO2 and CO?

- ES5 Mitigation measures (Air Quality Impact Assessment, page ES.5) does not contain any mitigation for:

  - APCr storage, handling or encapsulation cell
  - IBA usage post maturation.

- Project overview 2.1 Existing operations (Air Quality Impact Assessment, page 5) – The opening paragraph lists the distance to Goulburn as 50km and Canberra as 70km. Further down in the section it describes the distance to Crisps Creek as 6km (8.5km by road). The distances to Goulburn and Canberra are by road but are not indicated as such. Stating both the Crisps Creek road and direct path distances shows a clear decision by Veolia to use an increased distance to the population centres of Goulburn and Canberra in order to lessen the perceived impact of the project on these centres.

  If there is no qualification made on the distance it should be direct path distance only. This also occurs in section *3.1 Local setting, land use and topography* (Air Quality Impact Assessment, page 15) where the following distances are stated: Goulburn 50km, Canberra 70km, Collector 20km, Lake Bathurst 9km and Bungendore 24.5km. In this instance the distances for Collector, Lake Bathurst and Bungendore are direct path distances, however the distances to the larger population centres of Goulburn and Canberra are 50km and 70km. This clearly demonstrates Veolia's intention to obfuscate the distances to these population centres.

  Direct distances are listed for the Bureau of Meteorology Weather station locations in (Air Quality Impact Assessment, page 26). These state that the distance from the proposed site is 31km to Goulburn Airport and 44km to Canberra Airport

- *A Leachate Treatment Plant (LTP) was approved in late 2017 (DA31-02-99-Mod-3/MP 10_0012 Mod 2) to improve the performance of the Bioreactor. It commenced operating in 2018 and manages leachate that is pumped from the Bioreactor void. The leachate treatment plant facilitates better environmental and operational performance by allowing Veolia to extract and treat greater volumes of leachate from the Bioreactor, minimising the generation of odour, enabling more efficient gas extraction and maximising the waste to energy benefits of the Bioreactor. Six evaporation dams are used to manage the accumulation of treated leachate via natural and assisted evaporation.* (Air Quality Impact Assessment, page 7)

  This has not been realised based on the hundreds of odour complaints from tens of kilometres away from the facility in the surrounding region (most recently resulting in a $15,000 fine in June 2022 – EPA penalty notice 3173531433) and the additional measures put in place by the NSW EPA for odour monitoring and management in July 2022 (EPA licence variation 1617130). In addition, the original Veolia licence condition (consents) clearly state "*113. There shall be no offensive odour emitted from the premises, in accordance with Section 129 of the Protection of the Environment Act 1997, nor emissions to the atmosphere from the landfill that may adversely affect the health or amenity of the community. (EPA GTA)"* This condition remains unchanged in any of the follow-on consents.

- Section 2.2.2, Stage 2 combustion and heating, ii Grate System – *As a contingency measure and in case the temperature in the secondary combustion chamber drops below the specified temperature range, diesel fired auxiliary burners will automatically start operation. Evidence shows that such activation occurs very rarely.* (Air Quality Impact Assessment, page 12)

  No evidence has been provided to demonstrate activation of the burners 'occurs very rarely'. This claim should be clearly referenced and the data relating to diesel burner use available publicly for review.

- Section 2.2.4, Stage 4 flue gas treatment system – *After combustion control, the control and abatement of NOx emissions will be achieved through selective non-catalytic reduction (SNCR) technology, whereby the combustion chamber has a selective SNCR system using ammonia. Ammonia will be injected (9) into the hot gas stream for the purpose of controlling NOx. This will occur in the post-combustion chamber where the temperature conditions will be correct for the denitrification process to occur. Typical reducing agents include urea or ammonia water.* (Air Quality Impact Assessment, page 13)

  There is no indication in the process description of what temperatures are required to constitute the correct conditions. The AQIA describes that there are multiple injection points so that the injection location can be varied. This would have a large impact on NOx control measures, but what these impacts are is also not clearly discussed.

- Section 2.2.4, Stage 4 flue gas treatment system – *Hydrated lime and activated carbon will be metered and injected to the reaction ducting which will ensure turbulent flow and mixing of the hydrated lime, activated carbon and flue gas, to maximise the neutralisation of acid gases and adsorption of dioxins, furans and heavy metals.*(Air Quality Impact Assessment, page 13)

  In discussions with the author of this report at Tarago on 12/11/2022, a local resident (DB) was informed that the activated carbon is screw fed at a constant rate. The feed rate will only be adjusted based on samples that are taken in accordance with EPA guidelines. As activated carbon is the primary method of ensuring remaining dioxins and furans are not exhausted from the stack, this presents a very definite risk that process inaccuracies will result in insufficient amounts of activated carbon being injected to ensure full capture of these toxins. These amounts are also reliant on the proper cooling of gases prior to injection so dioxins and furans do not increase in the post combustion chamber (Appendix L (i) BAT Assessment, BAT 30, page 56):

  "The boiler will incorporate a number of tube bundles as part of the heat recovery system, including evaporator, superheater and economiser tubing sections and these will be positioned to ensure that good quality steam can be produced at the same time as ensuring a rapid temperature drop of the flue gas through critical temperature bands to prevent the reformation of dioxins furans via de Novo synthesis." This is not mentioned in the AQIA mitigation or control systems.

- Section 2.2.4 – *These gases will be monitored continuously to ensure they meet strict environmental legislation via the continuous emissions monitoring system (CEMS) (18).* (Air Quality Impact Assessment, page 13)

  The AQIA provides no information on what is recorded from the CEMS or information on when it is recorded. The CEMS should be continually recording whenever heat is being applied to the incinerator (during the burning of waste and during operation of the diesel burners). The data can be tagged as to indicate whether or not waste was present on the grate for the purposes of later assessment. Without a continual record of emissions of interest there will always be concern about emissions exceedances and lack of transparency.

- Section 2.2.5 Stage 5 residue handling and treatment, ii APCr (Air Quality Impact Assessment, page 14) – APCr stabilisation is articulated as the use of a binding agent (eg cement).
  There are many statements throughout the various EIS documents that state the stabilisation method is unconfirmed – it may be cement or another process may be used. The stabilisation technique is essential for determining aspects of pollution control. Where is the reasoning provided for the decision to only consider cement stabilisation in the AQIA? In the absence of this, information on all stabilisation methods under consideration should be addressed.

- *Table 4.1 Air pollutants by Eco Precinct Component (Air Quality Impact Assessment, page 19)* –
  This table lists the APCr encapsulation cell but does not indicate that Dioxins and Furans are a pollutant from here. How is this the case when using a cement stabilisation technique?

- 4.2.2 Gaseous pollutants – Impact assessment criteria are not prescribed for total VOCs; however, one of the more commonly assessed VOCs is benzene, which also has one of the more stringent impact assessment criteria of all the principal toxic air pollutants. Benzene is therefore adopted as a suitable proxy for the assessment of VOCs, on the basis that if compliance is achieved for benzene, compliance can also be assumed for other VOCs. (Air Quality Impact Assessment, page 20)

  There is a considerably long list of pollutants in Table 4.3. The most stringent criteria on the impact assessment is Dioxins and Furans, followed by PAHs, with Benzene having the highest allowable limit. Was Benzene selected because it is easiest to measure out of the three VOCs? How will the measurement of Benzene correlate to the levels of emissions for other VOCs (i.e. validate the assumption)?

- 4.4 Odour impact assessment criteria (Air Quality Impact Assessment, page 24-25) – The AQIA adopts an odour assessment criteria of 6ou to align with current annual odour audits. The latest odour audits have been rejected by the EPA as not satisfactory and there have been a significant number of complaints in the last few years. At the end of the section it is stated an odour goal of 2ou is also considered and based on Tarago population 3 ou would be maximum. Considering that the original licence to operate indicated that no odour should be emitted from site it would be pertinent that only a 2ou odour goal would be acceptable.

- 6.5 Odour *"Other than Veolia operations, no other significant sources of odour were identified in the region surrounding the Eco Precinct. In order to represent background odour in the dispersion modelling process for the project, emissions from existing sources of odour will be quantified based on the most recent site-specific emissions monitoring data and modelled."* (Air Quality Impact Assessment, page 45)

  How will this be conducted? The residents of Tarago have been continually told that it is not possible to predict odour levels based on measurements. What emissions data will be used to quantify the odour sources?

- 7.1 Project emissions - construction phase – *Throughout the 3 year construction period, it is considered that the 6 month civil works phase will have the greatest potential for air pollutant emission generation. However, the emissions intensity during this phase is expected to be lower than approved operations across the Eco Precinct or future operations of the Eco Precinct with the operational project. Furthermore, any construction-related air pollution emissions will be generated well within Veolia-owned land and distant from surrounding sensitive receptors. Consequently, air quality impacts from the construction phase are expected to be lower than the current or future operational phases.*
  Construction phase air pollutant emissions and impacts are not considered further in this assessment. Indicative management measures for the construction phase are presented in Section 10. (Air Quality Impact Assessment, page 48)

  If the current approved operations are ongoing during construction, won't the construction based emissions add to the current emissions?

- 7.2.1 Reference Facility - Staffordshire ERF (Air Quality Impact Assessment, page 49) – This information indicates that data for years 2016 to 2020 were provided. 2017 was the year presented as used for the AQIA on Veolia recommendation that it represented the most typical operational year. (Additionally, we note that the author of this report told a local resident (FJ) at the 'Meet the Experts' event on 4th June 2022 that only 2017 data was provided). Was any comparison done on the AQIA data from other years to check for additional excursions or issues? Does the CEMS recorded data provide information for when the plant was in OTNOC? Or for the times there was issues with recording? Why wasn't all the data analysed to provide a more complete picture of operations?

- "The recorded spikes in NOx and SO2 were queried with the operators of the Staffordshire ERF. It is understood that the spikes were associated with waste feed stock consistency issues and are considered to be representative of abnormal emissions." (Air Quality Impact Assessment, page 55)

  Other sections of the EIS documentation claim that Veolia's proposed facility can sustain some inconsistencies with feedstock, but this statement clearly shows that feedstock has a direct impact on emmisions of the plant.

- 7.2.4 ARC building emission rates (Air Quality Impact Assessment, page 59) – There are a number of emission rates that are required to be predicted for the Veolia incineration proposal that do not correspond to a direct dataset from the Staffordshire facility. The reference facility data is thus inadequate and assumptions have been necessary to determine emission rates for the proposed incinerator for the purposes of assessment. This does not meet the Energy from Waste Policy Statement requirements for a reference facility.

- *Table 7.7 Staffordshire ERF outages and mitigation for the project* (Air Quality Impact Assessment, page 66) – This states that nine (9) system servicing outages occurred and these were events that are considered unavoidable. Veolia's proposed Woodlawn incinerator proposes to have one (1) planned service period per year but the table states "*Considered to be unavoidable, however will be planned to run in parallel with other outages to minimise occcurrences"*. Does this indicate there will be more than one (1) planned outage? Will this have any additional impacts on emissions from the facility?

- Section 7.2.5 ii (Air Quality Impact Assessment, page 66) - States the CEMS will be operational when waste is on the grate. The CEMS should be operational and recording at all times when there is heat generated in the incinerator. Data from periods of OTNOC can be flagged, but all the data must be recorded so that the NSW EPA can be assured there is comprehensive knowledge of what emissions are being output at all times the plant is operational.

- Section 7.2.5 ii – *"Because waste would only be present on the grate when temperatures are sufficient for thermal destruction, odour emissions from the ARC building stack under OTNOC would not occur."* (Air Quality Impact Assessment, page 67)

  Does this mean that there will be odour emissions from the ARC building stack under normal operating conditions? What about diesel burning fumes during startups/shutdowns and other periods of OTNOC

- *Table 9.1* (Air Quality Impact Assessment, page 82) – The dust deposition numbers on the bottom line all have the same rate of 0.02 but the percentages of criterion change between 1.2% and 1.0%. Why does this occur?

- Concentration maps (Air Quality Impact Assessment, page 92) – There appear to be pockets of higher concentrations at what appear to be higher elevation locations. This specifically occurs around Taylors Creek, and while not at the levels of the Veolia boundary, show that there are areas further afield from the Veolia site that could be significantly impacted and would require further study. All of these locations should become sites for soil, air and water monitoring stations should the facility be approved.

- Figure 9.28 Contribution to eight highest 24 hour PM10 concentrations at Woodlawn Mine assessment location – Mine plus Eco Precinct plus background (Air Quality Impact Assessment, page 117) – Although the maximum exceedance is not the mine or eco precinct, four of the eight ranks show a significant proportion of contributions is from the eco precinct. These are not explained or quantified in regards to frequency nor reason for occurrence. Figure 9.29 for the future proposal shows slighlty decreased levels on the same ranked items but they are still the most significant eco precinct contributions and are not quantified.

- 9.3.2 Odour modelling results– The predicted odour concentrations were compared with the equivalent results presented in the IOA#9 (TOU 2021). The predicted odour concentrations are higher in this modelling assessment relative to IOA#9. While the exact reasons for this difference are unknown, EMM consider that a key contributing factor is the adoption of site-specific meteorological data in the current dispersion modelling undertaken for the Eco Precinct (IOA#9 based meteorological predictions on inputs from the BoM Goulburn Airport station). (Air Quality Impact Assessment, page 120)

  This clearly shows there are difficulties in predicting odour issues from the modelled information. While this modelling shows differences to the IOA#9, there are still some ambiguities between data and actuals.

For the model to be considered appropriate, what level of correlation between actual odour complaints and the model is required to determine that the plant cannot meet the *"No Odour"* requirement in their licence conditions? And what reponse will be provided by NSW EPA and DPIE when the issue is not resolved for the current licence, let alone if future work is approved?

- *Table 10.2 EfW policy emissions monitoring requirements* (Air Quality Impact Assessment, page 127) – This section provides the frequency of monitoring for pollutants in the waste policy. There should be a clear assessment done on all available technology (not shown in report) to determine if there is equipment that can continuously monitor all the items within this list. For items that cannot be continuously monitored then the frequency of monitoring should be higher (at a minimum of monthly), as data shown throughout the report indicates that variations in feedstock can lead to a significant change in emissions. The feedstock analysis Appendix I(i) and sampling Appendix G do not provide confidence that waste can be made relatively homogeneous for feedstock purposes, and this means there will always be concerns about emissions exceedances.

- Air Quality Impact Assesment, Appendix A – This details the emissions monitoring assessment locations, describing the furthest assessment location at 19.3 km from the proposed stack. How does this compare to odour complaint distances? There is also information from incinerator operations in Europe that indicate incinerator pollutants show evidence of elevated levels for substantial distances (e.g. 60 km). Air pollutants can be tracked over distances of more than 100km. This would indicate the range of the assessment locations is deficient.

- Table C.4 Calculated annual TSP, PM10 and PM 2.5 emissions for the ARC precinct (future) (Air Quality Impact Assesment, Appendix c, page c.7) – Of the 19,776 kg of particulate emissions for the proposal, 6,315kg (one third) comes from the APCr encapsulation cell operations (FEL and wind erosion on the encapsulation cell) and relates directly to APCR particulate dust. The next highest category is wheel-generated dust on sealed roads (4,724kg), followed by 3912kg from trucking the IBAA to the bioreactor. Emissions relating to IBA (transfer to IBA maturation area, unload to IBA maturation area and exposed ground wind erosion in the IBA maturation area) account for 1,445kg.. Given the difference in the amounts of IBA and APCr produced (there is approximately 480% more IBA produced than APCr), and yet APCr particulate emissions account for approximately 430% more emissions than IBA. Veolia's EIS documentation indicates APCr is significantly more contaminated than IBA. Control measures associated with the generation of this particulate matter appear to be drastically insufficient. Of the 6,315kg of APCr particulate emissions generated, 4615kg is due to movement of the material by the Front End Loader. This indicates the design of the cell and the stabilisation methods are inappropriate.

- The NSW EfW Policy Statement emissions monitoring and design requirements standards differ to those of the European Industrial Emissions Directive (IED) Best Available Techniques conclusions (BAT-C). The reference facility provided by Veolia operates under the requirements of the IED BAT-C, and cannot demonstrate compliance with the NSW EfW Policy Statement requirements. The policy requires demonstrated compliance through "*reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions*" (page 5).

- The EIS notes:

  "The principal areas of difference relate to the air emission levels for the plant which are designed to be in accordance with the NSW Energy from Waste Policy. It is noted that the emission levels for NSW are required to be monitored and maintained over a 1-hour averaged basis. Whilst the target compliance emission levels may be higher than those and other limits specified in Europe and the UK, the shorter averaging timeframe, hourly versus daily, presents further challenges to designers. (Woodlawn ARC – BAT Assessment, Page 2)

  Summarily, although the NSW emissions values may be higher than the European Industrial Emissions Directive (IED) values, because they are monitored over a shorter timeframe (1 hour averages versus daily averages) this results in more emissions excursions and micro-exceedances being captured in the measurements than would be captured in a longer measurement timeframe. This makes it difficult to assess compliance across both the NSW EfW Policy and the IED BAT-C. Any data monitoring should also be conducted in a moving window (as opposed to a fixed window) to ensure better capture of exceedances.

- The EIS documentation demonstrates there are no plants in a similar regulatory environment that can be used for comparison. For example, this statement in regard to emissions measurement standards:

  "However, potential reference plants are not currently available that meet the requirements of the NSW EfW Policy as the requirements on energy recovery facilities and the Technical Requirements for emission standards, process monitoring and proof of performance testing for emissions to air are different from other regions; notably within this report against the EU Waste Incineration (WI) Best Available Techniques (BAT) Conclusions[7] published in November 2019, and the minimum requirements for waste incineration specified in Chapter IV of Directive 2010/75/EU on industrial emissions[8] (IED)." (Woodlawn ARC – BAT Assessment, page 17)

  In assessing compliance of the proposed facility to best available techniques, the BAT Assessment Appendix L(i) states:
  "Therefore, potential reference plants are not currently available to benchmark against all the requirements of the NSW EfW Policy as the requirements on energy recovery facilities are different in other regions; notably, the Technical Requirements for emissions standards." (Woodlawn ARC – BAT Assessment, page 69)

  The proposed facility also differs to the reference facility in terms of design and scale. The Staffordshire reference facility is a two line facility while the proposed Woodlawn facility is single line and considerably larger than the reference facility in scale.

  "Whilst the Staffordshire Energy Recovery Facility (ERF) in the UK (reference facility) is comparable in facility size (340,000tpa v 380,000tpa) and exhibits strong similarities to the proposed Woodlawn ARC in its selection of technologies that represent BAT, the scale of the proposed facility is considerably larger than that of the reference facility at around double the size based on a single line." (Woodlawn ARC – BAT Assessment, page 21)

  The document discusses combustion temperatures of either 850 degrees Celsius or 1100 degrees Celsius. It states that the proposed Woodlawn facility will be operated at 850 degrees Celsius, but then does not provide a temperature for operation at the Staffordshire reference facility, merely stating that the reference facility "achieves this requirement" (Table 6-6: Technical Criteria, Woodlawn ARC – BAT Assessment, page 25). In regard to the temperature, the waste feedstock sampling for the proposed facility also demonstrated the likelihood of waste feedstock comprising more than 1% of halogenated organic substances. There are no measures proposed in the EIS for combustion of this waste at 1100 degrees Celsius for 2 seconds as required in the NSW EfW policy.

  The proposal is thus unable to demonstrate compliance through"reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions" as required by the NSW EfW Policy Statement (Page 5).

SEARs requirements:

a quantitative human health risk assessment in accordance with the 'Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards' (enHealth, 2012), including:

- **an assessment of the inhalation of criteria pollutants and exposure (from all pathways, i.e. inhalation, ingestion and dermal) to specific air toxics, including impacts from the transport of waste material**
- **consideration of the impacts on drinking water sources and rainwater tanks, including the impacts on water quality and human health**
- **consideration of the potential health related impacts caused by the incineration of per- and polyfluoroalkyl substances (PFAS) which may be present within the proposed waste fuel, including an assessment of the potential for intake via drinking water and food consumption**
- **an assessment of cumulative human health risk impacts associated with the facility and surrounding developments, including any approved (but not yet constructed) developments and the proposed Jerrara Power Energy from Waste Facility (SSD-22879238).**

The Human Health Risk Assessment fails to provide conclusive evidence to demonstrate long-term safety to the environment and public health. Instead, it makes it clear that the air, water, soil, food and health of Tarago and surrounding areas will be impacted, and will be worse off as a result of the proposed incinerator. Claims of 'negligible' or 'no significant' impacts are based on assumptions and modelling which are not supported by real-life testing or sampling conducted in the Tarago area or at Staffordshire (the site of Veolia's UK Reference plant). The following are some of the issues of concern identified with the assessment of human health risk in the EIS:

- 3.4 Health and wellbeing – Poorer physical and mental health outcomes in the Southern NSW Local Health District (LHD) and South Eastern Primary Health Network (PHN) compared to trends across NSW suggest that a portion of the local and regional area population may be more vulnerable to potential health impacts as a result of the project, notably through air quality and mental health. (Appendix CC, Social Impact Assessment, page 20)

  The EIS highlights that the physical and mental health of people living within the Southern NSW Local Health District is poorer than that of populations across the rest of the state. As such, Veolia acknowledges that Tarago and the surrounding population may be more vulnerable to potential health impacts from the incinerator, such as those relating to air quality and mental health.

  It is particularly important to note that the population of Tarago and many other communities that surround the proposed incinerator rely solely on tank water. Any airborne contaminants flushed into residential water tanks from rooftop catchments will pose an additional and significant health risk to the health of these communities. Contamination of household water, particularly with Persistent Organic Pollutants (POPs) that are toxic at concentrations in the order of parts per billion (ppb, 10^{9}) and even parts per trillion (ppt, 10^{-12}), is likely to have a significant impact on the future health of residents. This impact will likely be magnified for those already experiencing poor health (a higher proportion than in wider NSW), anyone with chemical sensitivities, and children. POPs bioaccumulate in the fatty tissue of humans and animals and do not naturally break down. It is clear from the monitoring measures proposed (twice yearly sampling of dioxins and furans) and waste feedstock analysis (samples with greater than 1% of halogenated substances) that POPs emissions will be inadequately controlled in the proposed facility. It is also clear that particulate matter generated from APCr dust emissions will be substantial (in excess of 6000kg per year) which will add to the risks generated by stack emissions.

Residents of Tarago are already managing the impacts of rail line lead contamination of residential homes, household water tanks, and public spaces. Lead contamination in the town is yet to be remediated. The impact of an incinerator and the associated construction works will be a cumulative impact added to the health impacts already experienced from Veolia's existing operations and odour breaches, the unremediated lead contamination, and the significant number of other State Significant Developments and operations in the surrounding area. The EIS fails to properly address these cumulative impacts. Contaminated water will be a significant additional factor impacting upon the health of local residents. Who will be responsible for providing safe, clean water to all affected populations should water tanks become contaminated? What remediation measures are proposed? This is an issue of exceptional concern to the community and needs to be addressed.

Veolia's Woodlawn facility just outside Tarago has been impacting the community since it began operation almost 20 years ago. The odour issues that Veolia has been unable to resolve have caused a range of health problems for surrounding residents. These include nausea and vomiting, asthma, insomnia, headaches and migraine. These ongoing health issues, the inability to leave the house or open windows because of the smell, the constant need to report odour violations to the EPA, and the impact it has on quality of life in the community have a deteriorating effect on mental health. The EPA's advice on managing these issues has been to advise local populations to stay indoors (and children at the local school to stay indoors) when the odour is at its worst. Faced with the need to perform farming responsibilities outdoors throughout much of the day, this advice is useless to surrounding local communities.

In addition to this burden, over the past 18 months our communities have had the added anxiety and stress associated with the potential risk of harm the proposed incinerator presents, and its potential financial impact on farms, businesses and property values. These mental stressors are exacerbated by the lack of transparency demonstrated by Veolia in its interactions with the community, and the ongoing breaches issued by the NSW EPA for Veolia's failure to adhere to licence conditions. Ongoing licence breaches clearly demonstrate to the community that any proposed safety standards for the incinerator, no matter how stringent, are worthless. If the proposal proceeds, the mental health impacts will only be worsened. When people smell the odour from the bioreactor, they will also be worrying about what toxic pollutants from the incinerator they are breathing in, and how this is affecting their families, their water supply, their stock and their farms. These worries will be compounded because of the lack of transparency Veolia demonstrates in regard to notifying the community of environmental pollution and licence breaches, and the lack of transparency demonstrated by the NSW State Government in alerting the community to lead contamination in the town and the following delays with remediation work. Residents are of the justifiable opinion (based on previous learned experience), that should emissions exceedances or contamination occur, that residents will be the last ones notified and/or will not be notified. This increases the mental health burden associated with a facility such as the proposed incinerator that will be managing millions of tonnes of contaminated waste byproducts and hazardous materials.

- Mitigated, the significance of this potential social impact is assessed as Medium. As odour is an existing issue derived from the Woodlawn Eco Precinct and is unlikely to change due to this project. However, the air quality impact assessment has included a full assessment of odour to improve understanding and provide full transparency. With the adoption of the proposed mitigation measures, the magnitude of the potential impact can be reduced to minimal as there will be little noticeable change experienced as a result of the project. (Appendix CC, Social Impact Assessment, page 52)

  B.1.3 Air quality and odour Concerns regarding air quality relating to stack emissions and odour was frequently raised during the SIA field study. Odour has been an ongoing issue within the local area due to existing operations at the Woodlawn Eco Precinct. Odour was found to impact on the local area amenity, as well as incur some health impacts deriving from a lack of sleep and irritation of the throat. (Appendix CC, Social Impact Assessment, Appendix B, page B.3)

In November 2022 Veolia informed the local community (Tarago Times, November, page 15) that they have engaged a health hygienist at the site of the bioreactor to determine if the odor is impacting the health of onsite workers, stating in the CLC update: "Veolia also advised that we have engaged a Health Hygienist to carry out an assessment of potential health risks to the workers on site who work at the bioreactor every day. The information can be used to improve health and safety on site and can also indicate if there is any level of risk to the wider community." Whilst this is a positive development, the fact that a health hygienist is only now being engaged after almost 20 years of operation highlights the extent to which Veolia have ignored claims from the local community about the impact this is having on their health. The EIS demonstrates that complaints from the community noting health impacts have been ongoing, and that there is substantial research to demonstrate that landfill waste odour does impact upon physical and mental health.

As demonstrated above, the EIS mitigates the significance of odour from the Woodlawn ARC impacting the community through the reasoning that there will be 'little noticeable change' experienced as a result of the proposal. However, under the terms of Veolia's licence conditions, there should already be no odour impacts on surrounding residents. Veolia's licence condition (consents) clearly state "113. There shall be no offensive odour emitted from the premises, in accordance with Section 129 of the Protection of the Environment Act 1997, nor emissions to the atmosphere from the landfill that may adversely affect the health or amenity of the community. (EPA GTA)". For the purposes of assessing the likely impact of the proposed facility, the odour impact of the ARC also needs to be quantified. Should Veolia manage to resolve the odour issues with the bioreactor, what would then be the odour impact of the ARC and the containers sitting in the holding area? Is the additional proposal likely to result in the odour becoming more noticeable for residents further away from the facility? What possibility is there for changes in the type of noticeable odour? For example, will the facility emissions add a chemical/burnt plastic/smoke taint or smell to the existing odour issues? How would this be likely to affect residents already worried about the safety of the facility?

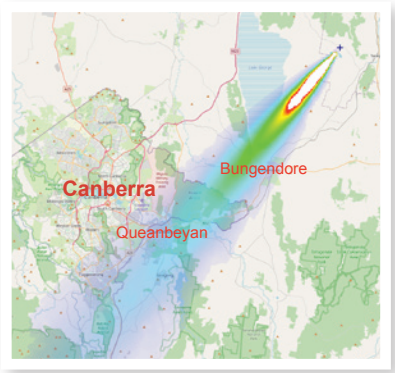
There are also issues relating to the manner in which the odour assessment was conducted in the Air Quality Impact Statement, namely that the AQIA adopts an odour assessment criteria of 6ou to align with current annual odour audits. The latest odour audits have been rejected by the EPA as not satisfactory and there have been a significant number of complaints in the last few years. At the end of the section it is stated an odour goal of 2ou is also considered and based on Tarago population 3 ou would be the maximum. Considering that the original licence to operate indicated that no odour should be emitted from site it would be pertinent that only a 2ou odour goal would be acceptable.

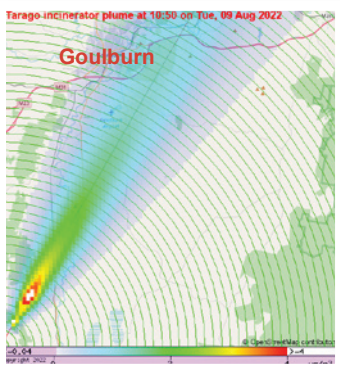
The above points demonstrate that impact of odour and potential physical and mental health impacts have not been sufficiently addressed in the EIS.

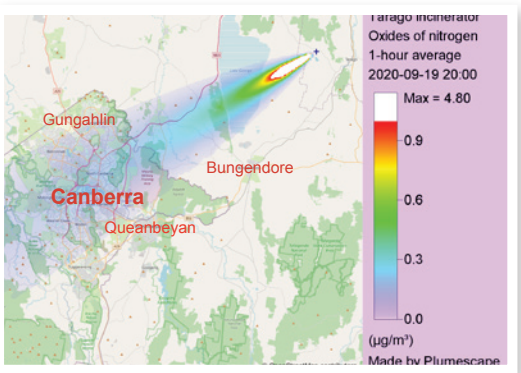
- If health impacts were to occur due to stack emissions and air quality, the magnitude of these are anticipated to be moderate due to only affecting a small group of people. (Appendix CC, Social Impact Assessment, page 53)

As representatives of the surrounding communities likely to be most affected by the proposed incinerator, CATTI considers this statement both offensive and damning. Throughout the EIS Veolia have downplayed the impact this proposal is likely to have on nearby population centres by intermixing the use of road and direct path distances. This statement indicates Veolia are now justifying any potential health impacts of their proposal on the basis that these will only affect a small group of people. Since when does a proponent have the right to determine that residents in smaller population centres are less entitled to healthy outcomes and protection from industrial pollutants? Why is it considered acceptable that this 'small' group of people, already acknowledged to be experiencing poorer health outcomes than the rest of the NSW population and already impacted by Veolia's local operations, should be considered expendable rather than in need of additional protections? Why is the healthy future of the children of Tarago not equally important as children living in more densely populated areas?

