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Making a sustainable future possible together

Bromelton Energy and Resource Centre
Stakeholder Reference Group

Meeting #2 | 4 September 2025

Acknowledgement of Country

Cleanaway acknowledges the Traditional Owners of the lands on which we operate and in the communities in which we exist. Today we are discussing land under the custodianship of the Mununjali people.

We celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of this country.

We are proud to pay our respects to Elders past, present and future, for they hold the traditions and the cultures, and together we hold the hopes of a truly reconciled Australia.

Agenda

1. Welcome and introductions
2. Project update
3. BERC site plan & animation
4. Facility outputs – specialist presentations

   Paul Visser, Blue Phoenix: bottom ash and uses

   Natalie Shaw, Katestone: air quality and emissions controls
5. Responses to previous queries
6. Future SRG meeting topics
7. Actions and close

Project update

- Technical assessments are being updated based on a facility capacity of 760,000 tonnes of residual waste per year (12% of total waste sent to landfill in Queensland)
- Generate 73 megawatts of electricity – enough to power 105,000 homes
- On target for planning application submission to Queensland Government in early 2026
- Consultation in September 2025:
  - Provide latest information available about the proposed facility – size, layout, capacity, resources recovered, transport
  - Encourage feedback about potential issues to mitigate and opportunities for locals (online survey, info sessions)
- More consultation in 2026 (timing to be confirmed by Office of Coordinator-General):
  - Share technical assessments and reports

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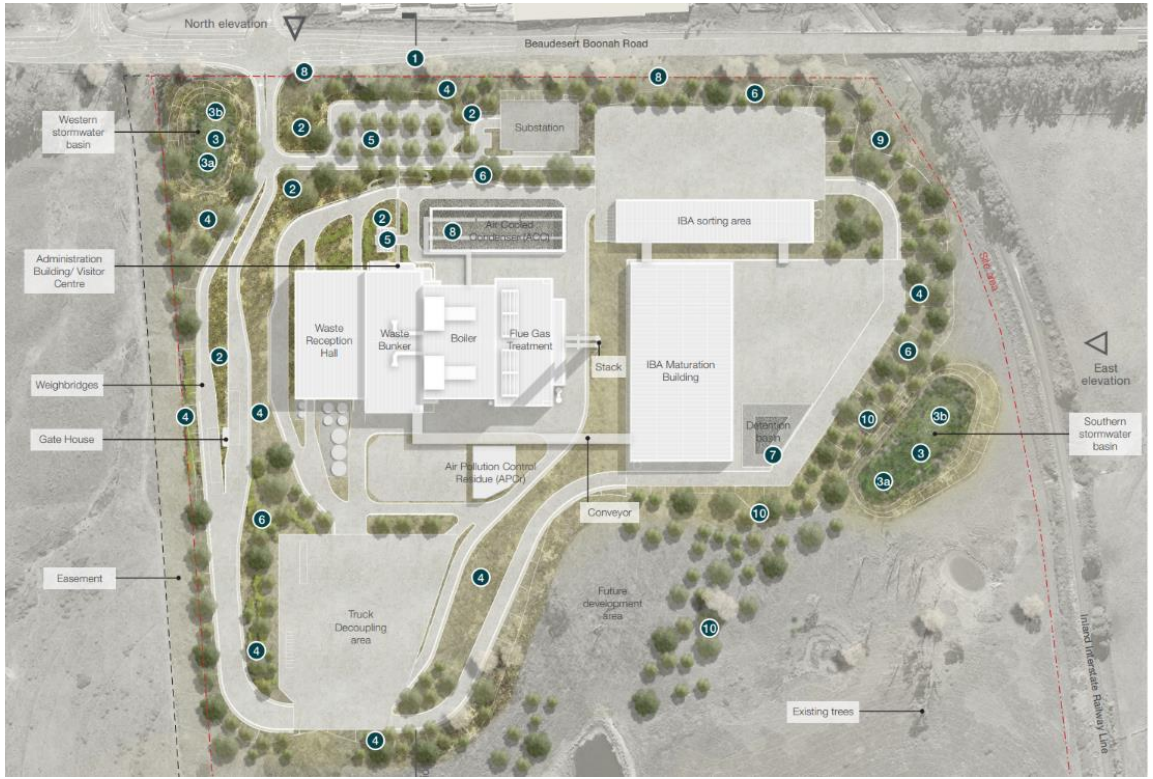
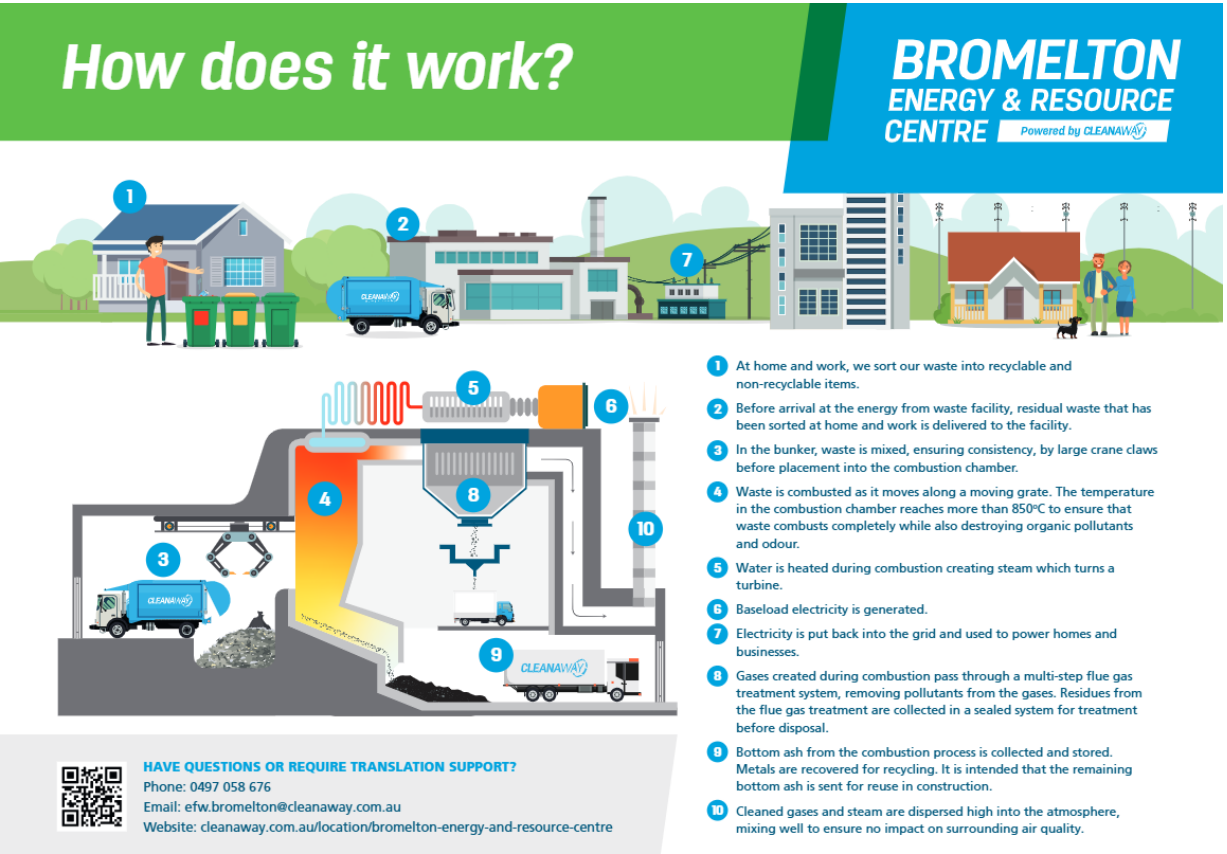
Updated site plan