We also dispute that the group of people likely to be affected by Veolia's proposed facility will be 'small'. Odour reports for the bioreactor come from more than a 30km radius around the Woodlawn site. This is not a 'small' group of people. The incinerator, with its distribution of pollutants, is also predicted to impact a wide radius around the proposed site. For example, plume modelling has been conducted using local weather data from Goulburn airport (operated by the Bureau of Meterology and one of the weather stations used by Veolia in their EIS reporting) and AERMOD. AERMOD was developed by the US EPA.







It is a steady-state plume model able to incorporate air dispersion based on a range of factors, including planetary boundary layer turbulence structure and scaling concepts. It allows for incorporation of both surface and elevated sources and a range of terrain (simple and complex). Air pollution plumes mapped using AERMOD indicate pollutants will impact major population centres surrounding the facility, including Canberra and Goulburn.

- *B.1.3 Asthma prevalence within the regional area and Southern NSW LHD has varied between 2002–2019. However, in 2019 rates of asthma for those 16 years and older were significantly higher in the regional area (21.1%) compared to NSW (11.5%). Multiple stakeholders were concerned about stack emissions, and how they will impact on the air quality and human health.* (Appendix CC, Social Impact Assessment, Appendix B, page B.3)

The EIS identifies the already high prevalence of respiratory problems in the region. Asthma prevalence is already almost double the NSW state average. Incinerators were moved out of the Sydney basin because of the risk they pose to human health (predominantly because of the air pollution they create). There are clearly already pollution issues in the wider Tarago region that are causing significantly higher levels of respiratory illness. These health problems are likely to be compounded in a rural environment where access to health facilities is reduced. For example, there is no ambulance service in Tarago, and the nearest doctor's office is more than 30km away. It is morally and ethically wrong to knowingly add a significant air pollution contributor and NSW government-acknowledged threat to respiratory health to the air pollution impacts of communities already suffering double the rate of respiratory illness to others in NSW. "The right to breathe clean air is one of the components of the right to a healthy environment."1 This proposal would constitute a violation of the human rights of the people of Tarago and the surrounding region.

Reference:

1. UN Environment Programme (https://www.unep.org/news-and-stories/video/human-rights-and-clean-air)

- *Table 4.16 Review of maximum predicted surface soil concentrations against background and low-density residential and recreational soil guidelines Note A - data for dioxin-like compounds relevant to urban soil in Sydney. It is noted that the range for all Australian soils collected for the National Dioxins Program in 2004 was 0.05 pg TEQ/g to 23 pg TEQ /g dw (i.e. 5x10-8 to 2.3x10-5 mg/kg). The concentrations in urban soils in Sydney ranged from 4.4 to 10.8 pg TEQ/g (for dioxins, furans and DL-PCBs). These values are equivalent to the range 4.4x10-6 to 1.1x10-5 mg TEQ/kg dw. (DEH 2004)"* (Appendix P, Human Health Risk Assessment, page 63)

The background level for dioxin and furans included in the table is for Sydney. The Tarago area is distant from Sydney and located in an agricultural area. Why were Sydney background levels used instead of rural background levels or levels from the local Tarago area? Have there been any measurements done on soils in the area to determine current levels for use in this study? If the current levels are very low, then the significance of the predicted numbers will increase. Existing levels in agricultural soil in the local area should also be established given that dioxins accumulate in soil and bioaccumulate in livestock, crops and vegetation.

SEARs requirements:

- **details and a description of the sources, classes, quantities and composition of waste streams that would be thermally treated at the facility**
- **a waste availability analysis that includes details of waste supply arrangements in the short and long term and an assessment of any competition for waste feedstock**
- **detailed comparison of the proposed plant design, treatment technology and waste feedstock with the selected reference facility(ies)**
- **details of the processing capacity of the facility including typical, maximum and minimum rates of processing, the maximum annual throughput of waste and the maximum volume of waste to be stored at the premises at any one time**
- **demonstration that waste used as a feedstock in the facility would be the residual from a resource recovery process that maximises the recovery of material in accordance with the NSW Energy from Waste Policy Statement (EPA, 2021)**
- **a detailed waste input sampling and monitoring program including a detailed description of waste processing procedures for each waste type received, how inappropriate materials will be excluded from the waste stream and contingency measures that would be implemented if inappropriate materials are identified.**

Analysis of the waste feedstock for the proposed Woodlawn ARC fails to demonstrate compliance with the SEARs requirements for the following reasons:

1. proposed waste feedstock waste is not residual from a resource recovery process that maximises the recovery of material in accordance with the NSW Energy from Waste Policy Statement (EPA, 2021);
2. the analysis used to establish the details and a description of the classes, quantities and composition of waste streams to be thermally treated at the facility is insufficient to establish the waste stream suitability; and
3. failure to establish an appropriate reference facility.

1. Proposed waste feedstock is not residual from a resource recovery process that maximises the recovery of material in accordance with the NSW Energy from Waste Policy Statement (EPA, 2021)

- There are broad and unevidenced assumptions made about the eligibility of the feedstock for incineration.

> Figure 3 shows that even if all proposed EfW facilities that are in the planning system are approved and developed, there is still headroom for this project. It compares facilities that are competing for similar putrescible feedstock in the Sydney Basin, being kerbside collected MSW (assumed to be 100% putrescible) and C&I waste (assumed to be 60% putrescible). All MSW is considered eligible for provision to EfW under the NSW EfW Policy Statement given the mandatory transition to source separated collection of food organics, while 60% (2020) - 80% (2030) of C&I is considered eligible with the balance partially eligible. Arcadis considers the approval of all pipeline facilities to be unlikely given the recently released *NSW EfW Infrastructure Plan* does not permit the development of the proposed EfW facilities within Greater Sydney, in their current form. (Waste Feedstock Analysis, page 2).
> All metropolitan Councils currently offer a commingled recycling service and, under the recently released *NSW Waste and Sustainable Materials Strategy 2041*[9], are required to transition by 2030 to collection of food organics in a discrete service or as part of a combined food organics and garden organics (FOGO) service. This means all residual kerbside MSW in Greater Sydney will be fully source separated by 2030 and meet the 'no limit' criteria for EfW. (Waste Feedstock Analysis, page 11)

The conclusions drawn in these paragraphs (and applied to the entire waste feedstock analysis) are based on the flawed assumption that waste separated at household level will be done in accordance with the waste hierarchy. However, the data presented in the analysis contradicts this assumption. For example:

"Council 1 has a voluntary FOGO collection, whereas council 2 does not. No significant variance was found in the organics proportions between the two councils." (Waste Feedstock Analysis, *Appendix A, Page 47*)

This is a clear demonstration that household sorting is not occurring in accordance with the waste hierarchy. FOGO (Food Organics Garden Organics) material is not being removed from the Municipal Solid Waste (MSW), so the assumption that residual kerbside MSW in Greater Sydney will be fully source separated by 2030 and meet the 'no limit' EfW criteria is dubious. With or without requirements for household source separation, MSW is still likely to contain significant amounts of organics and other waste that should have been removed (as the above example demonstrates). As seen above, in actual fact there may not be any significant change in MSW composition to enhance its suitability for EfW incineration.

Additionally, MSW bins generally contain waste within opaque bags and people are notorious for placing a wide variety of material within (for example, the PVC boat found in the chlorinated waste sample analysis). The bags will not be opened at sorting, so in order to maintain the integrity of the waste stream and ensure recyclable and reusable waste has been removed and suitable waste is incinerated, the waste would need to be verified for applicability. It is inappropriate to rely on the waste-sorting ability of one subset of the population when the ramifications for inappropriate sorting will fall completely on another. Waste streams from every council would need to be independently audited on a regular basis to verify their suitability for incineration.

The assumptions made in the analysis are not substantiated in a way that demonstrates waste feedstock for incineration will be residual from a resource recovery process that maximises the recovery of material in accordance with the NSW Energy from Waste Policy Statement (i.e. in accordance with the waste hierarchy).

- **4.2.1 80% average recovery from all waste streams by 2030**

  "Given the waste generation split in NSW is 60% C&D waste, 20% MSW and 20% C&I waste, progress on C&D recovery has a threefold impact on the net target compared to each of MSW and C&I waste, providing a greater weighting on C&D waste recovery in achieving the Strategy's overall recovery target. However, if the 15 percentage point net improvement requirement is applied equally to each of the three streams, MSW and C&I waste recovery would increase to 58% and 68% respectively, which is less than the previous WARR Strategy targets of 70% for each. The MSW recycling rate in the Metropolitan Levy Area in the base year of this assessment was slightly lower than the rest of NSW at 41% (WARRP Progress Update 2017/2018). The 15 percentage point improvement target is applied to that rate, and therefore increased over the 10-year period to 56%." (Waste Feedstock Analysis, *Appendix A, Page 30*)

  The values presented here in regard to MLA (Metropolitan Levy Area) waste provide further evidence as to the inappropriate reliance on household waste separation in the Sydney Metropolitan Area to provide a waste feedstock consistent with the requirements of the NSW EfW Policy. This data indicates that Sydney Metropolitan Area household waste recovery is 2% lower than the remainder of the State, and that current recovery rates are far below strategic recovery targets. This casts doubt on the assumptions made in the analysis that requirements for source separation will result in feedstock consistent with the requirements.

- *Waste hierarchy - "The proposed approach aligns with the waste hierarchy. MSW residual waste sourced from the kerbside collections of FOGO Councils (80% of total feedstock) has been subject to source separation of dry recyclables and the key organics fraction, facilitating recycling of these materials at their highest order use."* (Waste Feedstock Analysis, *Appendix A, Page 13)*

  The waste analysis conducted identified that 15% of the MSW streams consisted of plastic. How does this demonstrate that source separation of dry recyclables has been implemented in accordance with the waste hierarchy? Does this indicate a stricter auditing structure is required in order to ensure source separation is occurring in accordance with the policy?

- **3.1.3 Feedstock Compliance**

  Currently, all metropolitan Sydney councils offer a commingled recycling service. In addition, they will be required by the NSW Waste and Sustainable Materials Strategy 2041 to transition to offer FOGO collection services by 2030. The eventual outcome being that all residual MSW in Greater Sydney will be fully source separated by 2030.
  Therefore, the proposed feedstock for the Woodlawn ARC will comply with the NSW EfW Policy, with a progressive increase from 25% (in 2022) to 100% (in 2030) of the residual waste allowed for energy recovery. (Waste Acceptance, Appendix G, Page 9).

  Again, the conclusion that the proposed feedstock will be compliant based on the assumption that source separated council MSW will be 100% applicable to EfW from 2030 is concerning. The EIS data presents a clear picture of the inadequacies of source separated MSW. MSW from each Council would need to be fully audited on a regular basis to ensure compliance with EfW feedstock suitability requirements.

- **4.2.2 Tripling the recycling rate for plastic**

  The *NSW Waste and Sustainable Materials Strategy 2041* included an intention to "set a goal to triple the plastics recycling rate by 2030, as set out in the NSW Plastics Action Plan".
  The current plastics recycling rate from MSW, C&I and C&D waste (excluding RDF) is approximately 11% (87,000 tonnes)11, with an appetite to triple it to 33% by 2030. Total recyclable plastic (including estimates of what goes to landfill) is forecast under BAU to reach 926,000 tonnes in 2030 (inclusive of C&D waste), with recycling required to increase to 290,000 tonnes to meet the target rate. This is a significant increase in terms of plastic recycling, but not a large number in terms of overall waste disposal. For the purposes of modelling, it was assumed that recycling efforts were split evenly between the three streams." (Waste Feedstock Analysis, *Appendix A, Page 13*)

  These figures demonstrate that not enough plastic is being removed from the waste stream and that the government aims to triple the amount of plastics removed by 2030. The EfW Policy Statement notes:

  > "The EPA considers energy recovery to be a complementary waste management option for the residual waste produced from material recovery processes or source-separated collection systems. This policy statement's objectives in setting resource recovery criteria are to:
  >
  > - promote the source separation of waste where technically and economically achievable
  > - drive the use of best practice material recovery processes
  > - ensure only the residual from genuine resource recovery operations are eligible for use as a feedstock for an energy recovery facility."
  >
  > (NSW Energy from Waste Policy Statement, page 8)

The data presented demonstrates there is inadequate support for the use of EfW under the policy. The policy describes that EfW should occur as a lower step in the waste hierarchy than recycling, and that resource recovery objectives are to promote the source separation of waste where achievable. It is evident that the government believes recovery of triple the amount of plastics is achievable by 2030, and that other measures to recover this waste are feasible. An EfW facility will thus be burning a large portion of recoverable plastics. Additionally, the significant change in waste stream as additional recovery measures are implemented will change both the composition and calorific value of the waste feedstock. How have these feedstock changes been accounted for in the data analysis? How is burning of substantial quantities of recoverable plastics in alignment with the aims of the waste hierarchy and EfW policy?

- **5.1 Overview**

  The first and second stages of feedstock quality control occurs at the Clyde and Banksmeadow WTTs. The processing of waste at the WTTs is outlined in detail in the WDP.

  The following process performed at each WTT will ensure that only conforming residual MSW and C&I waste is allocated as feedstock for the Woodlawn ARC:
-
  - The mass of waste received from each council and C&I source is weighed and recorded, and an appropriate percentage, based on the respective council' level of source separation (refer to Table 3-1), is allocated to be treated by the Woodlawn ARC
  - The WTTs demonstrate genuine resource recovery and only residual MSW and C&I waste is designated as feedstock for the Woodlawn ARC
  - Non-conforming waste is removed from the Woodlawn ARC waste stream
  - Preparation of waste, containerisation and rail transport

  (Waste Acceptance, Appendix G, Page 13)

  There is no mention of how often an audit should be conducted to ensure feedstock compliance. The auditing process for waste at the ARC also makes no mention of how often an audit should be conducted to ensure feedstock compliance.

The process overview also allows for the problematic assumption that all MSW waste will be acceptable from 2030. No detail is provided about the separation methods proposed for use with the Front End Loader (FEL). As a considerable amount of MSW will arrive in bags and will likely not be visible to the FEL driver, how will it be possible to identify and remove waste to the levels required to assure waste feedstock suitability?

There is no information about how frequently audits (both at the transfer terminals and at the ARC) should be conducted to ensure waste feedstock compliance.

- It is unclear how the containers of waste for the Incinerator will be differentiated from the Bioreactor containers. If this is reliant on the truck drivers then it could still be possible to bypass the controls and place a container in the incorrect area.
  Most of the mitigation controls for controlling the selection, sorting, packing, delivery and identification of non-conforming waste are manual and rely on a human without prompt from a sensor. This fails to provide the appropriate level of assurance about operational feedstock compliance.

2. The analysis used to establish the details and a description of the classes, quantities and composition of waste streams to be thermally treated at the facility is insufficient to establish the waste stream suitability

- There are broad and unevidenced assumptions made about the eligibility of the feedstock for incineration (refer above item in regard to waste feedstock eligibility). These assumptions appear inappropriate for making accurate conclusions about waste feedstock eligibility.

- This report represents Arcadis's independent view of current and future waste volumes and market issues in Greater Sydney, based on the data available to us at the time. The data sources, assumptions and scenarios have been discussed with Veolia but have been sourced and modelled by Arcadis. The sources of information used by Arcadis are outlined in this document and in the accompanying Excel spreadsheet. Arcadis has made no independent verification of this information beyond the agreed scope of works and Arcadis assumes no responsibility for any inaccuracies or omissions. (Waste Feedstock Analysis, *Appendix A, Page 47*)

Arcdis does not provide a confidence factor for modelling. If Arcadis are experts in the field and have been engaged to provide an independent analysis, then they should also provide a confidence factor for the data used in the analysis. What is the confidence factor of data used to generate the assumptions and conclusions reached in the report? How confident are Acadis in the accuracy of the data used? Can this data be used to generate statistically significant conclusions? The following paragraphs note they assume that "information is reliable, accurate, complete and adequate". Without a confidence factor to apply to the data for interpretation of the accuracy/reliability/statistical significance of the conclusions reached, the conclusions are unsupported.

- Figure 1: Residual waste generation base case estimates with and without mandatory policies in the Waste and Sustainable Materials Strategy 2041 (Waste Feedstock *Analysis, page 2*)

This figure shows a considerable rise in Commercial and Industrial (C&I) residual waste expected from 2030. Why is this the case? C&I waste should be relatively controllable through management of excess and by using commercial control systems. Waste inputs are also highly controllable and design systems can manage inputs to control waste output.

- For a document that is purportedly a scientific analysis of the waste feedstock, there are several sections that read like a promotional document. For example:
  "Veolia is proposing to increase recovery of this residual waste by diverting it from the landfill to an energy recovery facility. This would support their customers in achieving resource recovery targets and extend the life of an essential landfill asset serving Greater Sydney, offering increased capacity and resilience within the NSW waste management network." (Waste Feedstock Analysis, page 4)

- Data Context - "Data between 2012/2013 and 2016/2017 is by increments of two years as per the previous reporting cycles of the Waste Avoidance and Resource Recovery Strategy Progress Report. This has now been replaced with annual reporting cycles, but the most recent release of data was for 2017/2018." (Waste Feedstock Analysis, page 18)
  "Kerbside collections data in the MLA was also analysed between 2016/2017 and 2019/2020 and showed a negative trend of -2.8% (Local Government Waste and Resource Recovery Data Reports)." (Waste Feedstock Analysis, page 19)

The information on page 18 indicates reporting was two-yearly from 2012/2013 to 2016/2017 followed by annual reporting after that. Why is the most recent release of data 2017/2018? What attempts were made to obtain more recent data?

On page 19 the report indicates kerbside collection data was analysed between 2016/2017 and 2019/2020. Is this from the same reporting mechanism as the information on page 18? Why is more recent information available for kerbside collections? This information does not appear to have been included in the graphs of residual waste trends.

- Waste Audit Methodology (**Appendix A**, Waste Feedstock Analysis)
  There are several issues relating to the waste audit methodology that are not addressed in the report:

  1. It is unclear how the sample sizes for the analysis were determined, and what the statistical significance of the sample sizes is.

  2. In campaign 2, it notes that only 100kg of the sieved samples were sorted. How was it determined which portion of the sieved section was sorted and why?

  3. The analysed waste does not represent a statistically significant proportion of Veolia's waste intake. Total waste deliveries to Veolia are stated as approximately 800,000 tonnes per year (*"Veolia currently receives 800,000 tonnes of the ARC's target waste streams"*, Waste Feedstock Analysis, page 11). When the samples are calculated as a percentage of the total waste delivery to Veolia, then the total sample assessed was 460 tonnes (both campaign totals) or 0.06% of the Veolia throughput at the transfer locations. If the sorted and sampled weights (total of 6771kg) are calculated as a percentage of the total waste delivery, then the sample percentage is 0.000085%. How does this analysis provide the statistical significance to demonstrate the classes, quantities and composition of waste streams are suitable for thermal treatment at the proposed facility?

- 6.3 Waste Bunker (Waste Delivery Plan, Appendix G, page 17)

  This section states that non-conforming waste tipped into the bunker will be removed and "Waste not suitable for the Bioreactor Landfill will be directed for further processing at another suitably licenced facility." Is this covered in the feedstock plan and transport plan? What percentage of the feedstock is likely to be unsuitable?

3. Failure to establish an appropriate reference facility

The NSW EfW Policy Statement states:

"Energy recovery facilities must use technologies that are proven, well understood and capable of handling the expected variability and type of waste feedstock. This must be demonstrated through reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions." (NSW Energy from Waste Policy Statement, page 5)

The below points reference Veolia's failure to demonstrate this requirement in regard to waste feedstock.

- *Whilst Veolia's operations in Europe and the UK are not subject to the same regulatory requirements as the Facility, they are not directly comparable to the Facility. However, the facilities which Veolia operates in the UK are considered to be 'similar' to the Woodlawn ARC, as the UK utilizes a similar regulatory framework to that being applied in NSW by the NSW EPA and are operated in an English speaking country meaning that all relevant operational records are written in English. (Woodlawn ARC Reference Facility, Appendix L(ii), page 6).*

  This demonstrates there are elements of concern when using UK plants to assess alignment with the NSW regulatory requirements. This is compounded by the failure to provide a comparison with a facility running a system that fully aligns with the proposed facility. For example, *"Table 2: Comparison of main parameters of the Reference Facility with the comparable facility and the proposed facility"* (Woodlawn ARC Reference

Facility, Appendix L(ii), page 7) states that the reference facility utilises 2 lines and uses a “Dry” de-acidification process. This is not aligned to the proposed facility. Whereas the facility labelled “comparable” actually uses a single line and a “Semi-dry” de-acidificaiton process (the same as proposed for Woodlawn) and all other elements align with the proposed facility. Why was Staffordshire chosen over Greatmoor? This is not detailed in the report.

- 3.1 Staffordshire Energy Recovery Facility - The Staffordshire ERF is a twin-line facility that is permitted to process up to 340,000 tonnes per annum of waste with an assumed availability of 8,000 hours per annum. *(Woodlawn ARC Reference Facility, Appendix L(ii), page 8).*

  This statement suggests the operational time was not available (or was not made available) for the reference facility. Availability should be a part of data maintained for any operational facility. Was the consultant supplied with the appropriate data to conduct the comparison? The same statement is made in regard to availability at Greatmoor. What is the actual availability of the Staffordshire plant for each year of operation?

- The combustion technology and the flue gas treatment technologies used in the Reference Facility and the comparable facility are used in most of the ERF facilities throughout Europe and the UK. As detailed within the Woodlawn ARC – BAT Assessment, the Woodlawn ARC will also use these technologies. *(Woodlawn ARC Reference Facility, page 5).*

  Why has the author of the assessment referenced the BAT Assessment rather than design documentation? Was the report’s author provided with the Woodlawn ARC design documentation for the purposes of assessment?

- **3.1.2.3 Emissions Monitoring and Performance**
  As the reference periods for the monitoring data for the Staffordshire ERF are different to the emission limit values stated in NSW EfW Policy, Veolia has obtained the monitoring data from the Staffordshire ERF CEMS system for 2017. (*Woodlawn ARC Reference Facility, Appendix L(ii), page 9*).

  It is not clear what relationship there is between the reference periods, the NSW regulatory differences and the year of data selected. No detailed reason has been stated as to why the data for 2017 was selected as appropriate to analyse instead of any other year or averaged data. Why would a single operating year be selected? This anomaly is emphasised by the explanation that two years of performance data were analysed for the Greatmoor plant (2018/2019 - *Woodlawn ARC Reference Facility, Appendix L(ii), page 13)*. Again, no explanation is provided as to why those years were selected.

- **Section 4.2.1 - Capacity**
  “Whilst there are 222 waste processing lines in Europe which predominantly process MSW for which data was provided to the European Integrated Pollution Prevention Control Bureau (IPPCB), this includes facilities utilizing a range of different combustion and abatement technologies, with each facility being designed to process the quantities and types of waste which are required. The 222 lines includes single stream plants which process from 3 tph up to 50 tph. Of those facilities which are a ‘similar’ capacity to the Woodlawn ARC, there are 24 waste processing lines which are reported as having a thermal processing capacity of between 30 and 45 tonnes of waste per hour; and an additional 23 lines which thermally process between 300,000 and 421,000 tonnes of waste per annum.” *(Woodlawn ARC Reference Facility, Appendix L(ii), page 15).*

  The two different methods of presentation make interpreting this data confusing. The 24 lines processing between 30 and 45 tonnes of waste per hour would be processing 240,000 to 360,000 tonnes of waste per year (based on the 8000 hours of operation proposed for Woodlawn). Does this mean there are actually 47 lines that compare? Or are there differences in operation to explain why these lines have been split into separate groups?

- There are attempts made to quantify the choice of reference facility but there is no statement in the conclusion of the report indicating that the Staffordshire facility is considered to be representative of the proposed Woodlawn facility which is a requirement of the NSW EfW Policy.

4. Other Items:

- (Appendix G, Woodlawn ARC Waste Delivery Plan, page 4) states that the incinerator bunker tipping requirement is for 1.5 containers per hour, but that the bunker will be operated so that it holds several days’ supply of waste. Information in the delivery plan (Appendix G, Woodlawn ARC Waste Delivery Plan, page 6) indicates the rate of tipping into the bunker is approximately 10 containers per hour from 2 tipping platforms. This far exceeds the incinerator planned capacity. Why?

Sears requirements:

A waste management assessment, including:

- **a list and description, including quantities, composition and classification, of waste material produced (solid, liquid and gaseous) from the facility, including incinerator bottom ash, air pollution control residues and filtrate from the demineralising plant**
- **describe how waste produced at the site would be treated, stored, used, disposed and handled on site, and transported to and from the site, and the potential impacts associated with these activities, including leaching potential and proposed offsite waste disposal methods**
- **demonstration that any waste material produced from the facility for land application or use in the construction industry is fit-for-purpose and poses minimal risk of harm to the environment in order to meet the requirements for consideration of a resource recovery exemption by the EPA**
- **identify the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Material Strategy 2041 and the NSW Plastics Action Plan (EPA, 2021)**
- **detailed description of any proposed immobilisation process for the flue gas residues, which immobilisation approval intended to be used (general or specific) and how the process will comply with the Protection of the Environment Operations (Waste) Regulation**
- **a detailed encapsulation cell design that demonstrates the contaminants can be adequately managed**
- **details on the location and size of stockpiles of any waste at the site.**

The waste management plans presented in the Woodlawn ARC Environmental Impact Statement (EIS) do not meet the requirements of the SEARs. Concerns are noted below. Due to time constraints associated with reviewing the lengthy EIS within the public exhibition timeframe, these are presented in no specific order.

- Unable to locate a comprehensive list of the compositional components of the bottom ash and APCr in the EIS documentation. Staffordshire reference facility information presents some information, but this does not appear to be a comprehensive analysis. This is a requirement of the SEARs. The air quality impact assessment provides data on the compositional make-up of PM2.5 particulate matter in APCr, which indicates this data is available. At a minimum, there should be comprehensive data from the reference facility detailing the full list of components, chemicals and their respective ratios in both the IBA and APCr.

- "Other stabilisation reagents may also be explored as the project develops and as specific waste characterisation data becomes available (as other reagents may be deemed more effective)." (Appendix E, Ash Management Study, page 26)

  The Ash Management Study fails to provide a detailed description of the immobilisation process for flue gas residue as required in the SEARs. Instead, it presents two options for stabilisation (cement mixing and phosphate injection) and proposes that stabilisation details will be determined at a future date once residue has been produced and is available for testing. The report also notes that the stabilisation process may vary once testing has been done, and neither of these techniques may be the eventual stabilisation method used. The report provides no detail on what byproducts are of most concern, nor the different stabilisation methods most relevant to each. There is no comparison made between the effectiveness of stabilisation methods for heavy metals vs stabilisation of POPs and chemical byproducts. No details are provided as to the quantities and specific types of additives/components needed to stabilise the material using the proposed methods. The two stabilisation processes proposed are described only in terms of a broad overview of the processes required, and the information is insufficient to meet SEARs requirement to describe how *"waste produced at the site would be treated, stored, used, disposed and handled on site"* .

- "The Waste Hierarchy clearly identifies that recovery including via Waste to Energy is a preferred and higher-level performer than traditional waste disposal to landfill. " (Appendix E, Ash Management Study, Page 3)

  Legislative justification for the facility under the 2018 National Waste Policy relies on comparison of the incinerator with *"traditional waste disposal to landfill"*, rather than the waste-to-energy bioreactor landfill with methane capture already available onsite.
  The report also cites the Waste Hierarchy diagram which places "recycle waste" above 'waste recovery', but then fails to note the discrepancy between this policy priority and data indicating that "organics, paper/ cardboard and plastics" make up the bulk (greater than 66%) of feedstock for each of the plants compared (Woodlawn, Staffordshire and Vancouver) (Appendix E, Ash Management Study, Page 9) .

- The NSW Energy from Waste Policy Statement 2021 states *"any energy recovery proposals represent the most efficient use of the resource and the risks of harm to human health or the environment are adequately managed "* (page 1). The Woodlawn ARC EIS report fails to adequately describe any of the potential health risks associated with the reuse of IBA and the storage of bottom ash, nor how these risks can be adequately mitigated given emerging research of the contamination resulting in Europe from these procedures. (The hidden impacts of incineration residues, Case Study, November 2019, ToxicoWatch)

1. The document examines leachability of contaminants and heavy metals, but there is no information on the treatment and management of Persistent Organic Pollutants (POPs) and other contaminants such as polyfluoroalkyl substances (PFAS), microplastics, brominated flame retardants (BFRs) including polybrominated diphenlethers (PBDEs) and PBDD/Fs, and dioxins (such as polychlorinated dibenzo-p-dioxins/dibenzofurans (PCDD/Fs), all of which are identified as concerns in research into incinerator waste ash in Europe.[1]

   Reference:
   1. Toxic Fallout - Waste Incinerator Bottom Ash in a Circular Economy, Research Report - January 2022, Global Alliance for Incinerator Alternatives & Zero Waste Europe.

- "However, the composition of waste by-products resulting from any plant is site and feedstock specific. A risk relating to by-product composition, treatment requirements and potential future beneficial reuse viability will therefore exist until a data set of actual waste by-product chemical composition can be established and assessed (i.e. during the commissioning phase of the project)." (Appendix E, Ash Management Study, page 10)

  The report provides no information on how waste will be managed should IBA be deemed too hazardous for landfilling, and should it be deemed that hazardous APCr waste is unsuitable for onsite containment. This is a very important consideration for two main reasons:

  1. Because the report identifies the financial risks for EfW incinerators that are associated with moves to a circular economy, stating *"by-product waste streams can form a reasonable percentage of the input waste and in some instances can contain concentrated levels of contamination. By-product ash therefore requires careful consideration in order that residual waste management costs do not jeopardize the beneficial EfW process."* (Appendix E, Ash Management Study, Page 6) Should by-product waste not be classified as the document proposes, the cost (both financial and in environmental risk) of transporting it to a hazardous waste facility will likely be prohibitive.

  2. Because the report identifies that it is impossible to classify the byproduct waste ash in advance of production, nor identify the best method of stabilisation pre-production. Therefore, it is impossible to establish that any of the proposed methods of stabilisation will be appropriate. Given the $600 million investment in the facility, waste classification post-construction creates a very real risk that decision-makers will be swayed by the economic cost already incurred for the facility, and that environmental and health considerations for the proper storage and management of this hazardous waste will be considered as a secondary concern in the decision-making process. The report fails to explain what management measures are proposed if IBA and APCr fail to meet the disposal criteria for RSW and restricted landfill.

- The report fails to demonstrate the safety of the proposals raised for reuse of IBA and APCr. Despite stating that "proactive beneficial re-use of by-products should be considered at the planning phase of any new EfW project, given the numerous successful examples of this overseas and the likely positive market for such products in Australia"(Appendix E, Ash Management Study, page 6), the report then goes on to state that any potential for reuse of IBA is dependent on a considerable number of other conditions and Veolia's investigations into its potential for reuse (Appendix E, Ash Management Study, page 6). This provides no certainty as to how this waste will be managed, nor does it meet the SEARs criteria to demonstrate waste will be fit for reuse. The EIS should also demonstrate what the management plans are should IBA not be considered suitable for disposal as GSW.

- The document makes no mention of the risks nor mitigators for the production and ongoing storage of contaminated byproduct ash within the Sydney Water Catchment area.

- The NSW EPA Energy from Waste Policy Statement (2021) states "*Energy recovery facilities must use technologies that are proven, well understood and capable of handling the expected variability and type of waste feedstock"* (page 5). This must be demonstrated through reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions." The report fails to provide reference to the treatment of "like waste streams in other similar jurisdictions" because:

    a) it fails to provide information from a facility operating in the extremes of the Australian environment at the altitude of the current facility;

    b) it fails to provide reference facility data for a period corresponding to the air quality data;

    c) it acknowledges that treatment of APCr is not yet established in Australia and "is limited to less-hazardous fly ash from coal fired power stations" (Appendix E, Ash Management Study, page 18).

    d) Despite the international reference facilities noted (five UK facilities, one Canadian facility, and five French facilities), the report notes a considerable number of differences that demonstrate the data and the facilities are not comparable:

        - UK plants manage boiler ash differently to the proposed Woodlawn facility (Appendix E, Ash Management Study, page 7);

        - European standards for waste classification leachability testing are significantly different to standards used in Australia (Appendix E, Ash Management Study, page 7);

        - A smaller data set was provided for the French plants than the other facilities (Appendix E, Ash Management Study, page 7);

        - Leachability data for *"mixed boiler ash/APCr material"* at the Canadian facility is from post-treatment analysis of the waste;

        - Waste composition data (Appendix E, Ash Management Study, Table 3.1, page 9) demonstrates considerable differences (e.g. a difference in organics of up to 15%, paper/cardboard up to 10%, and nappies/hygiene up to 11%) in waste composition to the predicted composition of waste for Woodlawn. The report describes the waste compositions as "broadly consistent" (Appendix E, Ash Management Study, page 9) and "generally consistent" (Appendix E, Ash Management Study, page 10), which is insufficient to meet the EFW policy requirements for a comparison with "like waste streams";

        - Staffordshire waste compositional data is for a three-month period, and thus does not correspond to the 2017 full-year data used to calculate air emissions. Staffordshire reference facility information also fails to provide a breakdown of MSW and C&I waste;

        - The report's authors only consider the data appropriate for "preliminary analysis" (Appendix E, Ash Management Study, page 9). The Environmental Impact Study should contain sufficient data to enable a full and proper analysis of the proposal's potential impacts on nearby residents, the surrounding environment, water supplies and agricultural production.

Listing the most significant contaminants by quantity does not provide an assessment of the risks of contaminants that may be more hazardous in smaller quantities than those present at higher quantities in the waste ash (for example, Persistent Organic Pollutants (POPs) that are toxic in the order of parts per trillion;

- IBA compositional analysis describes the assessment of Upper Confidence Levels (UCLs) for the reference plants but fails to provide a full compositional make-up of the ash and a list of the full range of metals/compounds/chemicals considered in the analysis;

- Solid contaminant data was unavailable for the French plants (Appendix E, Ash Management Study, page 13);

- Leachability data for APCr was only available for the Vancouver plant, and this data represented post-treatment ash (Appendix E, Ash Management Study, page 14);

- Pre-treatment leachability data was not available for any of the reference plants (Appendix E, Ash Management Study, page 15);

- "Physical and chemical characteristics of the material" are yet to be established (Appendix E, Ash Management Study, page 18);

In summary, the majority of the data presented is not directly comparable, is different, or is of an insufficient quantity to perform comparative analysis. The report's authors say they 'understand' that the technology proposed for Woodlawn is 'similar' to the *reference* plants, but the data shows considerable variation to the proposal. The input waste feedstock also shows considerable variation. This does not meet the definition for comparison to facilities using the *"same technologies"* and treating *"like waste streams"*.

- The Ash Management Study is unable to fulfill the SEARs requirement to demonstrate *"that any waste material produced from the facility for land application or use in the construction industry is fit-for-purpose and poses minimal risk of harm to the environment in order to meet the requirements for consideration of a resource recovery exemption by the EPA".* The report provides no detail as to the specific concentrations of contaminants in pre- and post-treated ash (both IBA and APCr), cannot confirm the method of treatment for APCr, recommends an IBA weathering period of a maximum 3 months despite citing research demonstrating that IBA shows no significant changes up until at least 3 months; and details no research studies or examination of research into the possibility of contamination from material reuse despite stating the preference for use of IBA as roadbase (because it is capped to prevent contamination) and noting concerns with its use in bricks (because these materials *"could be used more widely in a sensitive environment"* – Appendix E, Ash Management Study, page 28). As such, any byproduct material for the proposed facility should be required to be managed as per the NSW EPA guidelines for contaminated waste. Should the facility be approved and future detailed testing indicate that material is suitable for use as landfill cover etc., then the proposal for reuse of the material should be publicly exhibited and widely advertised for community consultation and comment prior to examination and decision by the NSW DPIE and EPA.

- The report bases its findings on "privately supplied data" (Appendix E, Ash Management Study, page 1) which is not made available for examination. Will this data be provided to the Department of Planning's expert advisors for examination? Will this data be provided to the NSW EPA? Who supplied this data and what assessments have been made as to the data confidence levels?

- In classifying the waste, the report states that neither IBA nor APCr possess the hazardous characteristics under the "Transport of Dangerous Goods Code". How was this be assessed without a full breakdown of all the components that constitute both these materials? The EPA states *"Dangerous goods are substances and objects that pose acute risks to people, property and the environment due to their chemical or physical characteristics."* Is the report's assessment based on the danger of the waste byproducts pre- or post-treatment? Why are these byproducts not assessed to be dangerous? What would be the expected consequences should a load of APCr be spilled into a waterway, Tarago town centre, or onto land used for agricultural production? Would the consequences be worse in inclement weather?

- The Ash Management Study is contradictory. It states the inconsistency of data from the reference facilities and yet determines the data is consistent for the purposes of forming conclusions. It states that no stabilisation method has been determined, and then assumes use of portland cement stabilisation. These concerns are compounded as the encapsulation cell design report is based on portland cement stabilisation.

- The Ash Management Study (page 10) notes the risk that by-product waste composition may vary over time, and states that *"For this reason additional testing / waste characterisation should be considered in future, whenever significant changes to the input feedstock occurs."* Where is the detail on the proposed management strategy to mitigate this risk? What happens if contaminant treatment needs to be varied to ensure adequate management?

- The study into IBA composition notes testing done for upper confidence limits and specific contaminant concentrations, but testing on non-heavy metal compositional components appears to be largely missing from the test data (Appendix E, Ash Management Study, pages 12-13) .

- Conclusions drawn to classify the IBA as General Solid Waste based on reference data seem to be premature given the inconsistencies identified between the data sets and the absence of comparison with a waste stream and treatment methods in a 'like' facility.

- APCr compositional analysis of UK data (Appendix E, Ash Management Study, page 14) is unreliable as the UK APCr does not contain boiler ash. The findings fail to account for this difference.

- APCr compositional analysis notes that *"leachability of heavy metals is the key concern with regards to management of this material"* (Appendix E, Ash Management Study, page 14). No apparent consideration appears to have been given to the presence and risks associated with other contaminants.

- "The conservative classification of the APCr material likely to be generated at Woodlawn ARC based on the reference data is Hazardous Waste. Based on this classification the APCr would require treatment to immobilise the contaminants (particularly lead and cadmium), in order to reduce the classification to Restricted Solid Waste and allow disposal to an appropriate landfill facility." (Appendix E, Ash Management Study, page 15).

  However, the EIS then fails to identify a waste management proposal for byproducts should stabilisation of the contaminants to 'restricted solid waste' not be possible, nor even to identify the specific method to be used to immobilise contaminants. Additionally, the encapsulation cell design is then proposed based on immobilisation using Portland Cement stabilisation (despite this not be determined as the method of stabilisation and without proper consideration of the full range of contaminants and its efficacy at immoblising each contaminant), and very limited explanation is provided as to how waste management measures will need adaptation and redesign should this not be the stabilisation method used in the final process. The ash management plan proposes placing the waste material into the encapsulation cell prior to APCr compositional testing being completed and prior to the efficacy of the immobilisation method being established for the contaminants produced in the Woodlawn waste stream.

- The Ash Management Study(5.1.1, page 16) identifies that crushing of IBA may be considered in the future. What licence changes will be required for incorporation of this and what community consultation will take place?

3. "Extracted metals will then be sent for recycling in accordance with waste reduction and resource recovery policies. Veolia have estimated that the annual volume of metal waste extracted will be approximately 5,700 tonnes of ferrous metals (1.5% of annual feedstock) and 1,900 tonnes of non-ferrous metals (0.5% of annual feedstock)." (Appendix E, Ash Management Study, page 16).

   Overseas operations have identified the risk of contamination of these metals with dioxins/furans and other chemical contaminants.[1] What measures will be put in place to test for contaminants and ensure safe transport and reuse of these materials? This detail forms part of the SEARs requirements.

Reference:

1. Toxic Fallout: Waste Incinerator Bottom Ash in a Circular Economy, Research Report – January 2022, Zero Waste Europe)

- Have appropriate measures been put in place to ensure the safety of front-end loader operators working with IBA and APCr? (We note that the EIS identifies (AQIA) more than 6000kg of APCr dust particulate will be generated from front end loader operations).

- The Ash Management Study cites the risk of the process creating *"a new pollution source with potential environmental impacts at the landfill site if not appropriately managed"* (page 19). In what way has Veolia's failure to adequately and appropriately manage pollutants at Woodlawn in their existing operations been incorporated into the EIS ash management assessment?

- Despite assurances to the community that best-practice standards and technology will be in use at the facility, the ash management report eliminates vitrification (widely acknowledged as best-practice management of APCr byproducts) from consideration due to cost. If best practice management of hazardous byproducts is too costly for the facility, then the facility is too costly for our communities and environment.

- Table 5.1 APCr treatment options (Appendix E, Ash Management Study, page 20) identifies APCr treatment option availability in Australia as a prime consideration in decision-making. Given waste-to-energy incineration is not yet available in Australia, decision-making should be made on best-practice treatment of waste byproducts (as is supposedly the case in implementing the incineration technology). Current availability and feasibility of byproduct treatment options should be considered following an assessment of the best available treatment options for management of both heavy metals and other byproduct contaminants (such as Persistent Organic Pollutants).

- The Ash Management Study states the "most practical treatment options" for APCr byproducts were identified based on a "benefits vs limitations" study, however the effectiveness of each of the immobilisation methods under consideration does not appear to have been included in this study. No details are presented for the effectiveness of each immobilisation method at containing the wide range of contaminants identified in the waste. This fails to meet the SEARs criteria, and profitability appears to have been given priority over effectiveness.

- Despite outlining prospective methods for APCr treatment, the study fails to identify what method will be used, and thus fails to answer the SEARs requirement to describe the treatment and handling of waste ash.

- The Ash Management Study describes that additional leaching tests and treatment trials may be required to establish proper waste management (pages 23, 24). What tests is Veolia proposing to undertake? How and when will they be implemented? Who will manage the testing and oversight? How will recommendations be publicised and implemented? How does this meet the SEARs requirements to detail the proposed waste ash treatment methods?

- We object to the proposal noted in the Ash Management Study (page 24) for submission of a *'preliminary SIA (Specific Immobilisation Approval) report prior to the (treatment) trial'* in order to gain *'in principle'* approval from the EPA for disposal of any ash into the encapsulation cell prior to full APCr treatment details, analysis and management processes being established and approved by the EPA. This represents an untenable level of risk of harm to the community and environment. Additionally, the document provides no description of how extraction and retreatment of APCr ash from the encapsulation cell could be managed in a safe manner that would prevent pollution and harm to the surrounding environment and community should immobilisation be judged insufficient.

- The report fails to detail how APCr is conveyed from the *'silos to the adjacent stabilisation facility'* (Appendix E, Ash Management Study, page 25). How is this managed?

- Will trucks/tractors/bins (Appendix E, Ash Management Study, page 25) transporting APCr waste to the encapsulation cell be covered? What will be done to prevent the spread of dust or materials during transport? How will potential load spillages be managed to prevent contamination of the surrounding environment?

- What impact does compaction of APCr (Appendix E, Ash Management Study, page 25) have on the integrity of the waste material (i.e. its ability to stabilise contaminants) and the integrity of the encapsulation cell liner (ability to resist damage/leakage etc)?

- How and where will IBA be disposed of if contamination means it cannot be landfilled (and what provisions have been made for this in the design)?

- How and where will APCr be disposed of should offsite disposal be required?

- Given the risk of downstream and groundwater contamination (as identified through existing operational contamination), CATTI opposes the disposal of IBA in the existing Woodlawn landfill without extensive, long-term testing of contaminants and assessment of the effectiveness of weathering/treatment over a range of timeframes (up to and including 6 months as recognised in the Ash Management Study's cited literature).

- The Ash Management Study (page 27) acknowledges that IBA reuse is limited by "the specific chemistry of the by-products". Given this inherent risk and emerging research from Europe about contamination resulting from reuse, $600 million dollars is a needlessly risky investment given the sustainable bioreactor landfill and gas capture facility already operating onsite.

- No specific guidance from regulators currently exists in relation to EfW IBA reuse in NSW, however it is understood that both Victoria and WA are currently developing frameworks and a number of industry bodies including the Australian Road Research Board (ARRB) and Cement Concrete & Aggregates Australia (CCAA) have produced documents supporting the future use of IBAA for various industries. (Appendix E, Ash Management Study, page 6)

  The report fails to include information outlining the risks associated with use of recycled material as road base, and in particular material containing harmful contaminants. The following is from the AustRoads Guide to Pavement Technology Part 4E, Recycled Materials (page 14):

  "Environmental authorities place restrictions on the spread of harmful contaminants (e.g. heavy metals, pesticides and carcinogens) through the environment. Unless appropriate controls are in place, recycling waste materials and industrial by-products provides a potential path for the spread of undesirable contaminants. The presence of asbestos – either in fragment (non-friable) or fibre (friable) form – is also strictly controlled by the Environmental Health Commission and numerous legislations and regulations depending on jurisdiction (Environmental Health Commission, 2005)."

  Figure 2.4 illustrates a typical road section, showing water-related mechanisms that may allow contaminates to leach into the surrounding environment. Each recycled material should be assessed for its likelihood to leach undesirable, regulated or prohibited contaminates into the environment, and the impact associated with any such leaching. Further, the potential long-term impacts of contaminants being within the pavement need to be considered, including end of life treatment and handling of pavements/pavement materials."

- The Ash Management Study contains insufficient evidence to demonstrate that reuse of waste material from the facility is fit-for-purpose and poses minimal risk to the environment. There is very little examination of literature in respect to the matter, and none that addresses the risks of contamination (despite several sentences inferring contamination risks). Risks are touched upon in regard to brick/paver/pipe bedding in the statement *"Reuse of EfW IBA for pipe bedding or bricks/pavers are considered higher risk reuse options in that these applications could be used more widely in a sensitive environment (e.g. residential setting)", and in the conclusion that road base and structural platform construction "present the best opportunity for the material to be utilised in an application that is effectively capped (via pavement)"*. The failure to examine the risks associated with reuse is alarming, particularly for regional road users in vicinity of the proposed facility who are fully aware of how little capping has remained on the roads over the past two years. Flooding and extreme rain events pose a serious risk of contamination from IBA reuse in road base materials (particularly of roadside paddocks used for grazing and cropping in rural areas). The EIS does not include a comprehensive analysis of those risks, nor does it demonstrate that materials will be fit-for-purpose. As such, should the facility be approved, no consideration should be given to reuse of either the IBA or the APCr waste byproducts until a minimum of 5 years testing is completed on Woodlawn IBA

outputs and the contamination risks have been properly assessed in relation to the by-product composition. Until such time, byproducts should be managed in accordance with the NSW EPA requirements for contaminated waste.

4. The recommendation to periodically reconsider the reuse of APCr is concerning. Research indicates this material is highly contaminated with Persistent Organic Pollutants (POPs) and heavy metals.[1] Australia is a signatory to the Stockholm Convention and has agreed to take measures to eliminate or reduce environmental releases of POPs. As such, should the proposal be approved, APCr should be completely withdrawn from any future reuse considerations and the community provided with assurance that any APCr byproducts will be properly managed as hazardous material until independently verified to be dormant. IBA should be fully assessed for POPs composition along with other contaminants, and managed accordingly. Until a full and comprehensive assessment is complete, byproducts should be managed in accordance with the NSW EPA requirements for contaminated waste.

Reference:

1. The hidden impacts of incineration residues: Case Study, 2019, ToxicoWatch.

- The Ash Management Study notes that many of the "assumptions" made in the report will be subject to NSW EPA approval. The number of 'assumptions' in the study are concerning, and it fails to meet the SEARs requirement to "describe", "demonstrate" and "detail".

- Quantities and details of the reagents required for the treatment batching plant (Ash Management Plan, page 30) for waste stabilisation appear to be missing from the Ash Management Study, as do the storage and risk mitigation requirements. The public exhibition timeframe does not allow sufficient time to search for these measures across the broader EIS documentation (should they exist). These should be referenced in the Ash Management Study to allow easy cross-referencing.

- Section 7.3 Identified Risks (page 31) of the Ash Management Study is woefully inadequate. Despite being qualified with the statement that it *"cannot be considered an exhaustive list of risks associated with this specific project",* labelling the three items a 'list' is a stretch of the imagination. Obvious risks such as contamination from IBA/APCr storage, compromising weather events impacting waste storage, incorrect assessment of the waste composition and stabilisation methods, and contamination through reuse are all glaringly absent from the 'list'.

- The Ash Management Study (page 31) claims that risks associated with waste byproducts will likely be mitigated by the EPA requiring adequate testing of output waste-by-products and through testing requirements detailed in an environmental licence for the site following project approval. The inherent risk obvious to all in the Tarago community is the inability of the EPA to enforce licence conditions at Veolia's current Woodlawn operations (as evidenced by the numerous licence breaches, fines and prevention notices issued since 2004). It is highly unlikely that increasing the extent of Veolia's operations will improve the EPA's ability to enforce licence requirements, and on the contrary, the opposite is likely to be true.

- References used in the Ash Management Study are quite dated, with many from the early 2000s, and several from the 1990s. This calls into question the validity of any claims made about the efficacy of stabilisation methods and the safety of waste by-product reuse.

  "The most suitable treatment option for the APCr for the purposes of this study and associated reference design considerations is Portland cement stabilisation, however alternative treatment options such as phosphate stabilisation would be further considered as the project develops;" (Appendix E, Ash Management Study, page 30).

  The finalised stabilisation method should be outlined in the EIS. This is the document that stakeholders are using to determine the impact this proposal will have on them and their environment. The stabilisation method is used as the basis for many other assessments in the EIS – encapsulation cell design, greenhouse gas emissions, human health risk, air quality impact assessment, transport and so on. The failure to confirm the stabilisation method voids not only the waste management assessments, but also the other assessments that are reliant upon this treatment method in making their assessments.

- “Although all waste output by-products from the Woodlawn ARC would be disposed to landfill initially, there are various potential beneficial re-use options for IBA which should be considered as soon as the plant is commissioned. Despite a lack of guidance in NSW currently, there is a well-established history of IBA reuse overseas and it is expected that there will be increasing market demand in future for this product;” (Appendix E, Ash Management Study, page 30)

  “Potential reuse strategies for both IBA and APCr should be reviewed periodically (e.g. at least every 5 years) as the EfW and associated recycling industries in Australia develop. (Appendix E, Ash Management Study, page vii)

  If Veolia has plans to reuse this waste the plans should form part of this assessment as detailed in the SEARs requirements. Constant changes to licencing and operational conditions places an unnecessary burden on the community to monitor for, examine and respond to plans ongoing. This is particularly onerous in the Goulburn-Mulwaree region which is the subject of a significant number of State Significant Developments.

- 2.4 Future Trends / Legislation Considerations (Appendix E, Ash Management Study, page 6)

  Why is there no mention made of the emerging contamination being associated with reuse of IBA in other areas of the world?

- “2.1.3 NSW WASTE AND SUSTAINABLE MATERIALS STRATEGY 2041
  In this strategy document the NSW Department of Planning, Industry and Environment (DPIE) state that recovering energy from waste can be a legitimate and necessary residual waste management option where it can deliver positive outcomes for the community and the environment and assist in lowering carbon footprint and reducing the need for landfill.
  Energy recovery can also reduce emissions by replacing more carbon-intensive fuels and by stopping harmful methane emissions from materials in landfill. However, it is noted that general waste reduction, recycling and beneficial re-use are priorities over EfW recovery.
  “We want to support energy recovery where it makes sense to do so and where it is used to manage residual waste, not as an alternative to recycling.”(DPIE)” (Appendix E, Ash Management Study, page 4)

  Not only is Veolia proposing to burn recyclable materials like glass, metal, paper, cardboard and FOGO (food and garden organic) waste, but European data demonstrates that waste incineration results in reduced recycling. UK data clearly shows the decline in recycling rates as incineration rates increase.1 This is contrary to the aims of the NSW Waste and Sustainable Materials Strategy 2041.

  Reference:
  1. UKWIN (UK Without Incineration Network) Facts & Figures (ukwin.org.uk/facts), 2022, data sourced from UK Department for Environment, Food and Rural Affairs.)

- “3.3 COMPOSITIONAL RISKS – As noted in Section 3.2 above, the composition of waste likely to be utilised as feedstock at Woodlawn is generally comparable to the waste composition utilised by the reference plants. However, the composition of waste by-products resulting from any plant is site and feedstock specific. A risk relating to by-product composition, treatment requirements and potential future beneficial reuse viability will therefore exist until a data set of actual waste by-product chemical composition can be established and assessed (i.e. during the commissioning phase of the project).

  In addition, changes to input feedstock over time due to additional recycling or resource recovery activities has the potential to vary the output waste by-product characteristics. For this reason additional testing / waste characterisation should be considered in future, whenever significant changes to the input feedstock occurs.” (Appendix E, Ash Management Study, page 10)

  Once the facility is operational and producing waste there are only 5 days worth of storage for this material before it needs to be moved to the encapsulation cell. What is the specific procedure proposed for establishing and assessing the chemical composition of waste during commissioning? How much APCr will be produced before APCr assessment is complete? How will APCr be managed prior to full assessment being completed?

- “This process was applied to the ash waste data obtained from the reference plants where possible (i.e. if sufficient data was provided to calculate the summary statistics) and the characterisation of each waste product is discussed in the following sections.” (Appendix E, Ash Management Study, page 12)

  Why is data insufficient? Veolia state they operate more than 60 of these facilities worldwide. Why hasn’t Veolia provided sufficient data for analysis?

- Appendix F – Encapsulation Cell Design Report: No reference facility information about similar encapsulation design cell management of APCr is provided, and no details are provided on how APCr is managed at reference facilities.

- The Encapsulation Cell Design Report fails to meet the SEARs requirement for a detailed design that "demonstrates the contaminants can be adequately managed" because it leaves an excessive number of details and design considerations to a future date. There is no certainty around what is actually being proposed for the cell design, nor its suitability to contain the specific contaminant composition present in the APCr and APCr leachate. This report would not be considered acceptable for the basis of procuring a suitable encapsulation cell. For example:

  - "Further site characterisation and design development will be required to advance the Encapsulation Cell design for subsequent project stages and to consider commercial risks and constraints for cell construction and operation." (Appendix F, Encapsulation Cell Design Report, page 7);

  - "existing subsurface conditions at the proposed Encapsulation Cell location have not yet been investigated in detail, however, the available information is sufficient for reference design. Existing conditions will need to be assessed though detailed site investigations for consideration in ongoing design development. Investigation should include contamination status of soils and shallow groundwater that may be encountered during construction works." (Appendix F, Encapsulation Cell Design Report, page 9)

  - "Potential effects of future subsurface mining on the Encapsulation Cell and any requirements for design features to mitigate mining effects should be addressed during ongoing design development." (Appendix F, Encapsulation Cell Design Report, page 10)

  - "The outer surface of the perimeter bund will require design treatment to protect against potential surface deterioration or wave action erosion by ED1 water. This will be specified during ongoing design development." (Appendix F, Encapsulation Cell Design Report, page 17)

  - "existing ground surface levels are not available for the full extent of the proposed Encapsulation Cell footprint because some areas were inundated by the waters of Evaporation Dam 1 (ED1) at approximately RL 786 m at the time of survey (refer Section 2.2)." (page 18)

  - "There is, however, uncertainty in the existing ground level below the Encapsulation Cell and the filling volumes are likely to change during ongoing design development (see discussion in 3.4.3). (Page 20)

  - Ongoing design development may result in a change in number and orientation of cells and subcells. (Appendix F, Encapsulation Cell Design Report," page 20)

  - "During ongoing Encapsulation Cell design, when additional subsurface information has been obtained, the need for a groundwater drainage layer should be further assessed. In this regard, the assessment should consider the potential for: (i) seepage from adjacent ponds to flow towards and under the Encapsulation Cell; and (ii) the potential for loading from construction and filling of the Encapsulation Cell to cause consolidation settlement and water expulsion from underlying alluvial clay soils. The assessment should also balance the benefits of a groundwater drainage layer against the potential to create preferential flow pathways beneath the Encapsulation Cell. If implemented in ongoing design development, disposal of any waters collected in a groundwater drainage layer should also be addressed." (Appendix F, Encapsulation Cell Design Report, page 26)

  - "Landfill Guidelines indicate that a 1.0 m thick compacted clay liner may be used in place of the secondary geomembrane/ GCL liner. This option to be assessed in ongoing design development." (Appendix F, Encapsulation Cell Design Report, page 27)

  - "Layout and spacing of the lateral leachate collection pipes will be confirmed in ongoing design development based on maximum allowable leachate head of 300 mm above the floor liner for severe-case design conditions." (Appendix F, Encapsulation Cell Design Report, page 27)

  - "Pipe diameters and wall thicknesses will be specified to provide suitable resistance to loading from construction and progressive APCr placement." (Appendix F, Encapsulation Cell Design Report, page 28)

  - "Required transmissivity and specifications of the leachate collection geocomposite drainage net is to be determined in ongoing design development in accordance with Landfill Guideline requirements." (Appendix F, Encapsulation Cell Design Report, page 28)

  - "Consideration should be given in ongoing design development to the potential need for collection pipes to assist with transmission of collected leakage to the leak detection sumps." (Appendix F, Encapsulation Cell Design Report, page 28)

  - "ongoing design development may result in a change in the number and location of cells and subcells, and therefore change in the number of sumps." (Appendix F, Encapsulation Cell Design Report, page 28)

  - "Sump details are to be confirmed during ongoing design development." (Appendix F, Encapsulation Cell Design Report, page 28)

- “Due to higher leachate head that may potentially develop within the leachate and leak detection sumps, as compared to other portions of the floor liner, ongoing design development will consider installation of an enhanced liner beneath the sumps.” (Appendix F, Encapsulation Cell Design Report, page 29)

- “Details of Geomembrane and GCL materials to be assessed during ongoing design development.(Appendix F, Encapsulation Cell Design Report,” page 29, 30)

- “Need for Leak Detection collection pipes to be considered in Ongoing design development. (Appendix F, Encapsulation Cell Design Report,” page 30)

- “Base of lowest point of cell floor liner (in leachate collection Sumps) to be above highest historically recorded groundwater table. Required levels to be further assessed in ongoing design development.” (Appendix F, Encapsulation Cell Design Report, page 30)

- “Single 5 m wide Bench on landform batter for surface water drainage (bench width to be confirmed in ongoing design development).” (Appendix F, Encapsulation Cell Design Report, page 32)

- “Contingency measures should be developed in ongoing design development and/or Encapsulation Cell operating plans for potential occurrence of extended periods of unfavourable climatic conditions to ensure that leachate storage capacity exceedance does not occur. For example, offsite disposal to a licenced liquid waste facility or treatment in the existing on-site leachate treatment plant (pending treatment suitability assessment) could be considered as contingency disposal approaches.” (Appendix F, Encapsulation Cell Design Report, page 35)

- “The design comprises a double liner system consisting of a primary geomembrane liner overlying a leak detection system, overlying a secondary Geomembrane/Compacted Clay composite liner (subject to design confirmation in ongoing design development).” (Appendix F, Encapsulation Cell Design Report, page 36)

- “Water balance model should be updated during ongoing design development based on Encapsulation Cell design, planned Encapsulation Cell operations, candidate cover soil materials, and any additional collected site weather data.” (Appendix F, Encapsulation Cell Design Report, page 37)

- “Revised water balance assessment for leachate evaporation pond design would be required in the event that alternate daily capping is proposed, because runoff from alternate daily cover must be treated as leachate. Additional evaporation pond capacity would be anticipated in this case.” (Appendix F, Encapsulation Cell Design Report, page 37)

- “Salinity and Sub-Ponds: Although the salinity, meaning the concentration of soluble salts, of Encapsulation Cell leachate is uncertain and will depend on specific APCr treatment processes adopted (refer Section 3.3), there is potential for high salinity to develop in the pond over time. High salinity is known to significantly reduce the rate of evaporation and therefore reduce overall evaporation pond performance. While the potential for high salinity has been indirectly considered in the selection of pan evaporation factor for the leachate evaporation pond water balance calculations (refer Appendix B), it may be necessary to divide the pond area into sub-ponds and regulate transfer of water between subponds such that high salinity is present in one or two sub-ponds only.” (Appendix F, Encapsulation Cell Design Report, page 37)

- “Removal of Contaminants/Salts: Increasing concentrations of dissolved contaminants and salts in the evaporation pond over time, and the potential use of sub-ponds to further concentrate the water in one or two sub-ponds, is likely to lead to the need for occasional removal of dissolved contaminants and salts when extremely high concentrations are reached through evaporation or stratification. This could be achieved through pump-out, chemical precipitation with desilting/desludging, or by mechanical removal after complete evaporation to a near-solid state. The need for ongoing pond design development to consider pump-out and desilting capability was identified in Section 4.9.3 above.” (Appendix F, Encapsulation Cell Design Report, page 37)

- “Management of Removed Contaminants/Salts: All contaminants and salts removed from the pond would generally be managed like any other waste, i.e., sampled, characterised, dewatered/treated as needed, and disposed of to an appropriate facility.” (Appendix F, Encapsulation Cell Design Report, page 38)

- “Additional Drop Structures, in addition to those included in the Reference Design should be implemented, if required, to efficiently manage stormwater drainage from the Encapsulation Cell final landform. Like the bench construction, the drop structures should be designed during ongoing design development as long-term stormwater structures to convey and provide erosion protection for up to a 1:100 AEP storm event.” (Appendix F, Encapsulation Cell Design Report, page 40)

- “Drainage channel sizing should be established in ongoing design development.” (Appendix F, Encapsulation Cell Design Report, page 40)

- “Temporary Separation Berms: Temporary separation berms would be formed either by: (a) the internal bunds between cells; or (b) separate adjacent earthworks. The use of (a) or (b) would be determined during ongoing design development.” (Appendix F, Encapsulation Cell Design Report, page 41)

- “The required height of these berms will be assessed during ongoing design development to provide a suitably low short-to-medium term risk of ED1 water, at MWL, overtopping into the APCr area footprint.” (Appendix F, Encapsulation Cell Design Report, page 41)

- “Ongoing design development of the Encapsulation Cell will include preparing: (a) construction method and procedure specifications; and (b) detailed requirements for construction quality assurance (CQA) consistent with the Landfill Guidelines.” (Appendix F, Encapsulation Cell Design Report, page 41)

- “Shear strength and interface shear strength requirements, required to ensure short- and long-term stability of the Encapsulation Cell base liner system have not been assessed and are not included herein. Material shear strength and interface shear strength requirements will be established in ongoing design development to ensure suitable stability factors of safety are achieved considering range of potential loadings that may occur.” (Appendix F, Encapsulation Cell Design Report, page 41-42)

- “Geomembrane type (i.e. HDPE or other) is to be confirmed during ongoing design development considering compatibility with encapsulation cell leachate (refer Section 4.11.4).” (Appendix F, Encapsulation Cell Design Report, page 42)

- “The need for use of textured geomembrane shall be assessed in ongoing design development.” (Appendix F, Encapsulation Cell Design Report, page 42)

- “While suitability of HDPE geomembrane is yet to be assessed...” (Appendix F, Encapsulation Cell Design Report, page 42)

- “Transmissivity: To be confirmed in ongoing design development.” (Appendix F, Encapsulation Cell Design Report, page 46, 47, 50, 52)

- “The material shall be specified to have a compressive strength suitable for the expected loading under waste placement to final design level.” (Appendix F, Encapsulation Cell Design Report, page 46)

- “Geotextile Equivalent Opening size - TBC in ongoing design development considering properties of overlying materials.” (Appendix F, Encapsulation Cell Design Report, page 48)

- “Geomembrane type is to be confirmed during ongoing design development considering compatibility with concentrated APCR leachates over the operational life of the encapsulation cell and considering the environmentally exposed application, including anticipated elevated service temperatures and UV exposure.” (Appendix F, Encapsulation Cell Design Report, page 50)

- “The chemical characteristics of Stabilised APCR leachate and Concentrated Stabilised APCR leachate are currently unknown and assessment of compatibility of these leachates with liner materials has not been completed as part of this reference design. Therefore, as part of ongoing design development, an assessment of Encapsulation Cell and Evaporation Pond liner materials compatibility with expected leachates should be undertaken to ensure proposed liner materials are compatible and not likely to be adversely effected or suffer reduced service life. The assessment should include literature review and laboratory compatibility testing.... Compatibility assessment should be repeated if differing specific products are proposed to be installed (such as in later cell expansions or pond liner replacements) compared to the specific products tested to ensure that installed products are compatible.” (Appendix F, Encapsulation Cell Design Report, page 53)

- “It is noted that based on the results of the GCL compatibility testing, assessment of need for an additional clean soil layer between the Leak Detection Geocomposite and the Primary GCL (intended to provide a better GCL hydration moisture source compared to Stabilised APCR Leachate) should be undertaken and this layer should be included if maximum leakage rate compliance is not considered likely without the addition of this layer.” (Appendix F, Encapsulation Cell Design Report, page 54)

- “Key property testing for HDPE Geomembrane should at a minimum include tensile strength, Oxidation Induction Time and Stress Crack resistance (to failure). Other geomembrane material types, if proposed for use, may need to consider different material properties.” (Appendix F, Encapsulation Cell Design Report, page 55)

- “Material Haulage should be further assessed in ongoing design development and additional design measures included as appropriate.” (Appendix F: Encapsulation Cell Design Report, Appendix C, Safety in Design, page 3)

- “Release of contaminated material during operational phase should be further assessed in ongoing design development and additional design measures included as appropriate.” (Appendix F: Encapsulation Cell Design Report, Appendix C, Safety in Design, page 5)

- “Waste material physical properties and stability should be further assessed in ongoing design development and additional design measures included as appropriate.” (Appendix F: Encapsulation Cell Design Report, Appendix C, Safety in Design, page 5)

- “Reference Design Report notes that closure plan should be developed for the Encapsulation Cell.” (Appendix F: Encapsulation Cell Design Report, Appendix C, Safety in Design, page 8)

- “2.4 Geotechnical Conditions – Shallow groundwater level within 0-2 m of ground surface - arising from ED1 evaporation pond operations (refer Section 2.5)”. (Appendix F, Encapsulation Cell Design Report, page 9)

  “The maximum groundwater level is approximately RL 786 m within the ED1 area. This level is inferred to have been affected by ongoing artificial groundwater recharge from ponded water within ED1 and recharge to the shallow aquifer is generally expected to decrease in areas where ED1 will be reclaimed. (Appendix F, Encapsulation Cell Design Report, page 9)

  Under gaining conditions shallow groundwater could contribute baseflow to Crisps Creek, however we understand that this is not routinely observed. (Appendix F, Encapsulation Cell Design Report, page 9)

  2.5.2 Existing Groundwater Contamination in ED1 – Assessment of seepage from the ED1 evaporation pond has previously been undertaken as reported in AECOM (2017). The AECOM report identifies that seepage from ED1 pond has impacted underlying groundwater (e.g., pH sulphate impacts), with migration up to 450 m to the north of ED1. The AECOM report recommended that an ecological risk assessment be undertaken to assess for seepage control. Ecological Risk assessment was completed in 2018 by Niche Environment and Heritage (Niche, 2018). The Niche 2018 assessment concluded that:

  - In general the groundwater ecology was in moderate risk, the surface water of Crisp Creek low risk…”

  - The groundwater environment was considered moderate risk as it had limited ecological value in the area and any contamination was reduced to background levels within 500-900 m of the dams.”

  - Crisp Creek was identified as low risk as the exposure to contaminants was assessed as low and consisted of resilient fauna which are adapted to chemical and physical stressors in low flow environments.”

  - Long term mitigation measures such as such as maintaining an effective dam liner as recommended by AECOM (2017) would reduce risks to low. Further water quality monitoring is recommended as well as consideration of developing site specific trigger levels. Ecological monitoring should also be continued to monitor for any potential future impacts and any amelioration efforts.” (Appendix F, Encapsulation Cell Design Report, page 10)

“The reference design has been developed on the basis that use of ED1 for Woodlawn site water management will continue throughout construction, operation, and closure of the Encapsulation Cell.” (Appendix F, Encapsulation Cell Design Report, page 10)

The above excerpts highlights existing contamination and the effect it has already had on destroying flora and fauna in Crisps Creek. There appears to be a significant risk that using the existing evaporation dams will result in further environmental pollution. This is supported by EPA Prevention Notice #3503885 (24/10/22) which details contamination of groundwater and Crisps Creek from ED1. The impacts from an encapsulation cell and associated leachate dam will be cumulative to existing pollution and may be greater in severity. Additionally, the community can have no confidence in Veolia’s willingness and commitment to maintaining an effective dam liner given the seepage that has already occurred.

Seepage has been identified from Evaporation Dam 1 and Evaporation Dam 2, and has been occurring for the past 5 years (since at least 2017). (EPA Notice Number 3503885, Reference 24/10/2022). The encapsulation cell drainage plan incorporates the use of ED1 for overflow and runoff, however, no mention is made of plans for liner inspection/replacement/remediation works that may be required to help guarantee dam integrity and environmental protection for the lifespan of the proposed encapsulation cell. No information is provided in the report as to when the ED1 dam liners will require replacement, although it states ED1 has been the subject of formal surveillance since 1997 (Appendix F, Encapsulation Cell Design Report, page 14). There is no information on the current condition of the ED1 dam liner.

- “3.2.1 NSW Landfill Guidelines – 3.2.1.1 Landfill Siting Requirements
  Not be located in or within 40 metres of a permanent or intermittent water body” (Appendix F, Encapsulation Cell Design Report, page 12)

Despite the requirement in the NSW Landfill guidelines to situate a landfill away from a permanent or intermittent water body, Veolia’s proposal places the encapsulation cell between two water bodies that have been leaking into the Sydney Water Catchment for the past 5 years. Given that leaks from these dams have already impacted Crisps Creek and the water catchment, the justification to discount these water bodies from consideration because they are not ‘natural water’ bodies is an irrelevant argument. Proximity to water is included in the requirements to prevent water pollution. If spills/seepage from ED1 and ED2 have previously contaminated local water than the risk needs to be assessed as per any other intermittent natural water body, and the design should adhere to the requirement for distance from these water bodies.

Additionally, it is unclear whether the perimeter bund between ED1 and the encapsulation cell meets the 40m requirement. The document states the bund “has a base width of approximately 40 m” (Appendix F, Encapsulation Cell Design Report, page 17). The requirement of the cell for a double-liner does not justify a reduced distance from an intermittent water body given the hazardous nature of the cell contents. The document also states that a “1.0m compacted clay liner may be used in place of the secondary geomembrane/GCL liner (Appendix F, Encapsulation Cell Design Report, page 27) which does not seem advisable given the history of seepage. The large operating area at Woodlawn also strongly suggests that location of the encapsulation cell site away from water bodies would not be unfeasible.

Given the nature of the waste proposed for the landfill (hazardous material containing substantial quantities of heavy metals and persistent organic pollutants (POPs)), the design should be rigorously compliant with minimum standards, and make genuine efforts to exceed minimum requirements for landfill safety whenever possible.

- “3.2.1.3 Leachate Storage and Disposal – Given the high evaporation at the site compared to rainfall, disposal of leachate by evaporation in an evaporation dam is feasible and is proposed as the primary leachate disposal approach for the Encapsulation Cell.” (Appendix F, Encapsulation Cell Design Report, page 13)

Rainfall over the past 2 years, climate change predictions and the 2022 overflow of coffer dam 1 at Woodlawn (EPA Notice Number 3503885, Reference 24/10/2022) provide ample evidence that leachate evaporation should not be the only method of leachate disposal considered in this report. What does Veolia propose to do when dams are at capacity?

- Failure of coffer dam 1 in 2022 within 4 years of construction in 2018 (EPA Notice Number 3503885, Reference 24/10/2022) indicates a higher risk of failure than appears to be identified in the encapsulation cell design report.

- “3.2.4 Dam Safety – Evaporation dams ED1 and ED2 are prescribed under the Dams Safety Act and have been subject of formal surveillance reporting since 1997. (Heron Resources Woodlawn Mine, Mine Operations Plan, August 2015 Section 2.3.6). It is understood that these dams are to be retained and operation of these dams continued. The Encapsulation Cell is located within ED1, with the existing embankment wall separating ED1 and ED2 forming the western cell edge and a portion of the southern embankment wall of ED1 forming the southern cell edge.” (Appendix F, Encapsulation Cell Design Report, page 14)

Given the recent failures of these dams (EPA Notice Number 3503885, Reference 24/10/2022) and that Veolia advises dam linings are guaranteed for a maximum 30-year period, what plans have been made to ensure the integrity of the dam lining in ED1 and ED2 prior to proposed construction of the Encapsulation cell? How will integrity of these and the other ponds/dams be ensured over the lifespan of the facility and the post-operation monitoring/rehabilitation?

- 3.3 Ash Types and Quantities – The Ash Management Study (page 15) provides a review of APCr composition and indicates that “the most suitable stabilisation approach is considered to be mixing of Portland cement with APCr at a nominal 2:5 (cement: APCr) dry weight ratio”. This is inconsistent with the Ash Management Study which states, “Mixing ratios for ash:cement in international reference plants range from 1:4 to 1:2, which vary with leachability and the required stability/strength of the final product. However, the exact mixing ratio required to adequately limit leachability of the Woodlawn APCr will be ascertained during the testing for the immobilisation approval process.” (Footnote 1, page 25). In addition, the Ash Management Study provides no assurance that cement mixing will be the stabilisation method of choice (“Other stabilisation reagents may also be explored as the project develops and as specific waste characterisation data becomes available (as other reagents may be deemed more effective.” page 26), which calls into question the accuracy and validity of the proposed encapsulation cell design.

- “3.4.2 Proximity to Existing Evaporation Dams – Aerial photographs indicate that ED2 has recently been subdivided and fully geomembrane lined. (Appendix F, Encapsulation Cell Design, Page 18)

Why weren’t details on this procedure provided by and/or confirmed with Veolia to establish the extent of works and the existing condition of ED1 and ED2?

- "Table 8: Encapsulation Cell – Major Operational Considerations: APCr placement:
  Compaction of wastes to achieve efficient use of airspace and ensure suitable waste stability Initial placement area in first cell prior to APCr treatment confirmation" (Appendix F, Encapsulation Cell Design, Page 25)

  How may waste compaction impact the integrity of the cell liner?
  How may waste compaction impact the stabilised waste (e.g. dust contaminant release, etc).

- What is the detailed plan for waste recovery, re-treatment/transport, management and remediation should testing indicate the APCr placed in the initial cell is not be adequately stabilised?

- "Primary System- Leachate Collection – The filter geotextile is to be selected during detailed considering the particle size distribution of the treated APCr." (Appendix F, Encapsulation Cell Design Report, page 27)

  How will selection be done without APCr details? Is Veolia planning to produce APCr without an encapsulation cell prepared?

- "The maximum average batter slopes of the Southern and Western Batters 4.25H:1V (23.5%) slightly exceeds the 20% slope that is recommended to be avoided by the Landfill Guidelines." (Appendix F, Encapsulation Cell Design Report, page 33).

  This is unacceptable. Given the nature of the waste proposed for the landfill (hazardous material containing substantial quantities of heavy metals and persistent organic pollutants (POPs)), the design should be rigorously compliant with minimum standards, and make genuine efforts to exceed minimum requirements for landfill safety and integrity whenever possible. In particular, the encapsulation cell is proposed for an area subject to strong winds, heavy rainfall events and a history of local watercourse and groundwater pollution. The proposed design is not compliant with NSW EPA acceptable design.

- "4.8.3 Site Closure – It is assumed that Veolia Environmental Services, or other responsible party, will retain care and control of the site post closure and that the site will not be open to public access. A final closure plan should be incorporated into Veolia's LCRMP (Veolia, 2016)." (Appendix F, Encapsulation Cell Design Report, page 33)

  Ongoing maintenance and control to ensure the cell integrity remains intact following site closure is a key community concern. The SEARs requires that the treatment, storage, disposal and handling of onsite waste be described and that the detailed encapsulation cell demonstrate contaminants can be managed, not only during operational life of the incinerator, but until materials are dormant post-operation. This forms part of the proposal under consideration in the public exhibition of the EIS. What is the final closure plan to manage the encapsulation cell?

- "4.9.3 Evaporation Pond – Evaporation pond positioned within site such that in the event of overflow occurring the spilled leachate would be contained within ED1 prior to a potential offsite discharge occurring. The pond will include an emergency spillway into ED1 at an appropriate location." (Appendix F, Encapsulation Cell Design Report, page 36)

  "This type of pond liner system – two liners sandwiching a leak detection system with the lower liner being a composite liner – provides for a very high level of containment and is suitable for Encapsulation Cell leachate, even if the leachate is concentrated by evaporation." (Appendix F, Encapsulation Cell Design Report, page 36)

  What impact will this have on contamination in ED1? Does ED1 feature the same double-lined cell? The report notes the need for a double liner with leak detection system in between as suitable for encapsulation cell leachate. Overflow to a single-layer lined dam would increase the risk of contamination into the Sydney Water Catchment, especially when ED1 has a history of seepage and groundwater pollution.

- "Revised water balance assessment for leachate evaporation pond design would be required in the event that alternate daily capping is proposed, because runoff from alternate daily cover must be treated as leachate. Additional evaporation pond capacity would be anticipated in this case." (Appendix F, Encapsulation Cell Design Report, page 37)

  Veolia are proposing to use IBA as alternative daily capping so design considerations should include details on design for additional pond capacity.

- "For reference, if the incoming Encapsulation Cell leachate is assumed to have a very high concentration of dissolved solids similar to seawater, 35,000 mg/L, and the total incoming leachate flow over the Encapsulation Cell lifetime is 90,000 m3 (refer Section 4.9.3 above), then the total dry weight of leachate contaminants/salts that will enter the pond is approximately 3000 tonnes. This is a relatively small tonnage, in that even if completely removed from the pond it represents less than 1% of the estimated 532,000 tonnes of treated APCr to be placed in the Encapsulation Cell over its lifetime (refer Section 3.3)." (Appendix F, Encapsulation Cell Design Report, page 38)

  Where is the reference facility data to support these statements?

- "Table 13: Required properties for HDPE Geomembrane" (Appendix F, Encapsulation Cell Design Report, page 43)

  Will the properties outlined in this table remain true regardless of the APCr stabilisation method adopted?

- "It is anticipated that the Evaporation Pond Primary Geomembrane may need to be periodically replaced during the operational life of the Encapsulation Cell in response to geomembrane material degradation. A program of geomembrane degradation monitoring should be implemented during operation to enable efficient scheduling of liner material replacement. (Appendix F, Encapsulation Cell Design Report, page 50)

  It is noted that service life may be predicted that is less than the operational life of the encapsulation cell,indicating that the pond liner materials may need to be periodically replaced. Evaporation Pond liner replacement schedules should consider the results of the compatibility testing." (Appendix F, Encapsulation Cell Design Report, page 51)

  How often is it anticipated pond liner replacement will be needed (best case and worst case calculations)? How will leachate contaminants be managed during geomembrane replacement? How will liner replacement work be undertaken? What hazards and risks are associated with this work and how will these be managed/mitigated?

- "The chemical characteristics of Stabilised APCR leachate and Concentrated Stabilised APCR leachate are currently unknown and assessment of compatibility of these leachates with liner materials has not been completed as part of this reference design." (Appendix F, Encapsulation Cell Design Report, page 50)

  Where is the reference facility data demonstrating 'like' leachate chemical characteristics? What liners have been used at those reference facilities? What finds have resulted from leachate management at reference facilities? How does this meet the SEARs requirement to demonstrate how waste will be stored when there is no data to support the compatibility of materials for the proposed storage method? Some data on APCr particulate matter chemical composition is provided in the Air Quality Impact Assessment (Table C.12, page C.23) - how can this be provided without knowing enough about the chemical composition of the APCr to assess liner compatibility? If comprehensive reference facility data is available, why hasn't it been used in the Ash Management Study and Encapsulation Cell Design Report? If comprehensive reference facility data is not available - why not?

- In considering the weather data for the design of the leachate pond, was an extreme case scenario (reflective of climate change extremities) modelled to compare with the 33-year long-term weather data?

- How does the 1 in 25-year 24 hour duration storm event modelling compare with weather data from Woodlawn for the recent storm/flooding/extended rain events of 2021 and 2022?

- "In addition, once constructed, the evaporation pond storage should be carefully monitored for an initial time period to calibrate actual leachate generation rates against HELP model predicted values and the water balance model (particularly pan factor) against actual evaporation pond levels." (Encapsulation Cell Design Report, Appendix B, page 7)

  What solutions are proposed should evaporation pond capacity not prove sufficient?

- "Table 1: Layer properties used for HELP model input - Saturated Hydraulic Conductivity (Ks) (m/s)" (Encapsulation Cell Design Report, Attachment A: Help Model, page 2)

  How were the Saturated Hydraulic Conductivity figures calculated without confirmation of the stabilisation method or the chemical composition of the APCr data? How might this change with different methods of APCr stabilisation and different APCr compositions?

- Are any adjustments likely to be necessary to account for deficiencies in the HELP modelling system (e.g. leachate accumulation)?

- Encapsulation Cell Design Report, Appendix C, Safety in Design

  The design measures that have been included to eliminate or reduce the hazard are not specific. It is difficult to draw a conclusion between the design measure and the associated reduction in risk proposed. There would be no way to verify that the design measures as written have been executed and have mitigated the risk as calculated. The generic statements indicate a lack of familiarity with the project details and requirements.

SEARs requirements:

A quantitative traffic impact assessment prepared in accordance with relevant Roads and Maritime Services and Austroads guidelines, that includes:

- **details of all daily and peak traffic volumes likely to be generated during all key stages of construction and operation, including a description of key access / haul routes, distribution of movements, duration of impacts, vehicle types and queuing impacts**
- **an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including a review of crash data and consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model**
- **plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network**
- **details and plans of the internal road network, loading dock servicing and provisions and on-site parking provisions in accordance with the relevant Australian Standards**
- **swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site**
- **details of road and intersection upgrades, infrastructure works or new roads or access points required for the development, if necessary**
- **identification of the truck routes between waste source locations and the site for fuel deliveries, and between the site and potential disposal sites for waste generated**
- **details of the types of material being transported and whether the material would be classified as dangerous goods under the Australian Dangerous Goods Code**
- **a draft construction and operational traffic management plan.**

The traffic and transport assessment fails to meet the SEARs requirements because it inaccurately represents:

a) the impact that Veolia's current operations have on road safety and capacity; and

b) the impact the proposed future operations will have on road safety and capacity.

On average, 75% of the incoming trucks carry waste from the Crisps Creek IMF. The remaining 25% of trucks, which includes trucks transporting daily cover material for the Bioreactor, originate from various regions in NSW and arrive by the regional road network. (Traffic Impact Assessment, pages ES.2 - ES.3)

Currently, Veolia's primary haulage route is limited to an 8.5 km route from the Crisps Creek IMF to site via Bungendore Road and Collector Road. (Social Impact Assessment, page 54)

Reporting on traffic impacts in the Woodlawn ARC Environmental Impact Statement (EIS) emphasises that 75% of Veolia's incoming trucks are limited to the 8.5km route primary haulage route from the Crisps Creek Intermodal Facility (IMF) to the site via Tarago-Bungendore Road and Collector Road. This fails to convey the significant impact Veolia's truck haulage is having on local road conditions and user safety, and provides a minimimised perspective of the number of trucks travelling Tarago-Bungendore road.

As Figure 3.6 of the traffic impact assessment (page 24) demonstrates, every truck travelling to the site travels along Tarago-Bungendore road. Trucks travelling from ACT/Queanbeyan/Palerang travel north until the Collector Road intersection, while the Eurobodalla/Bega, Goulburn-Mulwaree, Upper Lachlan and Yass Valley trucks travel through the centre of Tarago itself and then south along Tarago road and past the IMF to Collector Road.

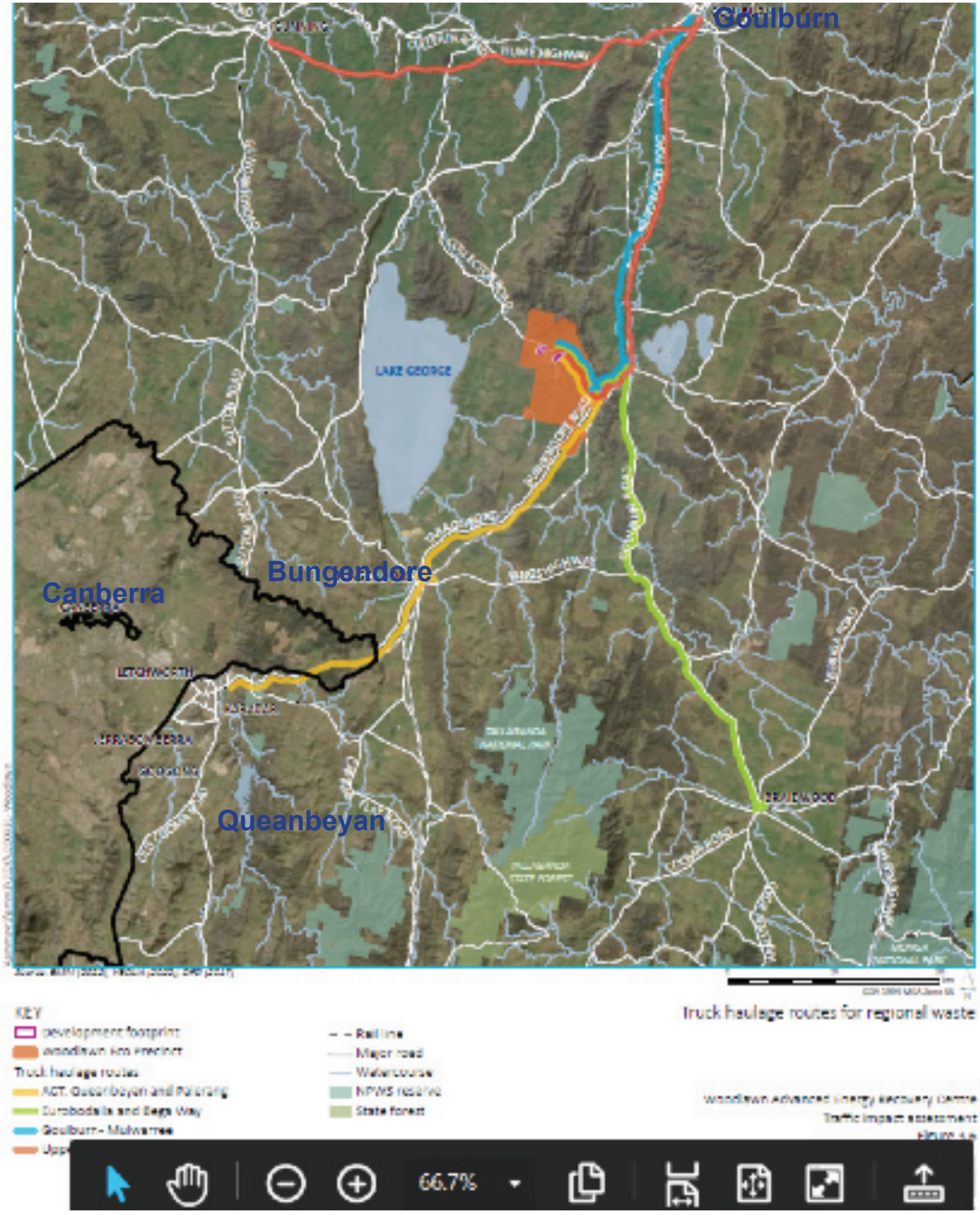


Figure 3.6, Traffic Impact Assessment, page 24.

To provide context, Braidwood Road forms part of the Goulburn to NSW South Coast (Batemans Bay) route, the Tarago-Bungendore Road forms part of the Canberra Region to NSW South Coast (Nowra) route, and the village of Tarago is sited on the intersection of both these routes. A significant portion of the working population of Tarago and surrounds travel the Tarago-Bungendore Road to and from work in the ACT each day. There are also a number of school buses travelling the road to transport children from local communities to schools in the surrounding region (Tarago, Braidwood, Bungendore and Goulburn). Tarago-Bungendore Road is also the main travel route from Canberra to Nowra which results in substantial additional road traffic from Friday-Monday each week, and significant numbers of Defence personnel and vehicles travelling between Canberra and Jervis Bay also use the road.
The Tarago-Bungendore road is a narrow, single-lane rural road with a 100km/hour speed limit that is in a deteriorated condition (soft edges/washouts and a significant number of potholes spanning much of the road in many areas).

The section passing the IMF is 100km/hour speed limited, yet trucks entering the road from the IMF travel at a speed between 20-40km/h for the entire hill climb until they reach the intersection of Bungendore and Collector road. There is no overtaking option for other vehicles as this is a double-lined stretch of road. In addition, due to the poor condition of the road, trucks hold to the centre of the road and often travel partially in the oncoming lane.

It is a common occurrence to encounter a truck travelling towards you that has crossed the centre line of the road, and due to the narrow lanes and soft edges there is little room to avoid these vehicles. This is an issue of particular concern to the community in regard to school bus transport. The community Facebook pages regularly alert drivers to accidents along Tarago-Bungendore road and Veolia's other trucking routes, and a number of recent accidents have involved trucks.

In addition to trucking waste from the IMF, Veolia also has a licence permit to receive 130,000 tonnes per annum of regional waste and requires cover material for the bioreactor to be trucked to site. This results in a substantial number of additional trucks travelling much longer distances along the roads to and from Tarago (e.g. the one-way drive to Braidwood is approximately 60km and one-way to Canberra/Gunning is approximately 70km). Quarry trucks with cover material also travel along Cullulla/Lumley road through the centre of Tarago. Many people in the community believe Veolia is running far more trucks than is reported, and this has been an issue of concern raised at Community Liaison Committee (CLC) meetings over the past year. Members of the CLC also report that Veolia has indicated its intention to increase Regional Waste volumes to 200,000 tonnes per year, which will add a significant number of trucks to the current numbers and put additional pressure on the road network. Veolia's reporting demonstrates that regional waste transport has progressively increased, and as Veolia has recently merged with Suez (who provide ACT-based waste collection services), it highly likely there are plans to expand upon the volume of regional waste transported to the bioreactor. We note that on 9 December 2021 Veolia received a Formal Warning Letter (Notice number: 3501566) from the NSW EPA for exceeding its regional waste allowance:

"The limit for maximum waste input rates at the Landfill for putrescible regional waste received by road was exceeded in the 2019-2020 AEMR reporting period."

Section 64 Protection of the Environment Operations Act 1997

Formal Warning Letter

Released by the Environment Protection Authority under the GIPA Act. Ref: EPA783

Licence 11436

VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD

20 051 316 584
CNR UNWIN AND SHIRLEY STREETS
ROSEHILL NSW 2142
email: s74

Attention: s74

Notice Number	3501566
Reference Number	REG-1489
Date	09-12-2021

FORMAL WARNING IN RELATION TO BREACHES OF ENVIRONMENT PROTECTION LICENCE No. 11436

VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 11436 ("the licence") for premises at COLLECTOR ROAD TARAGO NSW 2580.

BACKGROUND

- Veolia Environmental Services (Australia) Pty Ltd operates a Landfill at Collector Road, Tarago (Goulburn LGA) under EPL 11436. The Licence permits the schedule activity for waste disposal by application to land. The licence was first issued on 5 September 2002.
- EPL Condition L3.1 states that 'any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits". Within the referenced table "N/A" has been applied to all rows for "Other Limits".
- EPL Condition L3.3 states that "The Licensee must not exceed the maximum landfill input rates in the table below'. The referred table details that the annual landfill input rate for putrescible regional waste received by road is 90,000 tonnes per annum; putrescible waste received by rail from Sydney is limited to 900,000 tonnes per annum; and the input rate received as a residue waste from Woodlawn Alternative Waste Treatment (AWT) is limited to 100,000 tonnes per annum.
- On 10 June 2021, the EPA received from Veolia the Independent Environmental Audit (IEA) Report 2021, carried out by Ramboll Australia for the Woodlawn Bioreactor (EPL 11436) and Crisps Creek

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Noting that regional waste must be trucked to the site, this supports community and CLC assertions that Veolia is currently running more than the reported number of trucks to the site, and indicates the likelihood of future increases in trucking movements along Veolia's haulage routes.

As noted above, trucks travelling the transport routes from Eurobodalla/Bega, Goulburn-Mulwaree, Upper Lachlan and Yass Valley are all required to pass through the centre of Tarago to get to the site. Trucks from Goulburn-Mulwaree, Upper Lachlan and Yass Valley pass through two school zones on their journey - in Tirannaville and then Tarago. In the centre of Tarago, truck movements during school drop-off and pick-up times are particularly dangerous. Bus stops are located on both sides of the main roads through town to accomodate buses travelling in different directions (to schools in Braidwood, Goulburn, and Bungendore as well as to connect with smaller buses conducting runs to properties throughout the local community). Because children travel to schools in various different areas, buses leave and arrive at different times which results in children getting on/off buses over an extended period of time in the mornings and afternoons. The centre of Tarago is a high pedestrian zone and during drop-off/pick-up times children can be waiting and playing on both sides of the road at the same time as cars are delivering children to the bus stops and haulage trucks are passing through town. Residents note that many vehicles do not adhere to the 60km/hour speed limit where the bus stops are located, and trucks are of particular concern (note the bus stops are located **outside** of the 40km/hour Tarago Public School zone). In addition, it is impossible for trucks to negotiate the turn onto Tarago road in the centre of town without cutting across the oncoming lane, and this regularly results in dangerous encounters.

Veolia's EIS acknowledges that *"public safety as a result of truck movements along Tarago Road and Bungendore Road was a significant concern raised by stakeholders"* (Social Impact Assessment, B.4). Residents already feel the roads are unsafe and that truck movements are the main contributing factor. Yet there seem to be few measures proposed to mitigate these concerns, with Veolia emphasising throughout the consultation process that they are not planning to make changes to waste volumes. This fails to properly acknowledge the likely impacts associated with:

- increased construction truck volumes during construction;
- additional truck movements associated with the projected waste volume increases modelled in the EIS;
- proposed additional transport requirements for IBAA reuse;
- contingency measures for transport of leachate offsite;
- the potential need for hazardous APCr to be transported offsite should this hazardous waste not be deemed suitable for storage within the Sydney Water Catchment area; and
- several other developments and operations that will result in a significant increase in truck movements along Veolia's haul routes.

For example, the EIS promotes the reuse of IBA as a significant consideration to justify the facility's legitimacy as a waste recovery process, and states "Veolia's objective is to achieve reuse of the IBAA in the construction sector" (Woodlawn ARC Environmental Impact Statement, page 42). However, the EIS makes the assumption that the additional 20 truck movements per day (2 movements per hour during peak times) (Traffic Impact Assessment, page34) required for IBAA reuse will be assessed for feasibility and incorporated into management strategies in the future (Traffic Impact Assessment, page 35). The Traffic Impact Study also makes no mention of the potential requirement to transport excess leachate offsite (which is detailed in the surfacewater/groundwater studies), *"For example, offsite disposal to a licenced liquid waste facility or treatment in the existing on-site leachate treatment plant (pending treatment suitability assessment) could be considered as contingency disposal approaches."* (Appendix F, Woodlawn Encapsulation Cell Design Report, page 35), Nor does it discuss the potential requirement for APCr removal should it be deemed inappropriate to store this waste onsite. Additionally, the study fails to properly account for the cumulative impact of Veolia's additional trucking movements in conjunction with other State Significant Developments and significant road users, namely:

- Quarry trucking movements
- Blind Creek Solar Farm
- Develop mine operations
- Gundary Solar Farm
- Merino Solar Farm
- Bungendore High School
- Goulburn Poultry Processing

A surface and groundwater assessment that includes:

- **an assessment of potential surface and groundwater impacts associated with the development, including potential impacts on watercourses (Crisps Creek and the Mulwaree River sub-catchment), riparian areas, groundwater, and groundwater dependent communities**
- **a detailed site water balance including a description of the water demands and breakdown of water supplies, any water licensing requirements, identification of an adequate and secure water supply for the life of the project and details of how the proposal will interact with the existing water management system for the Eco Precinct**
- **details of the stormwater/wastewater management system including the capacity of the onsite detention system(s), onsite sewage management system and measures to treat, reuse or dispose of water**
- **demonstration of a Neutral or Beneficial Effect on water quality in accordance with State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011**
- **a detailed flooding assessment**
- **a geotechnical assessment of land capability, ground stability and soil suitability for the development, including the placement of air pollution control residues**
- **a site contamination assessment in accordance with relevant EPA guidelines**
- **description of the proposed erosion and sediment controls during construction**
- **details of all soil and water management, mitigation and monitoring measures.**

The Woodlawn ARC EIS does not adequately address the SEARs requirements in regard to soil and water. Items of concern are listed below. Due to time constraints associated with reviewing the extensive EIS documentation and providing a response within the public exhibition period, concerns are listed in no particular order.

- There do not appear to be baseline soil measurements for the reference facility taken pre- and post-operation. Contamination of surrounding land is a significant concern for the rural community. What are the proposed measures for soil testing? What soil measurements can be provided for reference facilities located in agricultural production areas to demonstrate the facility is safe to local agricultural production? Tait et. al. identifies that bioaccumulation of toxins in the soil is a major risk pathway for food chain contamination leading to illness and recommends these facilities not be placed near areas of food production.[1] Veolia must provide soil test data for a like facility to demonstrate the absence of agricultural impacts. Emerging research demonstrates these facilities are the source of POPs contamination of European farming land.[2]

Reference:

1. The health impacts of incineration - a systematic review, Tait et al., 2019, Australian and New Zealand Journal of Public Health.

2. The hidden impacts of incineration residues - Case Study, 2019, ToxicoWatch

- “Veolia Environmental Services (Australia) Pty Ltd (Veolia) owns and operates the Woodlawn Eco Precinct (the Eco Precinct), located approximately 50 km south of Goulburn and 70 km north of Canberra.” (Appendix U, Groundwater Impact Assessment, page ES.1)
  “approximately 50 km south of Goulburn and 70 km north of Canberra.” (Appendix U, Groundwater Impact Assessment, page 1)
  “The Eco Precinct is located on Collector Road, approximately 6 km west of the village of Tarago, and 50 km south of Goulburn, NSW.” (Appendix U, Groundwater Impact Assessment, page 5)
  “The Eco Precinct is served by the Crisps Creek IMF near the village of Tarago. Crisps Creek IMF is approximately 6 km to the east of the Eco Precinct (8.5 km by road), ...” (Appendix U, Groundwater Impact Assessment, page 1)

  As with other EIS documentation, the distance of the site from major population centres is misrepresented in the Groundwater Impact Assessment. For the purposes of water assessment, direct path distances should be stated. Instead, the document states the site is 50km from Goulburn (it is 35km) and 70km to Canberra (it is 50km to the city centre and 40km to ACT suburbs).
  Reference to the distance of the Crisps Creek IMF by road makes it clear the authors are aware of the difference in road/direct path distances, and are making the deliberate decision to provide road travel distances that inflate the perceived distance of the site from major population centres).

- The document makes numerous references to the leaking and seepage from Woodlawn Evaporation Dams (in particular, ED1) that has infiltrated groundwater and resulted in contamination from heavy metals etc. The report notes the likelihood that groundwater discharges into Crisps Creek. It also notes that contamination is evident in Crisps Creek, which feeds into the Mulwaree River, and forms part of the Sydney Water Catchment (ultimately feeding into Lake Burragorang/Warragamba Dam). The report indicates that cracking in the base of the dam is likely responsible. No remediation work is proposed to the dams in this document to protect groundwater assets, Crisps Creek and the Sydney Water Catchment.

  “The evaporation dams have been shown to leak via preferential flow pathways to the north-east via the underlying colluvium.” (Appendix U, Groundwater Impact Assessment, page ES.2)

  “2.2.1 Evaporation dams – Two evaporation dams (ED1 and ED2) were constructed between 1987 and 1991 in the north-west corner of the Eco Precinct to hold water from the former open cut mine workings, water from underground mining operations, and runoff from the waste rock dumps (AECOM 2017). The evaporation dams are still present and are shown in Figure 2.1. The dams are not lined and are currently still used to store water associated with the mine workings and captured site surface water (AECOM 2017, Golder 2022a). The dams are 3–4 m deep and cover an area of 69 hectares (ha).
  The dams were constructed across a broad, shallow drainage gully (Golder 2022a). A clay material, which could be natural or imported, comprises the base of ED1. This has an average thickness of 1.5 m and a hydraulic conductivity of 1x10-9 m/s (8.6 m/d) (AECOM 2017). There have been no works to treat the floor of these dams (ie compaction or provision of any liners), and historical drying of the dams may have caused surface cracking in the base resulting in possible groundwater migration pathways. In addition, the area underlying ED1 was used for ‘borrow pits,’ where material was excavated for use and later backfilled and compacted. AECOM (2017) reports that the water quality of the dams comprises acidic and high salinity water with elevated total metal concentrations including aluminium, cadmium, copper, iron, manganese and zinc. This acid and metalliferous water quality forms due to the exposure of sulfide minerals to air, resulting in their oxidation.
  AECOM (2017) assessed the integrity of the dams and found seepage has occurred from both dams, traveling as far as 450 m from ED1 and 900 m from ED2. This leakage has migrated below the dam walls in the underlying colluvium/alluvium to the north and north-east. Despite the low permeability of the dam floors, seepage from ED1 and ED2 has occurred via preferential pathways likely caused by naturally higher permeability sediments (ie areas with more sand), and pathways created by old boreholes and/or borrow pits. Discrete areas of higher permeability material and/or areas of increased saturated porosity have been identified via monitoring bore drilling (Earth2Water 2010) and electromagnetic survey to 6 m deep (AECOM 2017). Seepage from the dams is influenced by hydraulic head within the dams, and results in slow migration from the dams.
  Review of historic bore data indicated multiple bores immediately adjacent to the dams in the colluvium/alluvium and weathered rock have been artesian, resulting in shallow groundwater and dam seepage potentially presenting at surface. AECOM (2017) propose these were artificial artesian conditions that originated in response to hydraulic loading and/or induced recharge when the evaporation dam levels were high.(Appendix U, Groundwater Impact Assessment, page 6)

  “Based on the topography and the available water level data, the water level contours wrap around Crisps Creek suggesting that the creek is a potential groundwater discharge feature for the fractured rock groundwater system.” (Appendix U, Groundwater Impact Assessment, page 33)

  “Groundwater in the alluvium/colluvium and weathered rock around the evaporation dams mimics surface topography, flowing towards watercourses and other low points in the topography. The contours are strongly influenced by leakage from the two evaporation dams, ED 1 and ED2. The shallow groundwater flow direction is towards both Crisps Creek to the north-east and Allianoyonyiga Creek to the west.” (Appendix U, Groundwater Impact Assessment, page 33)

"There are two known groundwater discharge locations associated with the shallow colluvium. The closest feature is a seep on Allianoyonyiga Creek, located at the contact between the fractured rock and the colluvium. The seep was observed within the channel of Allianoyonyiga Creek for approximately 20–50 m (Niche 2018). Surface water quality analysis suggests a groundwater contribution from Allianoyonyiga Creek in the vicinity of ED2 (Niche 2018). There is also a spring to the north of Collector Road 750 m fromsite, adjacent to Crisps Creek (AECOM 2017). The spring is within the colluvium, but is dammed and presumably comprises water from both groundwater and overland flow." (Appendix U, Groundwater Impact Assessment, page 36)

"Historic stockpiling, acid mine drainage, underground storage tanks, sediments ponds, tailings dams and evaporation dams have impacted groundwater quality on a local scale (Golder 2022a)... Review of the fractured rock groundwater shows exceedances of the 95% ecological species protection levels reported in ANZG (2018) for arsenic, cadmium, copper, lead, manganese and zinc." (Appendix U, Groundwater Impact Assessment, page 36)

"The evaporation dams have been shown to leak via preferential flow pathways to the north-east via the colluvium. Historic artesian conditions have been observed around the perimeters of these dams, suspected to be caused by hydraulic loading from stored water in each of the dams (AECOM 2017). It is proposed that the colluvium/alluvium near Crisps Creek is hydraulically connected with groundwater migrating from the colluvial/alluvial system to the south in the vicinity of ED1. (Appendix U, Groundwater Impact Assessment, pages 39-40)

"Locally, the watertable is elevated in the area of the evaporation dams, due to long-term seepage from the dams to the watertable in the colluvium/alluvium. As seen in Figure 5.5, the shallow groundwater flow direction in the colluvium/alluvium in the dam area flows radially from the dams to the north-east, towards Crisps Creek, or to the west, towards Allianoyonyiga Creek." (Appendix U, Groundwater Impact Assessment, page 44)

"The water stored in the evaporation dams is typically acidic, saline and has high levels of dissolved metals and sulfate (AECOM 2017). Subsequently, groundwater quality near the evaporation dams has similar water quality.(Appendix U, Groundwater Impact Assessment, page 46)

"Water quality at SP2-MW1, Spring 2 site and Crisps Creek generally exceeds the default guideline values for copper, lead (however sometime samples collected from Crisps Creek are below the guideline value) and zinc." (Appendix U, Groundwater Impact Assessment, page 46)

"water stored in ED1 is seeping slowly to the watertable, which is elevated in the ED1 area;...

- the groundwater flow direction in this area is from the south/south-west (ED1) towards Crisps Creek. Groundwater flux through this area is estimated to range from 100 kL/yr (assuming low hydraulic conductivity lithology such as that intercepted at MB26S) to 1,100 kL/yr (assuming higher hydraulic conductivity material such as that intercepted at MB10);
- groundwater salinity and sulfate concentrations reduce with distance from ED1;
- Crisps Creek is thought to receive surface water runoff (overland flow) and some shallow groundwater discharge from the north and the south/south-west; and
- the Spring 2 site is a dam constructed on a tributary to Crisps Creek and is thought to intercept shallow groundwater, as well as receiving overland flow, which is supported by the results of laboratory water quality analysis." (Appendix U, Groundwater Impact Assessment, page 53)

> "Available information suggests the clayey sediments underlying ED1 are saturated, receiving seepage from ED1 through historical operation of the dam. The applied load from the encapsulation cell on the sediments has the potential to consolidate the clayey sediment, causing the water pressure (groundwater level) to rise and altering the local groundwater flow regime." (Appendix U, Groundwater Impact Assessment, page 69)

- The document advises that the encapsulation cell load has the potential to cause water pressure (groundwater) to rise and alter the local groundwater flow. Even after mitigation, this risk appears to be assessed as medium.

> "The applied load from the encapsulation cell on the sediments has the potential to consolidate the clayey sediment, causing the water pressure (groundwater level) to rise and alter the local groundwater flow regime." (Appendix U, Groundwater Impact Assessment, page ES.2)

- The report acknowledges the high-risk potential for the encapsulation cell and associated evaporation pond to contaminate groundwater and/or result in loss of storage and structural damage to an aquifer:

> "The encapsulation cell and the associated evaporation pond could be considered a high-risk activity as it is: an activity with the potential to contaminate groundwater or result in unacceptable loss of storage or structural damage to an aquifer."(Appendix U, Groundwater Impact Assessment, page16)

- The report emphasises that one mitigator to the potential impacts of the proposed development on the area's groundwater is that the Woodlawn site is a "zero discharge site", and that process water and other contaminants will be prevented from discharging into the receiving environment. This information is contradicted by water testing data and statements confirming the seepage of water and contaminants from the existing evaporation dams. Given the evidence that zero discharge is not being maintained, this seems to be an insufficient basis for the water management strategy to ensure environmental protection.

  "the water management strategy for the project is based on a number of water efficiency measures and a commitment to maintain zero process water discharge from the project site." (Appendix U, Groundwater Impact Assessment, page ES.4)
  "7.2 Avoidance and mitigation measures – Veolia has adopted several leading practices to produce a project design that avoids and minimises impacts to water assets. The key leading practices adopted to minimise impacts to water related assets includes:
    - double lining the encapsulation cell to prevent seepage from the encapsulation cell to surface water or groundwater;
    - leak detection and collection system built into the foundation of the encapsulation cell to prevent seepage to surface water or groundwater;
    - isolating the encapsulation cell from ED1;
    - concrete sealing of the ARC bunker;
    - commitment to a nil discharge site; and
    - utilisation of rainwater and associated runoff captured within the development footprint and recirculating excess water within the water management system to limit the demand on the Willeroo borefield groundwater supply.(Appendix U, Groundwater Impact Assessment, page 62).

- "The water management strategy for the project is based on: ...
  - implementing a leak detection monitoring and management system at the encapsulation cell;" (Appendix U, Groundwater Impact Assessment, page ES.4)

  The report states that leak detection monitoring and management (double liner and leak detection system) will be used at the encapsulation cell. Will the encapsulation cell leachate pond also be double-lined with leak detection monitoring and management? Will ED1 also be double-lined with leak detection monitoring and management? As ED1 is the overflow provision for leachate from the IBA pond and encapsulation cell, it would be inconsistent for the ponds/dams to be subject to different environmental protection measures.

- "The water management systems include controls that separate clean and dirty water. Dirty water and leachate are managed using in a designated system that includes evaporation ponds to manage the build-up during wet periods. The process water system will utilise potentially contaminated stormwater runoff captured in the IBA area stormwater system and recycled process water that could comprise a mixture of raw water, brine and return water from the wash down and steam cycle systems. Under certain circumstances (such as extended wet weather) there may be surplus process water that requires management via dewatering to ED1. This contingency arrangement will ensure that all contaminated stormwater or recycled process water is managed in either the process water system or ED1, with no discharges to the stormwater system expected. The proposed evaporation pond will be double lined with a leak detection layer."(Appendix U, Groundwater Impact Assessment, page 9)

  "The existing Plant Collection Dam (PCD) will capture run off from the ARC, and is shown onFigure 2.3. The PCD was originally established to manage water from the ore processing plant. The PCD currently has a contributing catchment area of 31.3 ha that comprises: the former processing plant area, Woodlawn BioEnergy Power Station, the site administration complex and various roads and unused areas. Water collected in the PCD dam is Acid Mine Drainage (AMD) affected and is known to have a low pH and elevated salinity levels and metal concentrations. Currently all water collected in the PCD is pumped to ED1." (Appendix U, Groundwater Impact Assessment, page 9)

  Which evaporation pond will be double-lined with a leak detection layer? Is this the encapsulation cell leachate pond only? Is it the encapsulation cell leachate pond and the IBA leachate pond? Or will ED1 also be double-lined with leak detection (since it is the dewatering mechanism for the IBA pond and the encapsulation cell pond)?

- "The groundwater monitoring network is proposed to "provide an early indication of potential impact to sensitive receptors, including Crisps Creek. Monitoring of the groundwater monitoring network will continue, and the network will be expanded to identify potential impacts from project activities." (Appendix U, Groundwater Impact Assessment, page ES.4)

  What investigation has been made into how this system failed to prevent pollution from onsite evaporation dams and resulting contamination to prevent a recurrence of the problem with the proposed development? What mitigation and specific actions are proposed to prevent recurrence?

- "The former mine workings extend below Evaporation Dam 1 (ED1), at depths of around 690 mAHD (Parsons Brinckerhoff 2012), however the mine is currently in care and maintenance mode." (Appendix U, Groundwater Impact Assessment, page 5)

  Develop have purchased the mine with the intention to resume mining operations. What impact will this have on the groundwater assessment, particularly during periods of extended drought and bore dependency, especially noting Veolia's agreement to provide water to the mine.

- "The project life is anticipated to be in excess of 25 years, however, will be dependent on a range of factors, which may include future changes in waste policy and legislation, advances in technology, and availability and suitability of waste feedstock sources in the future." (Appendix U, Groundwater Impact Assessment, page 7)

  Veolia appears to be misleading the community about the extent of the project. If a period of more than 25 years operation is planned, modelling for all SEARs requirements should be completed for the extended lifespan of the project. We note that up until two days prior to the release of the EIS documents, Veolia's website still indicated that the project would have a lifespan of 30 years.

- Table 3.3 State Groundwater Quality Protection Policy (1998) principles –
  "Groundwater chemistry has been assessed and groundwater pollution will not occur.";
  "The former mine site is degraded and this project includes some rehabilitation activities including the repurposing and relining of ED1 to control leachate and leakage." (Appendix U, Groundwater Impact Assessment, page21)

  Statements made in this table appear inconsistent with information presented in the remainder of the document and the broader EIS. Information provided throughout the Groundwater Impact Assessment indicates seepage from ED1 is occurring and has contributed to elevated pollutant levels in groundwater bore monitoring sites and Crisps Creek. No mention appears to be made elsewhere about works to reline ED1 to control leachate and leakage, other than the lining proposed for the encapsulation cell and encapsulation cell leachate pond. Additionally, the Encapsulation Cell Design Report (Appendix F) does not refer to lining works planned for Evaporation Dam 1. Will the remainder of ED1 also be double-lined with leak-detection monitoring?

- 6.3.3 Hydraulic conductivity and bore yield – "...The CRT commenced on 20 August and ran for approximately 74 hours, with recovery commencing on 23 August. The test pumping rate fluctuated between 14.5 and 15.5 L/s and was unable to be kept at a constant rate. Drawdown data was only obtained for the first 2 hours and 40 minutes of the CRT, as the data logger was unable to be set any lower, due to proximity of the pump intake. It is predicted that after 16 hours, the groundwater level was at or below the pump intake and the bore would have been cavitating. Consequently, a safe yield of 15 L/s cannot be maintained long term and hence only the early drawdown data was used to predict the safe yield of this production bore. The recovery test data was unable to be recorded. Due to COVID restrictions and access constraints, manual measurements of depth to groundwater could not be recorded during the pumping test. (Appendix U, Groundwater Impact Assessment, page 58)

  Will the tests be repeated to completed to verify the outstanding items?

- Table 7.1 Potential groundwater impacts from Project activities – "wastewater ponds and water storage" have the potential effect of "perched watertable, seepage" and notes that there are no receptors potentially impacted, and that the assessment criteria is "not applicable for this project, see below". (Appendix U, Groundwater Impact Assessment, page 64)

  Why is seepage not applicable given the existing seepage from ED1 and its impact upon localised groundwater and Crisps Creek?

- "ii Wastewater ponds and water storage – Water storage facilities have the potential for stored water to seep through to the watertable. As part of construction of new water storages/facilities, all ponds will be lined and bunded prior to construction to reduce water seepage.

  Existing water storages, such as the evaporation dams and PCD, will continue to be used for water management purposes. These activities are unchanged from the current development and are not considered separately in this assessment. The Eco Precinct operates as a nil off site discharge site, and this will remain unchanged." (Appendix U, Groundwater Impact Assessment, page 66)

  It is unclear from the EIS what seepage containment measures will be implemented for each of the ponds/ leachate dams etc. Information is scattered, non-specific, and at times, contradictory. Will ED1 be double-lined with leak monitoring system? Given the ongoing issues with seepage from this dam, the resulting contamination, the date of construction and identified integrity issues, and the role proposed for it in

dewatering of the APCr leachate pond and IBA leachate pond, it seems reasonable to ensure this dam also be double-lined with leak detection system. Will the APCR leachate pond be double-lined with leak detection system? Will the IBA leachate pond be double-lined with leak detection system? Will the ARC pond be lined and in what way?

Additionally, given the role that ED1 will play in the new facility, and the certain probability that contaminants will be transferred to ED1 with any dewatering of the APCr/IBA leachate ponds, it is appropriate that ED1 be maintained with the same protection measures provided to both those ponds.

The statement that the Eco Precinct operates as a nil off site discharge site also appears to be more of an aspirational aim given the copious evidence presented in the report that discharge is occurring.

- Dedicated storage areas for fuel and reagent, and runoff containment systems will be developed during the construction phase and maintained over the operational period while potential pollutants remain on site.(Appendix U, Groundwater Impact Assessment, page 66)

These details should be included in the EIS.

- "8.3 Cumulative impacts – The closest water affecting activity that has the potential to contribute to cumulative impacts on groundwater assets is the Woodlawn Mine operation (currently in care and maintenance). As discussed in Section 2.2, the historical mining activity has included open cut mining and underground mining, located below the Eco Precinct.
  Should mining resume, the planned underground mine workings will be located approximately 150 m laterally offset from the encapsulation cell and approximately 500 mbgl. The mining operation (historical or future) would result in groundwater drawdown within the hard rock /fractured rock groundwater system, which is already depressed due to the open cut mine void. However, due to the low permeability of the geology, the drawdown is localised.
  Cumulative impacts are not assessed further, as the potential impacts of the project on the water environment and associated assets are considered negligible to minor and, in the vicinity of former underground workings, are associated with the shallow alluvial/colluvial groundwater system." (Appendix U, Groundwater Impact Assessment, page 76)
  Veolia requires 90 ML/yr for the proposed ARC project, and EMM (2021) predict the annual groundwater demand will be between 53-90 ML/yr, (ie 60-100% of demand), depending on climate conditions. Rainfall capture and reuse will supplement the water demand when available. Combined with the additional demand for the existing operations at the Eco Precinct the total water demand is 146 ML in average years, and up to 300 ML in severe drought conditions.
  Veolia holds sufficient groundwater licence volume to cater for site demands, even during severe drought periods. Veolia is the sole owners of the water licence allocation and have an agreement with the mine operator to provide them with water, if required. (Appendix U, Groundwater Impact Assessment, page 85)

Has the impact of providing the mine with water been assessed in regard to the proposed development (e.g. supply sufficiency etc)? How much water have Veolia agreed to provide the mine? What is the mine's likely consumption? (Given Develop have indicated their intention to restart mining operations).

- Table 9.2 Assessment of unmitigated potential impacts or events (Appendix U, Groundwater Impact Assessment, page 79)

The risk analysis overall ratings are noted, but not the individual scores for 'likelihood' and 'consequence'. These are necessary for an understanding of how the risk ratings were arrived at and mitigated.

- "Table 10.1 Management and mitigations summary table – Make-good arrangements, such as:
  - provision of supplementary water to offset loss in water supply
  - Incorporate groundwater monitoring in the Willeroo borefield area into the overall water monitoring and management program, either through the use of existing monitoring bores and/or installation of additional monitoring bores.
  - Hydraulic loading in ED 1 causing seepage at a faster rate: Conduct hydraulic loading analysis and review of requirements for groundwater seepage interception system, as part of detailed design of the encapsulation cell." (Appendix U, Groundwater Impact Assessment, page 80)

How will Veolia provide the volume of supplementary water required to supply the proposed operations in the event that bore drawdown is greater than predicted? Where would this be sourced from?

What specific actions will Veolia implement in the event that drawdown impacts third-party bores?

Hydraulic loading in ED1 remains a medium (6) risk following mitigation, yet no mention of mitigation through a double-liner and leak detection system is made for ED1. Why?

- "10.4 Water management plan – The water management plan (WMP) will be updated for the project, encompassing both the construction phase and the operational phase of the project. The WMP will document the proposed mitigation and management measures for the approved project, and will include the surface and groundwater monitoring program, reporting requirements, spill management and response, site specific trigger levels, trigger action response plan (corrective actions), contingencies, and responsibilities for all management measures." (Appendix U, Groundwater Impact Assessment, page 82)

  This should be completed now as part of the EIS assessment process.

- "Groundwater quality performance triggers around the encapsulation cell will be based on statistical analysis of the reported ranges in baseline concentrations of identified analytes of concern. This analytical suite will likely include pH, salinity concentrations, and concentrations of other analytes such as arsenic, aluminium, cadmium, copper, sulfate, iron, zinc, as well as any additional analytes specific to the ash leachate composition from the APCr. The Ash Management Study (WSP 2021) analysed ash compositions from existing global energy from waste processes and recorded the following metals at high levels: antimony, arsenic, cadmium, chromium, lead, mercury and nickel." (Appendix U, Groundwater Impact Assessment, page 83)

  What provisions will be made to measure other contaminants in APCr and IBA - e.g. dioxins?

- As part of the update the WMP, Veolia will review and update of the water monitoring program: - > ensuring adequate monitoring for potential:
  - surface expression of seepage from the encapsulation cell; and
  - groundwater discharge and/or increase groundwater pressure/level in the encapsulation cell area greater than that inferred in this groundwater assessment" (Appendix U, Groundwater Impact Assessment, page 83)

  How will monitoring for seepage and groundwater disturbance translate to concrete action to prevent and rehabilitate pollution? The assessment seems to lack specific actions that translate ongoing monitoring into risk mitigation and pollution prevention.

- Aquifer Interference Assessment Framework - Assessing a proposal against the NSW Aquifer Interference Policy – step by step guide
  Table 3. Determining water predictions in accordance with Section 3.2.3 (complete one row only – consider both during and following completion of activity)

  Why is the development not identified as a State Significant Development for the purposes of assessment? (The table is completed for 'other processes').

- The NSW EfW Policy Statement requires proponents to compare their facility to a 'like' facility. The Woodlawn facility is a remote facility and will need to provide all of its own services. The Staffordshire facility is not a remote facility. It discharges waste water to town reticulated waste water disposal.

- The water assessments for the proposed facility note the extensive role that ED1 will play in water management, but simultaneously note the problems with seepage from ED1 and how its operational effectiveness may be impacted by construction of the encapsulation cell. Some concerns are:

  "Water accumulation in ED1 is managed via natural and assisted evaporation, which is a gradual process that varies seasonally. Accordingly, the operational effectiveness of ED1 to manage surplus water from the PCD and Waste Rock Dam is a function of the dam's ability to store water during extended wet periods and manage water accumulation via evaporation." (Appendix V, Surface Water Impact Assessment, page 30)

  How much is seepage contributing to the water loss in ED1?

- "The operational effectiveness of ED1 may be impacted by the construction of the encapsulation cell within ED1 and other aspects of the project." (Appendix V, Surface Water Impact Assessment, page 26)
  "ED1 is an evaporation dam that is currently used to manage contaminated water from the PCD and the Waste Rock Dam (see Section 4.4). Under the current operating arrangement, surplus water from the PCD and Waste Rock Dam is pumped to ED1 to prevent overflows to the receiving environment." (Appendix V, Surface Water Impact Assessment, page 26)
  As noted in Figure 5.2, under certain circumstances (such as extended wet weather) there may be surplus process water that requires management via dewatering to ED1. Water balance modelling undertaken for the Reference Design estimated that up to 4 ML/year from the IBA Pond and 7 ML/year of surplus brine may need to be dewatered to ED1 in some years." (Appendix V, Surface Water Impact Assessment, page 45)

  Noting the reduced capacity of ED1 to manage pumped inflows and that Veolia was issued an Official Caution on 26 August 2022 for exceeding the 0.5m freeboard limits at its storage dams and diverting

stormwater in contravention of its consent, what specific measures are proposed prevent a dam spill? (https://pp.planningportal.nsw.gov.au/major-projects/projects/woodlawn-bioreactor-expansion)

- Achieving a NorBE on the operational effectiveness of ED1 is a water management objective for the project. A NorBE can be achieved if one of the following criteria is met:

    1. the cumulative changes due to the project result in lower water levels in ED1, for a full range of weather conditions; or

    2. the cumulative changes due to the project result in higher water levels in ED1, but there is no impact to the operational effectiveness of the dam, in that it can still receive pumped inflows from the PCD and Waste Rock Dam for a full range of weather conditions. (Appendix V, Surface Water Impact Assessment, page 49)

Does this assessment also include predicted pumped inflows from the APCr leachate pond and IBA pond?

- Table 6.1 Impact mechanisms and water balance approach

  Mechanism 2 – discharges from the process water system. Water balance modelling undertaken for the Reference Design estimated that up to 4 ML/year from the IBA Pond and 7 ML/year of surplus brine may be dewatered to ED1 in some years. It is noted that these are upper bound estimates and will only be required in some years (see Section 5.5.2 for further information). (Appendix V, Surface Water Impact Assessment, page 49)

  Mechanism 3 – reduced pumped inflows from the PCD. Stormwater harvesting will be incorporated into the proposed ARC and IBA area stormwater systems (see Section 5.4). This will reduce (relative to existing conditions) the runoff volume to the PCD. The lower runoff volumes to PCD will reduce the storage and evaporation capacity required in ED1 to manage pumped inflows from the PCD, thereby increasing the available capacity in the dam. It is also noted that Veolia proposes to decommission the PCD and reinstate stormwater flows from the catchment to the receiving environment (see Section 5.1.1). These future works are not considered in the water balance model as they will be undertaken separately to the ARC project. Once completed these works will be beneficial to the ED1 water balance as there will be no pumped inflows from PCD. (Appendix V, Surface Water Impact Assessment, page 49)

This water balance assessment seems to be missing the inputs from the APCr leachate pond and the rock dam. PCD inputs are accounted for, however mention is made to future works to reinstate the stormwater flows to the receiving environment. When is completion planned for this work? We note that the PCD (ARC pond) is designated to receive flow from firewater, spills and leaks within the ARC area and so will receive contaminants during the operational life of the ARC. If these works will not be completed whilst the ARC is in operation, the measures to reinstate stormwater flows will have no impact on the capabilities of ED1 to manage stormwater flows during the operational lifespan of the ARC as PCD stormwater overflow will still be dewatered to ED1.

- 6.1.3 Minor change to final landform
  A minor change to the combined footprint of the encapsulation cell and leachate pond was made following the completion of the WSP water balance model in late 2021. The change relates to a revision to the leachate pond design which resulted in a larger footprint that increases the reduction in ED1 storage volume from approximately 30% to 33% and evaporation area from approximately 32% to 34% (at full supply level). Figure 6.1 shows ED1 level storage and level surface area curves for the: existing dam, future scenario (as applied to the water balance model) and future scenario (based on revised footprint). It is noted that the future scenario revised footprint curves are used in Section 5.7.1 to describe the changes in ED1.
  The water balance modelling was not updated to incorporate this minor change to the project footprint as the model results demonstrated that there is significant unutilised capacity in ED1 (ie only 70% of future capacity of ED1 would be utilised). Hence, a minor reduction in the storage and evaporation area would not change the assessment conclusion that there will be no impact to the operational effectiveness of ED1, in that it can still receive pumped inflows from the PCD and Waste Rock Dam. (Appendix V, Surface Water Impact Assessment, pages 51, 52)

This assessment appears to have been made without factoring in dewatering from the IBA leachate pond and APCr leachate pond. Will the inclusion of these volumes result in any changes to the assessment?

- “IBA area stormwater system (2.2 ha) – this system will manage stormwater runoff from the IBA area which may be potentially contaminated. Accordingly, a stormwater capture and harvesting system is proposed that has capacity to capture all runoff during a 1% Annual Exceedance Probability (AEP) event.” (Appendix V, Surface Water Impact Assessment, page ES.3)
  “The IBA area stormwater system will manage runoff from the IBA area, which has an area of approximately 2.2 ha. IBA will be stored in uncovered stockpiles on the pad. Hence, stormwater contact with IBA will occur. The water quality of stormwater runoff from the IBA area is unknown but is assumed to be potentially contaminated. Accordingly, the IBA stormwater system seeks to capture all runoff from the IBA area. Captured water will be primarily used with in the IBA area for dust suppression but as a contingency, can also be dewatered to ED1 to avoid an overflow. This is consistent with Water Management Objective 2a (separation of potentially contaminated water from stormwater runoff – see Section 5.1.2).” (Appendix V, Surface Water Impact Assessment, page 40)

"Water captured in the IBA Pond will be used within the IBA area for dust suppression. This is expected to be an effective means to manage water accumulation between September and March, when evaporation rates generally exceed rainfall (see Section 4.1.1). There will be less opportunity to manage water accumulation in the IBA Pond between April and October, when rainfall typically exceeds evaporation. If required, surplus water from the IBA Pond can be dewatered to ED1 to avoid overflows due to water accumulation. This is only expected to be required to restore basin capacity if a significant rainfall event or a prolonged period of above average rainfall occurs between April and October.
Drainage will also be established to divert runoff from any upgradient areas around the IBA area. These drainage systems will have a 1% AEP capacity to ensure there is no stormwater ingress into the IBA area stormwater system." (Appendix V, Surface Water Impact Assessment, page 40)

How often is dewatering to ED1 predicted to be required under these design conditions? (Best and worst case scenario).

- "Overflows from the ARC Pond will occur occasionally (approximately once per year)." (Appendix V, Surface Water Impact Assessment, page 40)

What is the maximum number of overflows predicted to occur in a single year?

- Figure 4.6 Existing water management system functionality (Appendix V, Surface Water Impact Assessment, page 28)

The ED1 Coffer Dam is listed as a separate entry with no interaction with the other dams. However, water has previously been pumped from the Coffer Dam (NSW EPA Prevention notice #3503885, 24/10/22) into ED1. Why is this interaction not noted?

- The former mine workings extend below Evaporation Dam 1 (ED1), at depths of around 690 m AHD. (Parsons Brinckerhoff 2012). (Surface Water Impact Assessment, page 4)
Comparison of the proposed location of the Encapsulation Cell to the planned subsurface mine workings indicates that the closest approach of the planned workings is approximately 150 m laterally offset from the Encapsulation Cell and at a depth below ground surface in the order of 500 m. (Encapsulation Cell Design Report, page 10)

Contradictory information about the mine workings below ED1/Encapsulation cell does not inspire confidence in the assessments. What is correct?

- There seem to be a number of instances in which the report fails to meet the detailed requirements for the SEARs, for example, the water management system is described as a conceptual design that does not use specific information:

5.1.3 Reference design
The water management system described in this chapter was developed as part of the Reference Design for the project. The Reference Design has considered the operational requirements of the water management system, site constraints and addresses the three water management objectives established for this assessment (see Section 5.1.2).
The Reference Design will be further developed by the appointed engineering, procurement and construction contractor. Accordingly, the water management system is described conceptually in this chapter. Where possible, the system is described using design principles and objectives rather than specific information from the Reference Design.
It is noted that some variations to the Reference Design may be made during detailed design. (Appendix V, Surface Water Assessment, page 31)

- The report states that IBA runoff is assumed to be potentially contaminated due to contact with contaminants in the IBA material. The facility is located in an area renowned for constant, strong winds (and is co-located with a wind farm). How will contaminants in the water be treated prior to the use of runoff in dust suppression? How will spray of contaminated water be prevented from spreading to the surrounding areas? What safety measures are proposed to keep employees involved in dust suppression work, and those moving around surrounding areas, safe from the spread of contaminated spray? What monitoring/ testing will be done of surrounding soil and water to ensure that contaminants in the water used in dust suppression is not spreading to the surrounding areas? What monitoring/testing will be done to assess the spread of IBA dust and its contaminants into the surrounding areas? The report succinctly notes that IBA pond water will be used in dust suppression during suitable conditions. What conditions constitute 'suitable conditions'? When will conditions be deemed 'unsuitable'? And what measures are proposed to prevent the spread of dust on high wind days when the use of contaminated runoff as spray may be 'unsuitable'? The report indicates recycled process water will be used when IBA pond water is unsuitable - is there

enough recycled process water to fully meet the 88 kL/day suppression requirements? Is the recycled process water fully free of contaminants? Additionally, is more water required for dust suppression on days when wind evaporation rates are high?

Why hasn't testing/data from Veolia's reference facility established the levels of contamination that may be expected in IBA stormwater runoff? How is this runoff managed at Veolia's reference facility?

"IBA Dust Suppression:
The IBA area stormwater system will manage runoff from the IBA area, which has an area of approximately 2.2 ha. IBA will be stored in uncovered stockpiles on the pad. Hence, stormwater contact with IBA will occur. The water quality of stormwater runoff from the IBA area is unknown but is assumed to be potentially contaminated. Accordingly, the IBA stormwater system seeks to capture all runoff from the IBA area. Captured water will be primarily used with in the IBA area for dust suppression but as a contingency, can also be dewatered to ED1 to avoid an overflow. This is consistent with Water Management Objective 2a (separation of potentially contaminated water from stormwater runoff – see Section 5.1.2)." (Appendix V, Surface Water Impact Assessment, page 40)
"The IBA Pond will have capacity to capture all runoff during a 1% AEP event and water accumulation in the pond will primarily be used with in the IBA area for dust suppression (when conditions are suitable) but can also be dewatered to ED1 to avoid an overflow." (Appendix V, Surface Water Impact Assessment, page 40)
"The Reference Design established that the average annual water use for dust suppression will be 32 ML/year (or 88 kL/day). However, the dust suppression demand will vary seasonally in line with evaporation rates and will be lower during and shortly after wet weather." (Appendix V, Surface Water Impact Assessment, page 44)

Table 5.4 Description of process water inflows and demands
Process water uses - IBA area dust suppression - Water from the IBA Pond will be sprayed onto the IBA stockpiles to suppress dust. – There are no water quality requirements for this water use. (Appendix V, Surface Water Impact Assessment, page 44)

Why are there no water quality requirements relating to the level of contaminants in IBA pond water prior to the spray of water in a semi-open area?

- What reference data information is available for type of contaminants and their quantities in APCr leachate?

- "6.2.1 Consistency with Objective 2a – The ARC stormwater system includes a range of source controls to avoid stormwater contact with waste and to separate potentially contaminated water from stormwater runoff. Measures to contain firewater and any accidental leaks or spills that may occur are also included (see Section 5.4.3). (Appendix V, Surface Water Impact Assessment, page 53)

The SEARs requirement for NorBE requires demonstration that potentially contaminated water be separated from stormwater runoff (page 52). Firewater runoff and leaks and spills within the ARC stormwater system will result in contaminated water flows. The document fails to provide detail on how these will be managed. Readers are referred for details to Section 5.4.3 of the document, which provides only this short description of the ARC pond capacity to hold firewater volumes, without any detail on how contaminants from this or any leaks or spills will be managed.

" 4. Fire water retention and containment – The ARC Pond will be designed to contain any firewater runoff and leaks and spills that may occur within the ARC stormwater system. The Reference Design achieves this objective as the maximum firewater volume was established to be approximately one-third of the ARC Pond volume." (Appendix V, Surface Water Impact Assessment, page 39).

- "Table 6.2 Stormwater systems – comparison to best practice – ARC stormwater system (9.8 ha)... The proposed controls are also generally consistent with the guidelines that are listed in WaterNSW's website (WaterNSW 2021b) as CRP and standards. However, it is noted that these guidelines do not have specific requirements for industrial sites. (Surface Water Impact Assessment, page 54).

What measures are not consistent with the guidelines?

- NorBe: The results presented below along with the additional NorBE figures in Appendix D, page 7 (Surface Water Assessment) appear to contradict the conclusion that the proposed ARC can achieve a NorBe on water quality. The results for scenario 1 indicate that the proposed development does not meet the NorBE requirements. At best, it indicates that a NorBe would 'likely' be achieved, but only with the inclusion of swales and seepage to the ephemeral wetland to remove pollutants (but the report notes

that Water NSW guidelines indicate these calculations should not be included when performing MUSIC calculations for the Sydney Drinking Water Catchment. How does this demonstrate compliance with the NorBE requirement in the SEARs?

a) Assessment criteria
The Neutral or Beneficial Effect on Water Quality Assessment Guideline (WaterNSW 2021) provides direction on what NorBE means and how to assess it in a development application. The guideline recommends the use of the *Model for Urban Stormwater Improvement Conceptualisation* (MUSIC) for all developments with an impervious area greater than or equal to 2,500 m2. MUSIC simulates sediment and nutrient generation from land surfaces and the performance of stormwater controls and mitigation measures. The application of MUSIC modelling within the Sydney drinking water catchments is described in *Using MUSIC in the Sydney Drinking Water Catchment* (WaterNSW 2019a), which outlines the following criteria for achieving NorBE:
The mean annual pollutant loads for the post-development case (including mitigation measures) should aim to be 10% less than the pre-development case for total suspended solids (TSS), total phosphorus (TP) and total nitrogen (TN).
Pollutant concentrations for TP and TN for the post-development case (including mitigation measures) must be equal to or better compared to the pre-development case for between the 50th and 98th percentiles over a five-year modelling period. Periods of zero flow are not to be accounted for in the statistical analysis as there is no downstream water quality impact during no flow periods. To demonstrate this, comparative cumulative frequency graphs, which use the flow-based sub-sample threshold for both the pre- and post-development cases, must be provided. As meeting the pollutant percentile concentrations for TP generally also meets the requirements for TSS, cumulative frequency analysis is not required for TSS. (Appendix V, Surface Water Impact Assessment, page 55).

b) Results discussion
The water quality model results indicate that Scenario 1 (proposed project) will meet the pollutant load reductions for total suspended solids but not for total phosphorus and nitrogen or the concentration targets. The increase in total phosphorus and nitrogen loads is due to the more than three-fold increase in runoff volume from the impervious road area (see Table 6.3). Typically, roadside swales would mitigate this increase in runoff volume via infiltration. However, using MUSIC in the Sydney Drinking Water Catchment (WaterNSW 2019a) recommends that no seepage (or exfiltration) is applied to swales represented in the MUSIC model. As the recommended approach was applied to the model (see Appendix D), the results provide a conservative estimate of potential pollutant load increases due to the access road. It is expected that some runoff would be infiltrated in the swales and infiltrated water would seep slowly to the adjoining ephemeral wetland (see Figure 5.1) which would remove water via evapotranspiration and/or provide water quality treatment. A NorBE on water quality would likely be achieved if these processes were accounted for.

Scenario 2 relates to a potential future scenario where the ARC Stormwater system is integrated into a future stormwater system for the PCD catchment that overflows to the receiving environment. A stormwater control such as a constructed wetland may be established in the PCD area to achieve a stormwater management system (for the greater PCD catchment) that is consistent with industry best practice for an industrial area. Scenario 2 assesses the water quality profile associated with stormwater discharges from the access road and overflows from the ARC stormwater system. The results indicate that:

- The pollutant load reductions are achieved by a significant margin (see Table 6.3). This is due to the ARC stormwater harvesting system which will remove most runoff and associated pollutants from the water cycle.

- The concentration target results are the same as Scenario 1. This is because the ARC stormwater system will only occasionally overflow and the concentration results primarily relate to discharges from the access road, which will occur more frequently, but at lower rates. It is likely that the concentration targets will be achieved in a future PCD catchment that incorporates an appropriately sized constructed wetland (or other suitable control).

Overall, these results indicate that the ARC stormwater system can be integrated into a future stormwater system in the PCD catchment that overflows to the receiving environment and achieves a NorBE on receiving water quality. (Appendix V, Surface Water Impact Assessment, page 57)

- The Surface Water Assessment several times notes that impacts to the ephemeral wetland and other stormwater management will be managed by directing water to the Collector Road culvert inlet. The report states this culvert drains to Crisps Creek. What are the anticipated downstream impacts of directing excess runoff to the culvert?

"This culvert currently receives runoff from a 31.5 ha catchment (see Figure 4.5) and drains to the north-east towards Crisps Creek." (Appendix V, Surface Water Impact Assessment, page 37)

- **Table 8.1 Surface water management and mitigation measures**
Stormwater measures – source controls
IBA will be initially handled within the ARC building before being transported to the IBA area using methods that do not pose a stormwater contamination risk.
Stabilised APCr will be initially handled within the ARC building before being transported to the encapsulation cell using methods that do not pose a stormwater contamination risk.
(Surface Water Impact Assessment, page 60)

The Ash Management study states that IBA will be conveyed to the IBA area in a covered conveyor, but simply notes APCr will be transported to the encapsulation cell by truck or tractor. This doesn't provide sufficient detail to ensure the stormwater risk associated with APCr transport and potential spills forms an adequate source control.

- The Construction Water Management Plan and Operational Water Management Plan should be included for consideration in the EIS.

- The surface water management plan notes that "all pervious areas will be vegetated to minimise soil erosion". (Appendix V, Surface Water Assessment, page 60). Are the water requirements for establishing and maintaining vegetation of pervious areas accounted for in water usage figures?

- **Table 8.1 Surface water management and mitigation measures**
  Fire water retention and containment – • The ARC Pond will be designed to contain any firewater runoff and leaks and spills that may occur within the ARC stormwater system. The Reference Design achieves this objective as the maximum firewater volume was established to be approximately one-third of the ARC Pond volume. (Appendix V, Surface Water Impact Assessment, page 61)

  The Surface Water Assessment states on page 43 that "Overflows from the ARC Pond will occur occasionally (approximately once per year).". It notes that PCD overflows are pumped to ED1. Will all overflow water from the ARC Pond be pumped to ED1 for the entire operating life of the facility? How will contaminant seepage from ED1 be mitigated?

- Given the importance of each of the various leachate ponds, stormwater ponds and evaporation dams in the assessed management of surface stormwater and contaminated water, what measures are proposed to manage water in the event that any of the dams require repair work to be completed (with particular focus on ED1 given its role as overflow receptacle for the other ponds)?

- Appendix B of the Surface Water Impact Assessment (ED1 Water Balance, page 20) notes that Veolia was previously advised by WSP in 2017 to let ED1 dry out and reline the dam to avoid seepage:

  "WSP investigated the Veolia's strategy to use ED1 exclusively for its leachate management.
  A geomembrane lined coffer dam within the footprint of ED1, named ED1 Coffer Dam, was proposed to manage the storage and evaporation of treated leachate. By using ED1 Coffer Dam to manage leachate, the remainder of the ED1 dam will be allowed to dry up with the use of mechanical evaporators. Once ED1 is empty, it is proposed this dam will be relined to avoid seepage and used subsequently for leachate storage and management."
  Yet the EIS water assessments indicate seepage is still occurring in ED1, and the NSW EPA Protection Notice issued to Veolia on 24th October 2022 (Notice Number 3503885) indicates this seepage has been ongoing since 2017. The Groundwater Impact Assessment states:
  "There have been no works to treat the floor of these dams (ie compaction or provision of any liners), and historical drying of the dams may have caused surface cracking in the base resulting in possible groundwater migration pathways. In addition, the area underlying ED1 was used for 'borrow pits,' where material was excavated for use and later backfilled and compacted."

  How does this failure to complete recommended works to reduce pollution demonstrate that Veolia will comply with recommendations made for environmental protection in regard to the proposed development? Risk mitigation measures proposed in the EIS for early detection monitoring and leak detection are called into question when previous actions demonstrate that detection of issues does not result in effective action for remediation.

SEARS requirements

- **identification of any infrastructure upgrades required off-site to facilitate the development and describe any arrangements to ensure that the upgrades will be implemented in a timely manner and maintained; and**

- **details of existing transmission infrastructure constraints and all required transmission infrastructure upgrades, including an assessment of any impacts of any upgrade works and details of management and mitigation measures.**

The SEARS requirements for infrastructure requirements are not met.

The Woodlawn ARC Scoping Report identified the possibility that transmission line infrastructure would need upgrading for the proposed development. The SEARs outlines the need to detail "all required transmission infrastructure upgrades" and associated works, management and mitigation. This detail is not provided in the Woodlawn ARC EIS.

There is no detail on what the current capacity of the line is (besides being 66kV) nor of the connection at the Goulburn sub-station. As such there is no analysis of if the current line will support the proposed generation levels. There is also no information that Veolia have requested a report from Essential Energy to answer these questions. Based on the number of meetings Veolia have had with NSW government departments, it appears entirely reasonable that Veolia could have arranged a meeting with Essential Energy. Why was this not prioritised?

There are no indications provided of the upgrade timelines required by Essential Energy and therefore no indication if any required works would be completed by the time the incinerator comes on line. Although the report indicates that there is currently a 10m easement for the line, the standard easement for 66kV lines is 23m. Therefore, an investigation into the suitability of the line may identify that widening of the easement is required. The associated works and the cumulative impact upon landholders will reflect upon the outcomes noted in a wide array of other EIS documents, which will mean these assessments will require updating to incorporate the full impact of the proposed development.

Without the results of the detailed enquiry that Veolia are preparing for Essential Energy, no approval should be provided for the EfW facility. In fact, there should have been no public exhibition of the EIS without this information. In order to legitimise this project as an energy generator, Veolia must be able to connect the facility to the grid. Without any such connection, the project is simply a waste incinerator which sits at the bottom of the waste management hierarchy. As proposed in its current form, the Woodlawn ARC sits lower in the Waste Hierarchy than the existing Bioreactor which does feed energy back into the grid. Without comprehensive details provided as to how energy generation will be facilitated, this project is not in accordance with the NSW EfW Policy Statement nor the SEARs requirements, and should be rejected in its entirety.

Other concerns:

- Transmission line environmental and social sensitivity analysis – Introduction (page 1)
  This section again demonstrates issues with Veolia's presentation of distances to major population centres in the surrounding area. The document states Goulburn is approximately 50km from the site, but that the transmission line to Goulburn sub-station (located on the far side of the goulburn racecourse to Tarago) is 37.5km and is not a direct line. The racecourse located in Goulburn. Stating that Goulburn is "approximately" 50km from the site should not result in a 20% increase in distance. This is further evidence that Veolia has attempted to exaggerate the perceived distance of the site from major population centres such as Goulburn and Canberra.

- Introduction - *“In terms of timing, the applicant confirms that it intends to complete these works as part of construction of the project.”* (Transmission line environmental and social sensitivity analysis, page 2)
  As the applicant is not the one completing these works, this statement is meaningless unless they have a written commitment from Essential Energy or a work order in the system. The document does not identify that this is the case.

SEARs requirements:

- **a social impact assessment in accordance with the Department's relevant guidelines**
- **an analysis of any potential economic impacts of the development, including a discussion of any potential economic benefits to the local and broader community.**

The socio-economic assessment demonstrates the proposed Woodlawn ARC will have harmful socio-economic consequences for the Goulburn-Mulwaree region, dwarfing any potential positive outcomes from the proposal. Although the EIS assessment recommends mitigation and management measures for Veolia to address the identified impacts, the community cannot expect proper consideration to be given to any concerns and input they may make. The assessment also clearly demonstrates that should this proposal be approved, the community cannot expect proper consideration to be given to any concerns and input they may make. The following address some areas of concern with the conclusions drawn in the assessment and the lack of demonstrable mitigation measures for these impacts:

1. Impact on regional housing;
2. Trivialisation of community concerns;
3. Coercive use of funding; and
4. Local economy and jobs.

1. Impact on Regional Housing

- 3.5 Local housing and rental market
  On 21 June 2021 there were a total of four properties for sale and one property for rent in the local area. In the regional area, there were 183 properties for sale and 56 properties for rent, most of which were available in Goulburn (REA Group 2021). From March 2018–March 2021 the residential vacancy rate for postcode 2580, which encompasses most of the local area and regional area, has consistently remained significantly below the equilibrium level of 3.0% (SQM Research 2021) (see Figure 3.3). This indicates that there has been an undersupply of rental housing in the local area and regional area, which is reflected in the lower rates of rental tenure in the local area and regional area compared to NSW. *(Social Impact Assessment, page 22)*

  As detailed above, Veolia acknowledges there is already a housing supply crisis in the region and that the residential vacancy rate for the area (including Goulburn) was at 3%, a figure significantly below the equilibrium level. As such, not only will all the staff that need relocation to the area for work on the project have nowhere to live, any that do take up residence in the local area will be compounding the existing housing availability crisis. This project will put an unnecessary strain on the community. There is already evidence that the lack of rental accommodation is impacting the Tarago community, with at least one family with children at Tarago Public school having to leave the area after they had to vacate their rental accommodation and were unable to find a new residence.

- 5.3.2 Mitigated - accessibility impacts related to capacity and availability of short-stay accommodation It is proposed that Veolia develop a workforce housing strategy prior to construction that assesses the housing and accommodation environment and identifies and addresses potential accommodation and rental market pressures in the local and regional area. Where the construction workforce is unable to be hired locally and will need to be relocated, it is proposed that Veolia assess all housing and accommodation options within the regional area. If there is a lack of capacity, Veolia and construction contractors should consider a layered approach to accommodating the construction workforce, including a combination of rental housing, short-stay accommodation in the Goulburn region, and additional accommodation (if necessary) in nearby regional centres or cities, such as Bungendore or Canberra, where there would be additional accommodation options.
  With successful development and implementation of the proposed workforce housing strategy and its mitigation measures, potential accessibility impacts related to capacity and availability of short-stay accommodation remain Medium. The likelihood of the social impact remains as possible. Negative consequences would be reduced to minor as the proposed workforce housing strategy would identify the need for additional accommodation early allowing for the provision of alternate housing options for the construction workforce. A summary of the assessment is provided in Table 5.4. *(Social Impact Assessment, page 42)*

The previous excerpt demonstrates Veolia does not actually have an accommodation strategy, nor have they investigated the possibility that these measures (and their staff) can be accommodated elsewhere. The housing market is extremely tight in the entirety of the region within commutable distance from the proposed incinerator. This includes the ACT. Due to the sitting of Federal Parliament and the popularity of the ACT with school tours and other events, the ACT also often has a short-fall of short-term accommodation. It is unlikely the ACT could provide enough accommodation of any type to house the proposed 300 person workforce needed during the three years of construction. It is irresponsible to suggest such a measure without investigating its viability.

2. Trivialisation of community concerns;

- *"Many of the stakeholders consulted, particularly nearby neighbours, expressed concerns about the project in terms of the potential impacts outweighing the positives. There was a strong notion of 'not in my backyard' (NIMBY), particularly amongst nearby neighbours who were interviewed. This is an expression commonly used to reflect community attitudes and opposition to development projects where community members, whilst they acknowledge and accept the development, reject it due to the location and potential impacts they may experience (Dictionary of Energy 2015). During the SIA field study, many of those consulted felt it was unfair for the project to be proposed in the local area for waste which is sourced from Sydney. It was commonly viewed that the project should be located near the source of the waste and expressed a sense of unfairness that they experience negative impacts associated with odour, traffic and air-quality due to waste from outside their area." (Social Impact Assessment, page 44)*

It is highly inappropriate (and patently inaccurate) for Veolia and its consultants to be referring to the local community as NIMBY. The Tarago community already has a multitude of State Significant Developments in its backyard - the wind farms, the solar farms, the bioreactor and the quarries. Tarago residents are clearly not NIMBYs. But the local community has lived with the negative impacts of Veolia's operations for more than 20 years. What they do know first-hand is that Veolia will not obey its operating licence conditions. They know that the NSW Government and EPA will be powerless to enforce the operating licence conditions. They know that the odour from Veolia's current operations impacts their quality of life. They know that the roads they drive on are so damaged by constant truck traffic that they are dangerously unsafe. They know that the 'out-of-sight, out-of-mind' mentality of Sydney dumping its garbage at Tarago has not helped resolve Sydney's waste problems. And they know that the proposed waste incinerator has the potential to harm the health of their children, the local environment and their farms. The consultants have clearly paid minimal attention to the sound knowledge base upon which community members were making their comments, nor to the overwhelming evidence that there's a lot of development already in operation and planned for operation in Tarago and the surrounding areas.

Use of the Dictionary of Energy to define the term NIMBY is also clearly a strategic choice, given its accepted common-language meaning and associated negative connotations (and the absence of technical need in relation to the term itself). Use of this particular dictionary makes it appear to readers that there is a higher technical need to justify the use of this particular definition, implicit in which is the acknowledgement of locals to the need for the development. CATTI refute that locals acknowledge any need for this proposal, and further refute that any definition of the term NIMBY is applicable to these circumstances. The majority of residents have made it clear that they "do not acknowledge and accept the development", nor do they feel there is any need for it. Communities Against The Tarago Incinerator (with more than 1,000 like-minded supporters from the affected communities) have stated throughout the process that this facility is not necessary (nor safe, nor environmentally-friendly) for the management of waste. Residents enumerating on the very obvious fact that should such a development be required, it should be located near the source of the waste, does not equate to residents acquiescing to the necessity for the development. It should be obvious that Tarago residents know that this measure is not necessary to continue the management of Sydney's waste given the bioreactor has operational capacity for at least 25 more years. The future capacity of the bioreactor is something Veolia has previously lauded publicly to the community and many are aware of its future capacity.

The use of this term with the associated negative connotations (and the implicit gaslighting commensurate with the use of a technical dictionary to define such a well-understood, common-language term in the absence of technical requirement), only goes to highlight the contempt in which Veolia hold the local community. The local community have lived with the issues caused by Veolia's operations for 20 years. It is unreasonable and self-interested for Veolia's consultants not to acknowledge that the concerns raised have a sound basis in the lived experience of the community, and that there have been considerable negative

impacts from Veolia's ongoing operations. To use a term commonly regarded as offensive to disregard this lived experience is disrespectful, and further demonstrates the manner in which community concerns are trivialised and disregarded.

- *5.5.1 Unmitigated – decision making systems impacts related to approvals process for State significant development*
  A common perception raised during SIA field study activities was that the project will be approved despite concerns raised by the local community. SIA field studies found that there is some lack of trust within the local community due to negative perceptions of decision-making systems, given stakeholders' previous experiences with planning and approvals processes for other SSD. **Residents in the local community uphold a strong NIMBY sentiment, which is common within communities who have experience with proposed SSD projects.** *A common sentiment associated with the project was that it is unfair for large developments to be proposed locally which only provide benefits to other regions, namely Sydney. Nearby neighbours who participated in the SIA field study felt that the project will only provide economic benefits for Veolia, the state government, and metropolitan areas.* **This sentiment was held despite the NSW Government assessments, planning and approvals processes for SSD stringent requirements established to prioritise community and environmental needs.** *Unmitigated, the significance of mistrust of the decision-making systems for SSD is assessed as High. The likelihood of social impacts deriving from mistrust of the decision-making systems is likely, whilst the negative magnitude is moderate due to potential impacts lasting for the life of the project. (Social Impact Assessment, page 49)*

Why have the authors not considered that the very fact that this community is familiar with SSD projects may provide ample justification for the concerns raised? The EIS describes a large number of other industrial SSD projects currently under consideration for the area. There are also a significant number of SSD projects already in operation. How do the number of existing and proposed industrial SSD proposals (solar/wind farm, quarries, agricultural industry, waste management, incinerator) compare to other NSW LGAs? What quantification has been made of the number of SSD projects in this area versus other NSW LGAs to determine whether or not resident concerns about the decision-making processes for the location of these facilities is fair and equitable?

This assessment also does not appear to have considered the impact that Veolia's ongoing licence breaches have had on community opinions about decision-making making processes. These licence breaches are a quantifiable failure of the *"NSW Government assessments, planning and approvals processes for SSD stringent requirements established to prioritise community and environmental needs"*. How has the assessment reached the above conclusions in the face of overwhelming evidence that these measures are not working to protect the Tarago community? For communities faced with SSD developments to be confident in the control measures proposed by the proponent and the government, there needs to be evidence that the proponent will obey these measures and that government interventions will be sufficient to both encourage compliance and remediate any issues that arise. This is clearly not the case in this instance.

We contend that the local community are also skeptical of the planning decision-making process because past and current experience demonstrate that community concerns and input are largely ignored in the process. Several examples of this are:

- DPIE held numerous meetings with the proponent over the last 18 months during the development of this EIS. Not a single meeting was held with the community. No meeting was held to explain the submission process to the community following the announcement of the public exhibition timeframe.

- DPIE and Veolia repeatedly ignored local council, local MP and local community group representations for a 3 month exhibition period to provide the community with appropriate time to examine the EIS documentation. Instead, the public exhibition was allocated for 42 days - a patently insufficient time frame to allow for proper examination of the 3000 page document.

- DPIE ignored community and Local MP representations that the NSW Planning Portal is inaccessible on many regional internet connections, does not provide adequate access to the submissions process for regional communities, and is so difficult to use that it acts as an effective deterrent to submissions for even IT-savvy users. The community asked for a locked box for submissions to be made at local council offices and/or another appropriate location, or an email address for submissions. These community representations were denied, and the Planning Portal then crashed and experienced further system errors for over a week of the submission period. The Department then allowed a one-week extension and provided an email address for submissions. However, this change in process has generated significant confusion and it is likely many people have been deterred from making a submission (especially in light

of the system error that asked people to submit personal details such as weight and eye colour in order to make their submission). The Department also failed to publicly advertise the email address for submissions and has apparently relied solely on CATTI to do this on their behalf.

- When the community asked the NSW Government via a Government Information Public Access (GIPA) request for information on the planning processes used to determine Tarago was a suitable location for an Energy-from-Waste Precinct, they were informed the information would not be released as it is "Cabinet in Confidence" **(GIPA EPA 782; GIPA EPA 795)**. Lack of transparency in decision-making processes fosters mistrust about the reasons for, and validity of, the decisions being made.

- Residents are aware that in 2022, Veolia acquiesced to the NSW Government's new EfW regulations denoting that EfW incinerators should not be located in the Sydney basin due to the risk they present to human health. And although Veolia did not acknowledge their proposal posed a risk to human health, they did withdraw their proposal for an incinerator at Matraville in Sydney that had been in the planning process much longer than this proposal for Woodlawn. If Veolia does not believe these facilities present a risk to human health, why did they withdraw their proposal so promptly given all the efficiencies and benefits they promote as a basis for this facility would be magnified in an urban setting? And having withdrawn their proposal for Matraville in acknowledgement of the new EfW regulations, how can Veolia then claim it is safe to build such a facility at Tarago? How can it be justified on the basis of the precautionary principle that building this facility in an agricultural heartland responsible for the production of food and the catchment of a substantial proportion of Sydney's water supply does not present an overriding risk of harm? Failure to explain this reasoning trivialises the justifiable concerns of not only the Tarago community, but also the Sydney communities who have fought these proposals for many years.

- *The likelihood of community impacts related to community character as a consequence of the project are very unlikely, as the perceptions are already existing and are associated with the Bioreactor and the Woodlawn Eco Precinct which have been operational for nearly 20 years. The magnitude of the impact is minimal. Given this the significance of the unmitigated potential impact is assessed as Low. (Social Impact Assessment, page 46)*

Veolia here acknowledges they have already detrimentally impacted the 'community character' of Tarago over the past 20 years that their bioreactor has been in operation. They claim that operating an incinerator at Tarago will not worsen the damage that has already been caused. What assessment was performed to assess the reputational damage associated with a malodourous landfill versus the toxic contamination of air/soil/water?

This further demonstrates the manner in which community concerns are trivialised and disregarded. Why are there no mitigation measures proposed for Veolia to attempt to redress the reputational damage it has caused prior to beginning work on a new proposal? Why are no measures proposed to redress the acknowledged community impacts (e.g. operation for a minimum of 24 months without breach of its odour licence or any other licence condition) before this application be considered? That Veolia has demonstrated behaviours that damaged the 'community character' of the town is not an acceptable justification for assessing the compounding potential impacts of any new development as 'minimal'.

- *5.6.1 As the project is proposed at the Woodlawn Eco Precinct, where the odour is an existing issue for stakeholders, it is almost certain that local residents will continue to experience odour impacts and them reluctant to accept the findings of the AQIA. The magnitude of the impact is assessed as moderate. The significance of unmitigated potential health and wellbeing impacts from odour is assessed as High with consideration to local residents' continued experience of odour. (Social Impact Assessment, page 46)*

Prior to the bioreactor being built, the community of Tarago was assured by Veolia that there would be no odour associated with the facility that would affect nearby neighbours or the town and surrounding communities. Yet 20 years later the smell is still a continual issue. More than 300 complaints were made by the community over the 2021/2022 financial year, and Veolia was issued a $15,000 fine by the NSW EPA during the Woodlawn ARC public exhibition period for odour offences in June 2022 . Each time a member of the community can smell the bioreactor it represents a breach of Veolia's operating licence. While they cannot/will not fix this issue, it is entirely reasonable that the community will not trust in Veolia's ability to run an infinitely more complicated (and infinitely higher stakes) industrial incinerator. Demonstration by Veolia that it can run the bioreactor without adversely affecting the quality of life of residents for a set period (e.g. 24 months – which would equate to 10% of the current operational lifespan by 2024) would provide more community confidence than the AQIA report from Veolia's paid consultant.

During the September 2021 community Zoom presentations, Veolia claimed the incinerator would help resolve the odour issue. They have since dropped this claim and are instead stating the incinerator will not exacerbate the issue. This is a much safer claim given there will be no way for residents to differentiate between the odour caused by the bioreactor and the odour caused by the proposed incinerator. How is Veolia proposing to assess the odour impacts of the incinerator to ensure it does not adversely affect residents?

- *Potential cumulative impacts to local amenity during project construction and operation phase may occur due to the number of SSD projects in the local area, as well as the proximity of projects to residential areas and towns. A key issue that was raised during the SIA field study was the impact on amenity caused by noise from nearby operational windfarms. It is recommended that Veolia liaises with proponents of the proposed projects in the local and regional area to address potential amenity impacts from a cumulative perspective and minimise the potential collective impact. (Social Impact Assessment, page 63)*

The above excerpt acknowledges that noise from nearby operational windfarms is already affecting amenity for residents. It is acknowledged that the proposed project construction and operation of the incinerator will result in cumulative impacts. It is also acknowledged that other SSD projects may also result in cumulative impacts on local amenity. Where is the information on whether or not these impacts can be mitigated? Where are the planned mitigation strategies? Without any information to demonstrate there are ways to mitigate these impacts and that these will be effective, it is pure conjecture to assume liaison with other proponents will result in any reduction of the impact to local amenity.

3. Coercive use of funding

- *5.4.1 To date Veolia has supported the community with over $12M in grants, which has been distributed to 1,400 projects to enhance local facilities, education, and the environment (Veolia 2021a). (Social Impact Assessment, page 44)*

It is important to clarify that Veolia itself has not provided these grants to the community. The Veolia Mulwaree Trust is a separate entity to Veolia's Woodlawn Operations. Veolia emphasises this fact to the community when questioned about the funding allocation decisions made by the Trust. Simultaneously claiming the benevolence of the grants whilst denying responsibility for the Tarago community receiving such a small percentage of the grant money, is a poor reflection on Veolia and an indication of the way community concerns are deflected and trivialised.

In addition, the grants are not benevolent donations made in a spirit of goodwill to the community that endures so much through their operations. The Trust is a requirement of Veolia's operating licence conditions for the bioreactor. The funding grants are required for Veolia to continue its operations and continue profiting through the disposal of Sydney's garbage at the expense of the Tarago community. The intent of the grants is to provide some compensatory offset for the impact Veolia's operations have on the community. Each day of odour pollution, each truck incident, each licence breach, is another day the community earns the money from Veolia with interest.

Of the $12 million dollars in Trust funding, less than 10% of the money allocated over past 15 years has been for the community of Tarago – the community that endures the bulk of the detrimental impacts from Veolia's operations. So whilst Tarago residents endure odour issues that cause health problems, local ground water contamination, increased truck movements and the destruction of local roads, the vast majority of the funding has been allocated to communities much farther away. In a number of instances funding has been allocated to communities up to 200kms away that are unlikely to know where Tarago is nor what the bioreactor does.

For all of Veolia's claimed benevolence in regard to community donations, it is also extremely important to note that the $2.5 million pledged by Veolia for the Goulburn Performing Arts Centre was withdrawn just two weeks after Goulburn-Mulwaree Council spoke out publicly against the proposed waste incinerator. All of the money granted by the Veolia Mulwaree Trust comes with strings attached, such as the intrusive signage all around Tarago advertising where money has been spent. A recipient of a benevolent gift should not need to advertise who purchased it for the next 20 or more years.
This type of funding is strategically used by large corporations operating unpopular operations with very specific intent. The intent is to make it more palatable to the community hosts, and attempt to silence opposition to the operations. There are already community groups in Tarago who have requested that members do not speak out about the current issues for fear of retaliation when grants are awarded. This

issue has caused division amongst local groups and prevented them and their members from making complaints about the odour and other issues.

There is a term in the EIS used to explain electricity consumed by the incinerator in comparison to what it outputs. The term used is 'parasitic load'. It is appropriate that the EIS should provide such an apt description of Veolia's role in the Tarago community. The drain that Veolia's operations places upon the town and its residents is a parasitic load. And its program of grant funding and the way that this is allocated and managed is coercive in nature.

4. Local economy and jobs

- *The operation phase of the project will result in approximately 40 full-time jobs. The known operational workforce associated with SSD projects in the study area (including the project) is expected to be approximately 650 employees. The demand for skilled operational workforce in key sectors may increase the likelihood of cumulative socio-economic impacts relating to increased pressures on social infrastructure, services, and housing locally and regionally. However, a high demand for long-term operational workforce within the local area has the potential to create economic benefits, as well as general growth and relocation in the local area which can support the local and regional community.(Social Impact Assessment, page 63)*

The high number of SSD projects in the region (with many more in the planning pipeline) and their associated job requirements in combination with already low unemployment in the area, means that negative project impacts will dominate. It is clear that the project will require an influx of workers from outside the area, exacerbating the extreme housing shortage in the region and making it harder for local companies and businesses to compete for the workers they need. Many businesses are already struggling to attract staff. Veolia plans for 24 hour a day, 7 day per week construction of the facility. It is highly unlikely that local businesses (or residents needing tradespeople) will be able to compete with the penalty rates/ pay rates that Veolia can offer.

- *This has significant potential consequences for persons currently at risk of financial hardship, housing instability and homelessness, particularly in the context of COVID-19, which has further contributed to increased rents and lower rental availability in regional areas of Australia, including the Goulburn Mulwaree area, due to migrations from urban centres to more regional and rural areas (Anglicare 2021, Goulburn Post 2021). Commitments to local hiring, provision of training and apprenticeship opportunities for local workers, and partnership with local employment and training services could reduce the need for outsourcing of workers. .(Social Impact Assessment, page 64)*

This is purely conjectural. It appears Veolia is already having difficulty filling the rolls currently available at Woodlawn judging by the regular job vacancies appearing on job sites. Recruiting locally for roles at the incinerator that involve the substantial risk of exposure to hazardous byproducts and other materials will be difficult. Locals have already experienced the consequences of Veolia's licence breaches and are aware of the company's poor record on environmental pollution. Equally, prospective employees can easily find information on the potential health consequences of working at these facilities with an internet search.

- *Of interest is the supportive statement by the Department of Industry, Science, Energy and Resources titled Technology Investment Roadmap: First Low Emissions Technology Statement 2020, which outlines the Federal Government's priorities regarding low emission technology investment and supporting economic growth whilst reducing emissions. The statement identifies four visions:*
    - *preserve and create jobs, capture new opportunities and revitalise Australia's regional economies;*
    - *lower household living expenses with abundant, clean and low-cost energy;*
    - *build competitiveness by leveraging our comparative advantages; and*
- *attract and retain the best minds in priority low emissions technology research fields (Social Impact Assessment, Appendix A - Social Baseline, page A.5)*

This appears to state that Veolia is claiming the proposed incinerator qualifies as low emissions technology under the Federal Government's Low Emissions Technology Statement 2020. What calculations have been done to demonstrate this project qualifies as low emissions technology. We note that there is significant research from around the world, in particular Europe, demonstrating that these facilities are significant producers of greenhouse gases and produce approximately 1 tonne of CO2 for every tonne of garbage burnt.[1]

- *According to the 2016 Census of Population and Housing, the local area had a total population of 1041, including a population of 426 in Tarago SSC, 228 in Lake Bathurst SSC, 182 in Currawang SSC, and 205 in Mount Fairy SSC (ABS 2016a). The smaller population size within the local area may reflect the limited number of services available (see Section A.4).* **The regional area had a 2016 population of 35,768** *(ABS 2016a). Population data was not available for 2006 and 2011 across the SSCs in the local area due to changing ABS structures. As a result, population trends and analysis may be skewed. However, population trends from the*

available data of the regional area demonstrate an increasing population, with a 20.5% increase of the total population between 2006–2016. It is anticipated that most of this growth is concentrated in Goulburn within the regional area. The population trends in the study area are presented in Table A.5. (Social Impact Assessment, Appendix A - Social Baseline, page A.11)

Irrespective of the use of old data, it is clear there was a 20% increase in the region's population over the ten years from 2006-2016. This makes it obvious that the proposed incinerator is unnecessary to invigorate growth in the region. In fact, an incinerator and the risks it presents may act as a deterrent to future growth, especially as reputational damage associated with the incineration of Sydney's waste is compounded by future licence breaches and pollution events. Families have already moved from the area due to health concerns relating to the bioreactor odour. Several families with young children and/or existing health concerns have indicated they will move from the area if the project proceeds. As word of the project spreads and Veolia continues to breach its licence conditions, the impact will be compounded. The associated reputational damage will likely drive down property prices as people become reluctant to move to the area.

The premise of jobs creation as a basis for the Woodlawn ARC is fundamentally flawed by the significant quantities of well-regarded research that demonstrates waste recycling creates far more jobs than incineration. Veolia uses the basis that the incinerator will create 40 full-time jobs as a major selling point of the proposal. However, incineration of waste will prevent further development of recycling and composting in NSW for a long time to come.[2] It is common knowledge that composting organic matter is a far better solution for organic waste management than incineration, and there are local examples where this process is working exceptionally well.[3] Additionally, an extensive US-centric study by the Tellus Institute and Sound Resource Management summarises: "The findings indicate that waste disposal generates the fewest jobs per ton of waste at 0.1 jobs per 1,000 tons of waste, while recycling generates 2 jobs per 1,000 tons."[4, 5] Other research indicates that recycling creates 10-20 times more jobs than incineration when the operation is considered in its entirety.[6] The number of jobs the proposal will create also appears insignificant in respect to the $600 million start-up investment required and the costs associated with the facility's ongoing maintenance. This demonstrates that developing NSW waste recycling and composting to its fullest potential would not only assist in extending landfill capacities and reducing harmful emissions, but would also likely create far more jobs than the proposed Woodlawn incinerator.

References:

1. UK Without Incineration Network - facts (2022): www.ukwin.org.uk/facts
2. Chief Defra Scientist Warns More Incineration Could Harm Innovation, Resource, 2018 https://resource.co/article/chief-defra-scientist-warns-more-incineration-could-harm-innovation-12382
3. Cooma-Monaro Shire Council - Composting Food and Garden Organics, NSW EPA, 2015. https://youtu.be/5v5zEFfT0DQ
4. More Jobs, Less Pollution: Growing the Recycling Economy in the U.S. (Tellus Institute with Sound Resource Management, 2011.
5. https://www.nrdc.org/sites/default/files/glo_11111401a.pdf
6. Sciencing – Recycling Vs. Landfills or Incinerators, April 25, 2017
7. http://sciencing.com/recycling-vs-landfills-incinerators-23884.html
8. Global Alliance Against Incinerator Alternatives, Incinerators: Myths vs. Facts about "Waste to Energy", page 2.

SEARs Requirements:

An Aboriginal Cultural Heritage Assessment Report (ACHAR) which must:

- **be prepared in accordance with the Code of Practice for Archaeological Investigation in NSW (DECCW, 2010), and guided by the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (OEH, 2011)**
- **identify, describe and assess impacts on the Aboriginal cultural heritage values that exist across the development**
- **provide evidence and details of consultation with Aboriginal people in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010).**

The Aboriginal Cultural Heritage Assessment fails to meet the SEARs requirements. The assessment:

1. failed to accurately describe the impact of the development on the landscape, in particular, the culturally significant site of Lake George;
2. failed to engage in proper and respectful consultation; and
3. misrepresents the extent of support from Registered Aboriginal Parties (RAPs).

1. Failure to accurately describe the impact of the development on the landscape (with particular reference to the culturally significant site of Lake George)

- No project specific cultural values have been vocalised by the RAPs for the development footprint to date. Discussions have identified the importance of **Lake George** and Lake Bathurst to the Aboriginal community, but these are both some distance from the project area; and **cannot see, nor be seen from,** the project area. No connection between the development footprint and these key locales has been advised by the RAPs during the consultation process. As such, it is concluded that the development footprint has no specific cultural values. *(Appendix Z, Aboriginal Cultural Heritage Assessment, page 60)*

  The project area is within a broader cultural landscape that encompasses important cultural places such as **Lake George** and Lake Bathurst. However, the project is **not in close proximity, nor within sight,** of these places. *(Aboriginal Cultural Heritage Assessment, page 61)*

  Consultation with the local Aboriginal community has highlighted the importance and cultural values of a number of places and sites in the general region, including **Lake George** and Lake Bathurst. However, no project area specific places or values were advised. Three previous studies of the project area in 1998, 2004 and 2010, similarly did not identify any such values within the site. The project would have no direct or indirect impacts to these important cultural places, which are **over 8 km away and cannot be seen from, or by, the project**. *(Aboriginal Cultural Heritage Assessment, page 63)*

  The Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales describes that *"Aboriginal cultural heritage also relates to the connection and sense of belonging that people have with the landscape and each other"* (page 1), and that *"The land's character greatly influences how Aboriginal people interact with it. Therefore describing the landscape (the physical setting of the land to be assessed) and its resources is essential to understanding the nature of the cultural landscape"* (page 5). The Guide outlines how background assessments (such as this one completed for Veolia's EIS) require information about the *"physical setting or landscape"* (page 5) in order to gain an initial understanding of the cultural landscape.

  In multiple instances, this assessment fails to accurately represent the impact the proposed facility will have on the visual landscape of the surrounding area. In direct contradiction to the Landscape and Visual Assessment completed as Appendix BB of the EIS, this assessment states that the project cannot be

seen from (nor is it within sight of) Lake George. The project is only 8km from Lake George, and as local residents know, the Woodlawn site can be seen when looking back across Lake George from the Federal Highway, and Lake George can also be seen from a number of vantage points along Collector road. This suggests that the lake is also likely to be visible from the Woodlawn site, and the aerial photo view in Figure 7 (Appendix BB, Landscape and Visual Impact Assessment, page 27) appears to indicate Lake George may be visible from the road that rises around the top of the bioreactor. Regardless, the facility will be clearly visible when looking east to north east over Lake George from Weereewa Lookout at a distance of approximately 19km, a distance of more than double the distance of the proposed site from the lake. (Figure 20 (Appendix BB, Landscape and Visual Impact Assessment, page 62)

These contradictions indicate Registered Aboriginal Parties may not have been accurately informed as to the visual impact the development will have on the landscape. Given the cultural significance of Lake George, the landscape information provided may not have been sufficient for participants to develop an understanding of how the project will impact Aboriginal cultural heritage.

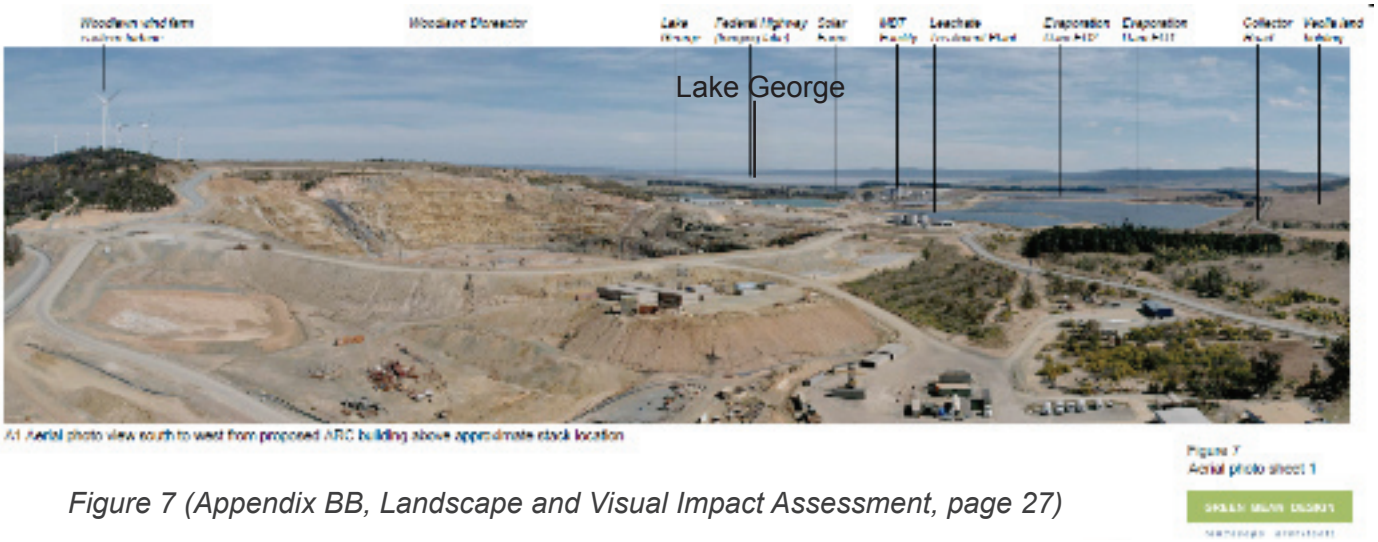

Figure 7 (Appendix BB, Landscape and Visual Impact Assessment, page 27)

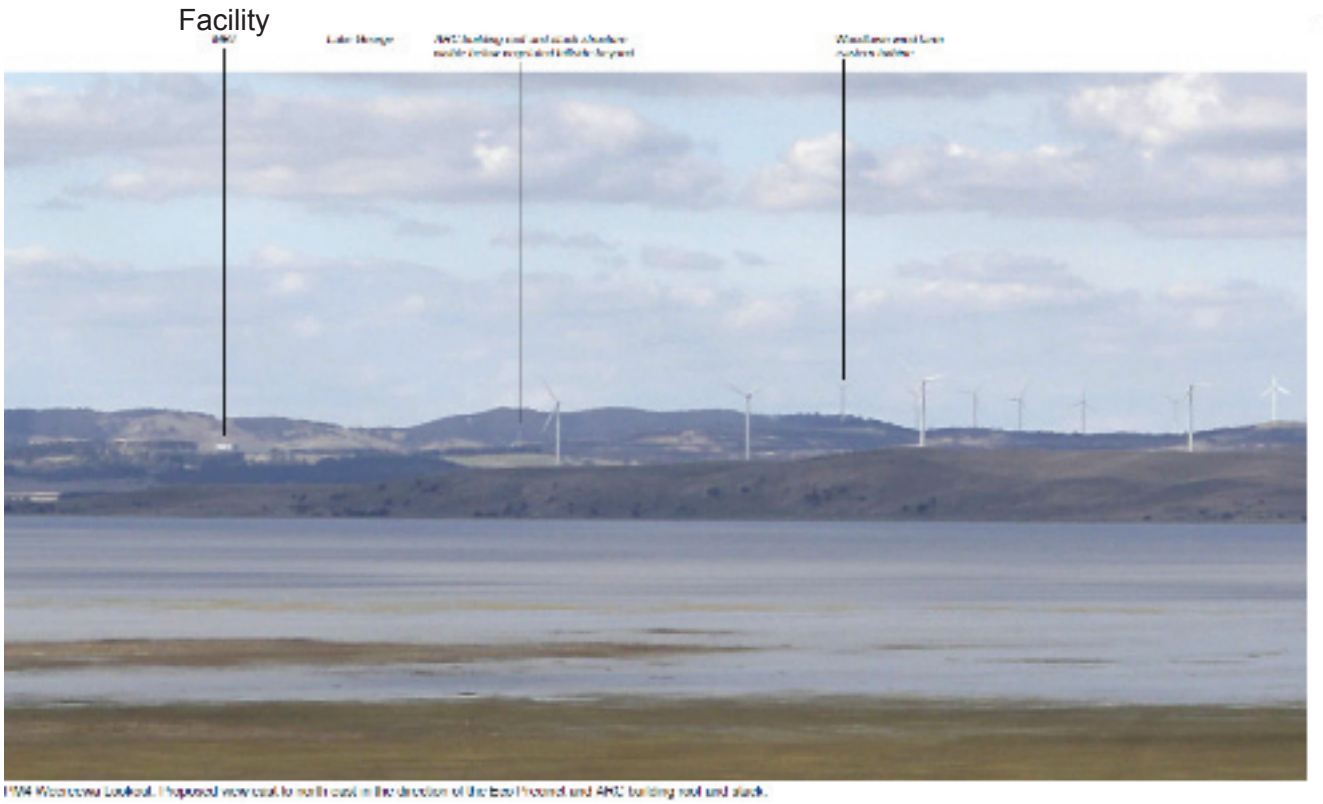

Figure 20 (Appendix BB, Landscape and Visual Impact Assessment, page 62)

2. Failure to engage in proper and respectful consultation

Early input into the assessment:

In outlining the rights and interests of Aboriginal people in their cultural heritage, the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales states:
"OEH recognises and acknowledges Aboriginal people as the primary determinants of the cultural significance of their heritage. In recognising these rights and interests, all parties concerned with identifying, conserving and managing cultural heritage should acknowledge, accept and act on the principles that Aboriginal people:

- *are the primary source of information about the value of their heritage and how this is best protected and conserved*
- *must have an active role in any Aboriginal cultural heritage planning process*
- *must have early input into the assessment of the cultural significance of their heritage and its management so they can continue to fulfil their obligations towards their heritage and must control the way in which cultural knowledge and other information relating specifically to their heritage is used, as this may be an integral aspect of its heritage value." (Page 2)*

The Aboriginal Cultural Heritage Assessment process appears to have lacked the opportunity for Registered Aboriginal Parties to have *"early input into the assessment of the cultural significance of their heritage"*. A number of parties actively sought a site inspection, including Robert Young of the Konanggo Aboriginal Cultural Heritage Services (13/08/21), Robert Williams of the Ngunnawal Elders Corporation (16/08/21), and Merekai Bell of Yurawang Gundana Cultural Heritage Service (19/09/21) (Aboriginal Cultural Heritage Assessment, pages 76-77, Annexure B Aboriginal Community Consultation). It appears the site visit was initially denied due to COVID restrictions. However, rather than a proposal to reschedule the visit soon after restrictions eased, Alan Williams (EMM Consulting, 16/08/2021) initially advised that *"there would be potential to discuss on-site activities later in the project, potentially post approval but prior to development to enable this if still strongly sought after the meeting on Friday*" (Aboriginal Cultural Heritage Assessment, pages 76-77, Annexure B Aboriginal Community Consultation). Why was the proposal made to delay inspections until the post-approval stage? This would deny Aboriginal representatives early input into the process in order to fulfil their heritage obligations (and to verify EMM's claims that the site was *"heavily disturbed"* - page 76, Aboriginal Cultural Heritage Assessment, Annexure B Aboriginal Community Consultation).

The assessment later notes:

- "With the easing of restrictions a subsequent site visit was undertaken in late November 2021 to allow the RAPs to investigate the project area. These were attended by Dean Delponte (Ngunawal Heritage Aboriginal Corporation), Robert Young and Auntie Pamela Young (Konanggo Aboriginal Cultural Heritage Services), Shawn Williams (Freeman and Mark Pty Ltd), and Darren Young (Yurwang Gundana Cultural Heritage Services. Following the site investigation, discussions were undertaken with these participants, and no concerns over the project were identified." (Aboriginal Cultural Heritage Assessment, page 9).

  However, there appears to be no mention of these visits in Annexure B (Aboriginal Community Consultation). Why is this?

Additionally, Merekai Bell of Yurawang Gundana Cultural Heritage Services emailed a request on 19/09/21 stating that *'as a traditional owner I would like to go out on site and do a survey and if need be a test excavation because that is something that needs to be done.*' Alan Williams (EMM) responded to Merekai's request (email of 20/09/2022), by referring to the management strategy clarifying these opportunities will be available prior to any form of ground disturbance on the project. (Page 178, Aboriginal Cultural Heritage Assessment, Annexure B Aboriginal Community Consultation). Were representatives offered the opportunity to do a test survey during the on-site visit?

Even acknowledging the restrictions encountered during COVID, the process appears to have lacked the intent to give Aboriginal representatives meaningful input early in the process. What measures does the proponent propose could reasonably have been effected if Aboriginal representatives made a finding of significance in the post-approval stages? The omission does not reflect a collaboration that acknowledges the expertise, history and connection to Country shared by Aboriginal people.

3. Confidentiality

It appears that requests for confidentiality made by several Registered Aboriginal Parties (RAPs) during the consultation process were disregarded, with adverse repercussions affecting at least one party.

- Correspondence on 9/06/21 to EMM Consulting from (name redacted #1) Aboriginal Corporation requests **"Please do not disclose any of our details to LALC."** (Aboriginal Cultural Heritage Assessment, Annexure B - Aboriginal Community Consultation, page 96).
- Correspondence on 18/06/21 to EMM Consulting from (name redacted #2) Aboriginal Corporation states: "**Please also note that we do not wish our details to be forwarded to the Local Aboriginal Land Council**". (Aboriginal Cultural Heritage Assessment, Annexure B - Aboriginal Community Consultation, page 114).
- Correspondence on 18/06/21 to EMM Consulting from (name redacted #3) Aboriginal Corporation on 20/06/21 stating "**Please note we do not want our details forwarded to LALC, please do not release our correspondence.**" (Aboriginal Cultural Heritage Assessment, Annexure B - Aboriginal Community Consultation,page 117).

On 6/07/21, EMM consultant Georgia Burnett wrote to the Local Aboriginal Land Council (LALC) in accordance with 4.1.6 of the Aboriginal cultural heritage consultation requirements for proponents 2010 which states (page 11) :

"4.1.6 The proponent must make a record of the names of each Aboriginal person who registered an interest and provide a copy of that record, along with a copy of the notification from 4.1.3 to the relevant DECCW EPRG regional office and LALC within 28 days from the closing date for registering an interest."

In her letter she notes that three of the Registered Aboriginal Parties (RAPs) requested their information be withheld from the LALC: "Please note three of these organisations requested their information be withheld from the relevant Local Aboriginal Land Council." (Aboriginal Cultural Heritage Assessment, Annexure B - Aboriginal Community Consultation, page 131-132).

However, although the names of the corporations and the contact person were redacted in the letter sent by EMM, their corporation names and details have not been fully redacted from correspondence (Aboriginal Cultural Heritage Assessment, Annexure B - Aboriginal Community Consultation, pages 96, 114, 117). It is evident that the LALC has been able to identify at least some of the parties who requested confidentiality, as seen in the communications long on pages 76 and 77 where the LALC and others are now challenging the 'Aboriginality' of at least one of the parties concerned. We note this correspondence, although noted in the consultation log and communications record, is not included in the records of correspondence printed in the report.

It is evident that failure to maintain the confidentiality of the requesting parties in the process has resulted in adverse consequences for them, as they were subject to attacks on their 'Aboriginality'. It is hard to see how these types of intimidatory tactics from other parties have not jeopardised the integrity of the process. How did the proponent manage the process from that point onwards to ensure inclusive and open participation from those parties moving forward? Is it unlikely that any of those parties would then share their concerns openly with the proponent once knowing that information was not being maintained confidentially, and that it may leave them open to future attack. The failure to maintain confidentiality demonstrates a lack of respect to the parties who offered their time and expertise in the interests of inclusive consultation. It may also deter these parties from future engagement.

Paid opportunity for comment

An email on 23/08/21 from Alan Williams of EMM Consulting detailing minutes of a meeting on the same day notes:

"AW outlined some potential timeframes for the finalisation of the ACHA, and next steps including a further meeting or paid opportunity to comment in the coming weeks."

Were any of the parties paid to provide comment? If so, which parties? Is there a duty to disclose this information?

Misrepresentation of the extent of support from Registered Aboriginal Parties

2.4 Aboriginal stakeholder feedback
As outlined in Section 2.3, a series of online meetings was undertaken with the RAPs. The outcomes of these meetings, included:
• All RAPs supported the completion of the ACHA based on the information provided, and had no major issues with the finalisation of the report and approval of the project, as long as opportunity in the post-approval was provided for Aboriginal people to visit and inspect the site, allow 'Connection to Country' and further exploration of any potential intangible connections.
(Aboriginal Cultural Heritage Assessment, page 11).

The statement that "All RAPs supported the completion of the ACHA" is misleading. Of the 48 stakeholders identified, 15 parties registered for the project (Annexure B – Aboriginal Community Consultation). Of those, only five (33.3%) commented in support of the recommendations (Aboriginal Cultural Heritage Assessment, page 11).

SEARs Requirements:

An assessment of the proposal's biodiversity impacts in accordance with the Biodiversity Conservation Act 2016, including the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the Act, except where a waiver for preparation of a BDAR has been granted.

The BDAR fails to survey the impact of the proposal on the critically endangered Yellow-spotted Tree Frog (Litoria castanea).

- Frogs were not surveyed, even though they were heard in PCT 1256.

  "Two threatened frog species considered to have potential to occur in this habitat, the Green and Golden Bell Frog and Yellow-spotted Tree Frog, are associated with similarly disturbed and modified habitats in agricultural and industrial settings. Several common frog species were opportunistically recorded during surveys undertaken to date, indicating that frog habitat is present." (Appendix Y, Biodiversity Development Assessment Report, page 29)

  No targeted searches for frogs have been undertaken to date, however several common species were heard calling during flora surveys in areas around PCT 1256.(Appendix Y, Biodiversity Development Assessment Report, page 40)

- The report states that due to a project redesign (resulting in PCT 1256 being located outside of the subject land), frog species will no longer be impacted and not require survey.

  Due to redesign of project, resulting in PCT 1256 being located outside of the subject land, frog species will no longer be impacted and not require survey. (Appendix Y, Biodiversity Development Assessment Report, page 40)

- The ARC access road was originally placed through the wetland PCT 1256, but was then redesigned so that the frog habitat is now adjacent to the subject land. The habitat appears visibly adjacent to the ARC access road in Figure 7.1 (Appendix Y, Biodiversity Development Assessment Report, page 56).

  Key avoidance measures that have been implemented include:
  • redesigning the project to avoid the placement of the ARC access road through wetland areas of PCT 1256, which avoids potential impacts on threatened frog species; (Appendix Y, Biodiversity Development Assessment Report, page 54)

  The Yellow-spotted Tree Frog is an SAII species, however no habitat (PCTs) associated with the species is found within the subject land, with only marginal potential foraging habitat present in the subject land. As potential habitat exists adjacent to the subject land, a SAII assessment was undertaken for the species under a precautionary approach. (Appendix Y, Biodiversity Development Assessment Report, page 60)

  One candidate species that has potential to be at risk of SAII, the Yellow-spotted Tree Frog, is considered to have potential to occur adjacent to the subject land. (Appendix Y, Biodiversity Development Assessment Report, page 96)

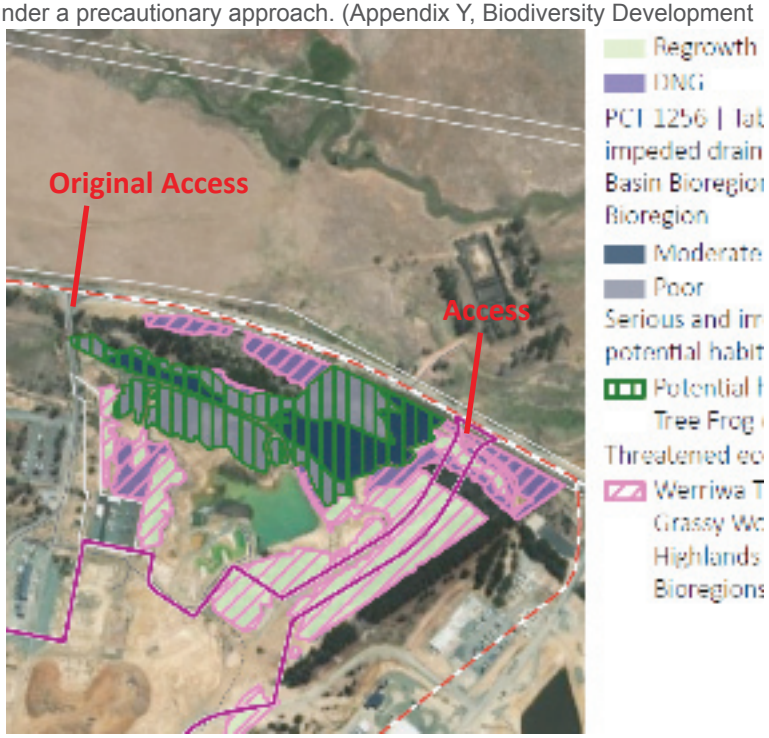

Figure 7.1 (Appendix Y, Biodiversity Development Assessment Report, page 56)

Why was a full assessment not made for this species given the proximity of habitat to the development and the report's acknowledgement that "foraging and shelter habitat" will be impacted? (Table 8.10, Biodiversity Development Assessment Report, page 90).

- The assessment of impact on the critically endangered Yellow-spotted Tree Frog (Litoria castanea) states:

  The species is not known to occur on the subject land and no estimate can be made of the number of individuals present in the subpopulation. (Appendix Y, Biodiversity Development Assessment Report, page 63)

  The report discusses measures to mitigate impacts on the frog (Section 7.3, Biodiversity Development Assessment Report, page 54-56), but states that "foraging and shelter habitat" will be impacted (Table 8.10, Biodiversity Development Assessment Report, page 90).

  The assessment of the significance for the impacts on the Yellow-spotted Tree Frog concludes:

  "Therefore, the activity is considered unlikely to lead to a long-term decrease in the size of a population of the species." (Table 8.10, Biodiversity Development Assessment Report, page 90).

  How can the project be considered unlikely to lead to a long-term decrease in the population size of this critically endangered species without an actual survey of yellow-spotted tree frogs (especially given the evidence of frogs in the surrounding area)?

- The access road is next to the wetland site PCT 1256. The report states:

  "There may be a small overall increase in the incidence of mortality of individuals of threatened species during construction. Construction traffic speed limits and limitation of construction traffic movements at night would mitigate impacts.

  The overall long-term impact of vehicle strike associated with the project is unlikely to have a significant impact on populations of threatened species or fauna that are part of a threatened ecological community." (Table 7.4, Biodiversity Development Assessment Report, page 53).

  How is this conclusion reached when both construction and operation of the ARC will be "24 hours per day, seven days a week" (Biodiversity Development Assessment Report, page 1).

  The report proposes to mitigate fauna strikes by:

  "Impose speed limits on access roads and limit night works on access road." Biodiversity Development Assessment Report, page 55).

  To what extent can road night traffic on the access road be limited when construction and operation of the ARC will be "24 hours per day, seven days a week"? (Biodiversity Development Assessment Report, page 1)

SEARs Requirements:

An assessment of the proposal's greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050), including an assessment of cumulative impacts with existing site operations.

The Greenhouse Gas Impact Assessment fails to meet the SEARs requirements. The assessment lacks validity as it:

- **is inconsistent with legislative/policy aims;**
- **lacks a comprehensive calculation of emissions for the proposed development;**
- **presents insufficient/incomplete information; and**
- **contains numerous typographical errors / misleading statements.**

Inconsistent with Legislative/Policy Aims

3.1 International context - 3.1.2 United Nations Framework Convention on Climate Change (UNFCCC)
The objective of the Convention is to stabilise GHG emissions 'at a level that would prevent dangerous anthropogenic interference with the climate system'. It states that 'such a level should be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner'1. (Appendix Q, Woodlawn ARC EIS, J200931 | 10 | v2 4)

A primary objective of the United Nations Framework Convention on Climate Change (UNFCCC) is to ensure food production is not threatened. A systematic review of the health impacts of waste incineration[1] (published in the Australian and New Zealand Journal of Public Health in 2020 and referenced by the NSW Government Chief Scientist and Engineer in his report to the NSW Minister for Environment) concluded *"there is insufficient evidence to conclude that any incinerator is safe"*and *"contamination of food and ingestion of pollutants is a significant risk pathway for both nearby and distant residents"* (page 47) . The report recommended *"New incinerators should be located away from areas of food production"* and "Food grown near an incinerator should be avoided" (page 46). It is contradictory to the overarching aims and objectives of the UNFCCC to approve a development that threatens food production, even if it did reduce greenhouse gases (which CATTI does not believe is accurate). CATTI contends that this proposal both threatens food production and increases greenhouse gases.

- **3.2.2 New South Wales – Climate Change Policy Framework**
  The NSW Climate Change Policy Framework (NSW OEH 2016a) outlines the NSW Government objective of netzero emissions by 2050 and to increase climate change resilience in NSW....It organises potential actions into three priority investment areas: ...
- preparing for a changing climate – aims to reduce costs to public and private assets that arise from climate change,reduce impacts on health and wellbeing, particularly in vulnerable communities and manage impacts of climate change on natural resources, ecosystems and communities. (Appendix Q, Woodlawn ARC EIS, page 6)

  Incineration and air pollution are acknowledged by the NSW Govt to be associated with serious health risks and air quality is being impacted by increasing climate change events such as bushfires and storms.

  "Populations can still experience health impacts when emissions are below the national standards, and for some common air pollutants, there is no safe threshold of impact. It is becoming challenging to comply with the national standards in NSW due to the growing population, tighter national air quality standards and the impacts of climate change. From a population health perspective, even where pollution levels are held constant, health impacts from air pollution are likely to increase over time, simply due to an increase in the number of people exposed due to population growth."[2]

Regional NSW communities are already vulnerable to health issues due to the reduced access to medical care and services. Regional communities are also increasingly vulnerable to other climate change risks (fire, flood, drought and storm), and this is combined with reduced access to emergency services in comparison with urban areas. Communities surrounding the proposal are also vulnerable in regard to water availability, with most towns having no reticulated water supply. Additionally, farming communities already face an increased risk to their livelihood through climate change, and an incinerator with acknowledged contamination risks adds an additional stressor. Safe Work NSW identifies that farmers are already more vulnerable to suicide and depression than the general population.[3] The proposed incinerator will compound the vulnerabilities local communities already face due to a changing climate, accelerate the deterioration of rural road assets, and increase the impost on an already overburdened rural health network. This is contrary to the aims of the NSW Climate Change Policy Framework.

Lack of Comprehensive Emissions Calculations

- **4.2 Boundaries of the assessment**

  The following activities were not included in the assessment:

  - electricity consumption for waste sorting at the Banksmeadow and Clyde terminals;
  - diesel consumption for waste sorting at the Banksmeadow and Clyde terminals; and
  - process water consumption for waste sorting at the Banksmeadow and Clyde terminals.

  (Appendix Q, Woodlawn ARC EIS, page 8)

  Veolia states in their waste feedstock protocols that the sorting and labelling of waste at the Banksmeadow and Clyde terminals is an integral part of the process to ensure the waste feedstock quality. Waste is sorted, loaded and labeled (bioreactor/incinerator) at these facilities in preparation for transport. These are operations directly under Veolia's control, relating directly to the operation of the proposed ARC, and facilitated for the sole purpose of the bioreactor and ARC. Veolia states that additional sorting will occur at these facilities specifically to guarantee waste feedstock quality for the proposed development. Why have these emissions been omitted from the greenhouse gas impact study? How do the overall calculations alter with their inclusion? This information is required to satisfy the SEARs requirements.

- **Figure 4.1 Overview of GHG emission scopes** (WRI & WBCSD 2013)

  Hydrofluorocarbons (HCFs), perfluorinated compounds (PFCs) and nitrogen trifluoride (NF3) were not relevant to the project, and were therefore not included in the emission calculations. (Appendix Q, Woodlawn ARC EIS, page 7)

  Why have these compounds been excluded from the calculations? PFCs are used in non-stick coatings and stain treatment for fabrics and will likely form part of the waste stream for the incinerator.

- **5.2 Operational emissions**
  The most significant emission-generating activities were included in the assessment, and these are summarised by scenario and by scope in Table 5.1. For each activity the details of the calculation approach are given in Appendix A. (Appendix Q, Woodlawn ARC EIS, page 10)

  The SEARs requires an assessment of the proposal's greenhouse gas emissions. Why are only the "most significant emission-generating activities" included in the assessment? What method was used to account for the cumulative impact of less significant emission-generating activities?

- Table 6.1. Estimated Annual GHG emissions (baseline - Eco-Precinct Operations) (Appendix Q, Woodlawn ARC EIS, page 12)

  Are the fugitive emissions of landfill gas (97,344.0) noted in the table reflective of Veolia's gas-capture obligations?

- 6.3 Summary and significance

  Operational emissions in each scenario, and the emission benefits associated with substituted electricity in Scenario 2, are summarised in Table 6.5. For each scenario the substituted electricity is presented as a negative emission, and the total is the sum of the operation and substituted electricity. This is also shown graphically in Figure 6.1. When the substitution of electricity is taken into account in Scenario 2 (with the ARC), the net operational emissions were 74,611 t CO2-e/year. This represents an overall reduction of 50% compared with Scenario 1. (Appendix Q, Woodlawn ARC EIS, page 15)

  Construction, end-of-life, and ongoing rehabilitation/monitoring requirements are omitted from assessment of the proposal's GHG emissions. Without estimating emissions for the entirety of the project, the calculations are minimising the emissions costs.

- Figure 6.1 Plot of operational GHG emissions
  Finally, the emissions intensity of electricity generated by the project only has been quantified by considering all emissions associated with the project, specifically:

  • thermal treatment of residual waste for electricity generation (Scope 1);
  • the combustion of diesel fuel associated with the project (Scope 1);
  • the on-site transportation of residue from the ARC building to the encapsulation cell (Scope 1);
  • the consumption of purchased electricity by the project (Scope 2);
  • the transportation of waste to the project (Scope 3); and
  • employee travel (Scope 3).

  (Appendix Q, Woodlawn ARC EIS, page 16)

  Calculation of emissions cost does not include the following:
  - end-of-lifecycle shutdown and rehabilitation of the site
  - ongoing testing and monitoring until encapsulation cell is dormant
  - emissions associated with the work required to effect repairs to the encapsulation cell/leachate ponds (liners are only guaranteed for 30 years).

  Additionally, where are the calculations for emissions costs associated with the reuse of Incinerator Bottom Ash (IBA) comparative to the landfilling of IBA? Veolia indicates they are proposing to reuse IBA. All work associated with this and any associated on-site and off-site transport should be calculated and included for review.

- The current year full fuel cycle emission factor for purchased grid electricity in NSW is 0.85 kg CO2-e/kWh (DISER, 2021a). By comparison, the project GHG emissions listed above combined with an annual electricity generation of 240,000 MWh/year, returns an emissions intensity of 0.64 kg CO2-e/kWh. Consequently, the GHG emissions intensity of electricity generated by the project is lower than the GHG emissions intensity of electricity from the NSW grid. It is noted that this calculation does not account for other emission savings across the Eco Precinct4 detailed in Table 6.5. (Appendix Q, Woodlawn ARC EIS, page 17)

  What is the emissions intensity compared to the electricity currently generated at Woodlawn (wind, solar, bioreactor)? NSW is moving towards true renewable energy, so emissions intensities at Woodlawn are more indicative of the emissions intensities to be expected of the NSW Grid as the facility moves through its lifecycle. How is the proposal's emissions intensity likely compare to grid emissions in 10 years time as coal-fired power is phased out (and when the facility will still have a minimum 15 years life remaining)?

- A.3 Scope 3 emissions
  Scope 3 emissions are associated with the following on-site activities:
  - diesel combustion
    - transfer of waste by rail from Banksmeadow and Clyde to the IMF at Crisps Creek;
    - transfer of waste by road from the IMF at Crisps Creek to the ARC;
    - transfer of local waste by road;

  (Appendix Q, Woodlawn ARC EIS, page A.8)

  Why are these activities calculated as Scope 3 rather than Scope 1 emissions? The emissions appear to be occurring as a result of sources controlled and/or owned by Veolia, and as a direct result of activities Veolia is undertaking for the ARC.

Insufficient/incomplete Information

- 4.3 Construction phase

  Throughout the three year construction period, energy consumption will be lower than the operational phase of the project. The operational phase scenarios (Section 4.4) focus on the anticipated peak GHG emissions year and therefore conservatively account for the potential emissions generated during any point of the construction phase. (Appendix Q, Woodlawn ARC EIS, page 8)

  This conclusion has been drawn in the absence of supporting data. Without knowing the construction phase calculations and what has been included/excluded from those figures, it is impossible to verify the accuracy of this conclusion. The SEARs requires an assessment of all phases of the development, including construction and post-lifecycle rehabilitation.

- Table 4.1 Scenario Assumptions (Appendix Q, Woodlawn ARC EIS, page 9)

  Table 4.1 assumes an increase in the tonnage of waste transported from Sydney in both future developments (no ARC and ARC Scenario) from the current operation tonnage of 813,755 t/year to 1,180,000 t/year. The table notes a corresponding increase in tonnage through the IMF (from 671/630 to 900,000 t/year). How is the transport of this waste accounted for in the calculations? Have calculations been based on train or road transport? Is it assumed that an additional train transport will be added? Where are the approvals for these additional transport movements?

- Table 4.1 Scenario Assumptions (Appendix Q, Woodlawn ARC EIS, page 9)

  Table 4.1 states that Veolia's bioenergy power station currently generates 52,845 Mwh/year (based on Veolia's 2019-2020 NGER submission). Operational figures for September 2022 (published in the November edition of the Tarago Times) indicate Veolia has captured 24,924 MWh this year. NGER reporting is based on the financial year, so this would indicate that gas capture is actually occurring at twice the rate indicated in the EIS. How is this discrepancy explained?

  Additionally, Veolia recently informed the community that it has upgraded gas capture mechanisms at the bioreactor. What is the overall increase in gas capture (and power generation) following the improvements? How will this change the emissions comparisons presented in the EIS?

- 6.1 Operational emissions (Appendix Q, Woodlawn ARC EIS, page 12)

  The narration indicates "In the Baseline Scenario and Scenario 1, the fugitive emission of landfill gas was by far the largest contributor, being responsible for approximately 85 % of total CO2-e emissions." This seems excessively high for a landfill with gas capture. How has landfill gas capture been accounted for in the calculations?

- 7 Summary and conclusions

  The main benefits of the project are a reduction of waste going to the Bioreactor, a reduction of landfill gas generation, and the substitution of grid electricity with electricity derived from a less GHG-intensive process (landfill gas combustion). (Appendix Q, Woodlawn ARC EIS, page 12)

  There appears to be insufficient evidence used to draw these conclusions. Total emissions across the entirety of the project do not appear to have been factored in, including proposed IBA reuse, end of lifecycle and rehabilitation requirements, and construction. It is also unclear how landfill gas capture requirements and totals are being incorporated into the calculations. Figures used for landfill gas capture data appear to be from capture prior to upgrades to the gas capture mechanisms. No comparison has been made to alternative proposals, for example, additional investment in further improvements in landfill gas capture.

- Table A.2 Fuel use: liquid fuel combustion (scope 1) (Appendix Q, Woodlawn ARC EIS, page A.3)

  Diesel consumption (mobile sources) for the ARC is listed as 335 Kl/year (in comparison to figures of less than 13 Kl/year for the bioreactor in all scenarios). Why is mobile source diesel combustion for the ARC so much higher? If this relates to the transport of APCr, how will consumption change if APCr is not considered safe for onsite storage within the Sydney Water Catchment area and needs to be transferred offsite?

  Additionally, why is there no mention in the table of the ethanol and petroleum oil consumption for the ARC? If this is zero, it should be noted as such.

- A.1.2 Combustion and flaring of landfill gas

  The volumes were derived from the outputs of a landfill gas model developed by Veolia. In the Veolia model, the generated methane' and 'captured methane' are calculated by year. Captured methane is subject to either combustion for electricity generation, or flaring. However, the model does not provide this split, and the volumes for combustion and flaring were therefore derived for all years based on the ratio in the 2019-2020 NGER submission (ie approximately 87% combustion for electricity generation, and 13% for flaring). The historical data for flaring from the previous NGER submissions followed no systematic pattern, and therefore the application of the ratio from 2019-2020 to future years is subject to some uncertainty.(Appendix Q, Woodlawn ARC EIS, page A.4)

  The model used to determine the landfill gas outputs is not given context to justify the validity of the conclusions. Is the model specific to the Woodlawn bioreactor? Is it a model for optimal operations? Is the model supported by data obtained from Woodlawn and other bioreactors? What makes this model the best method for forecasting these emissions?
  Additionally, the model does not differentiate between combustion for electricity generation and flaring. The document also states that historical data for flaring follows no systematic pattern. This appears to cast doubt on the reliability of a) using the model, and b) any conclusions reached thereby. It appears to be an unreliable method of assessment.

- A.1.4 SF6 emissions

  SF6 emissions (in CO2-e) were taken directly from the 2019-2020 NGER submission, and were assumed to remain at the same level in the future. (Appendix Q, Woodlawn ARC EIS, page A.6)

  Why were Sulfur Hexafluoride emissions assumed to remain at the same level in the future?

- Table A.14 Parameters for calculation of baseline diesel consumption (road transport)
  D (km) 14(a) 60(d) (d) Estimated by EMM.
  (Appendix Q, Woodlawn ARC EIS, page A.11)

  Why was EMM estimating the distance travelled for local waste? Did Veolia provide data relating to the originating location of waste and the distance to transport it to Woodlawn? How were the distances estimated?

- Table A.12 Parameters for calculation of baseline gross tonne-km (rail transport) (Appendix Q, Woodlawn ARC EIS, page A.10)

  Footnote (j) - why has an estimate based on scaling from Banksmeadow been used rather than actual data for the Clyde facility? (Note: none of the footnotes match the table notations).

Typographical Errors/Misleading Statements

- Footnote numbers don't match the notations in graphs leaving the reader to surmise what data is applicable to which graphical representation. For example, Table A.5 on page A.5 and Table A.12 on page A.10.

- Numerous typographical errors, including the word 'ass' in close proximity to 'assume' on Page A.11.

- The ARC will be designed to recover energy from residual waste that would otherwise be disposed of to landfill ('Bioreactor') at the Eco Precinct. (Appendix Q, Woodlawn ARC EIS, page ES.1)

  Misleading statement. The Bioreactor is also designed to recover energy through landfill gas capture.

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