1. **Arrival:** formal access to the facility.
2. **Accent planting:** the planting design assists with directing users to the visitor centre upon arrival to the site. This includes a dense understorey of native grasses and herbaceous plants which express seasonal variance in colour and texture. The palette references the rolling eucalyptus grasslands and hillsides of the Logan River floodplain, characteristic of the Bromelton area. This palette occurs at key arrival points including visitor centre area and at the main facility building administration area including along visitor travel route within the facility.
3. **Combined treatment and detention basins:** comprised of a bioretention basin (3a) and an on-site detention basin (3b) and planted with riparian vegetation including sedges, grasses and rushes to support improving water quality and habitat creation where possible. The bioretention basin functions as an ephemeral wetland, supporting bioremediation and water infiltration.
4. **Screening:** comprises a mix of regionally specific trees and large shrubs which visually integrate the facility into the landscape and mitigate visual impacts to receptors.
5. **Car park:** provide shade and improve visual amenity by maximising tree planting opportunity.
6. **Landscape treatment within the facility:** trees with understorey of native grasses and herbaceous species for amenity and shade. Trees and tall shrubs are not proposed to areas identified for future works.
7. **Shaded/maintenance areas:** loose gravel mulch is proposed to areas not suitable for planting to establish, such as shaded areas under heavy equipment and narrow areas of road median.
8. **Northern boundary:** infill tree and shrub planting between existing trees to further screen facility and reduce visual impacts to road users and adjacent property.
9. **Bushfire sensitive areas:** lower fuel load tree species with softscape treatments in accordance with ***Landscaping for Bushfire*** (2022) CFA.
10. Early planting: of perimeter screening vegetation mix to south-west embankments.

BERC animation

Deep dive topics: facility outputs



Specialist presentations on

- Incinerator bottom ash – treatment and use
- Flue gases – process and treatments

Deep dive into APCr next meeting

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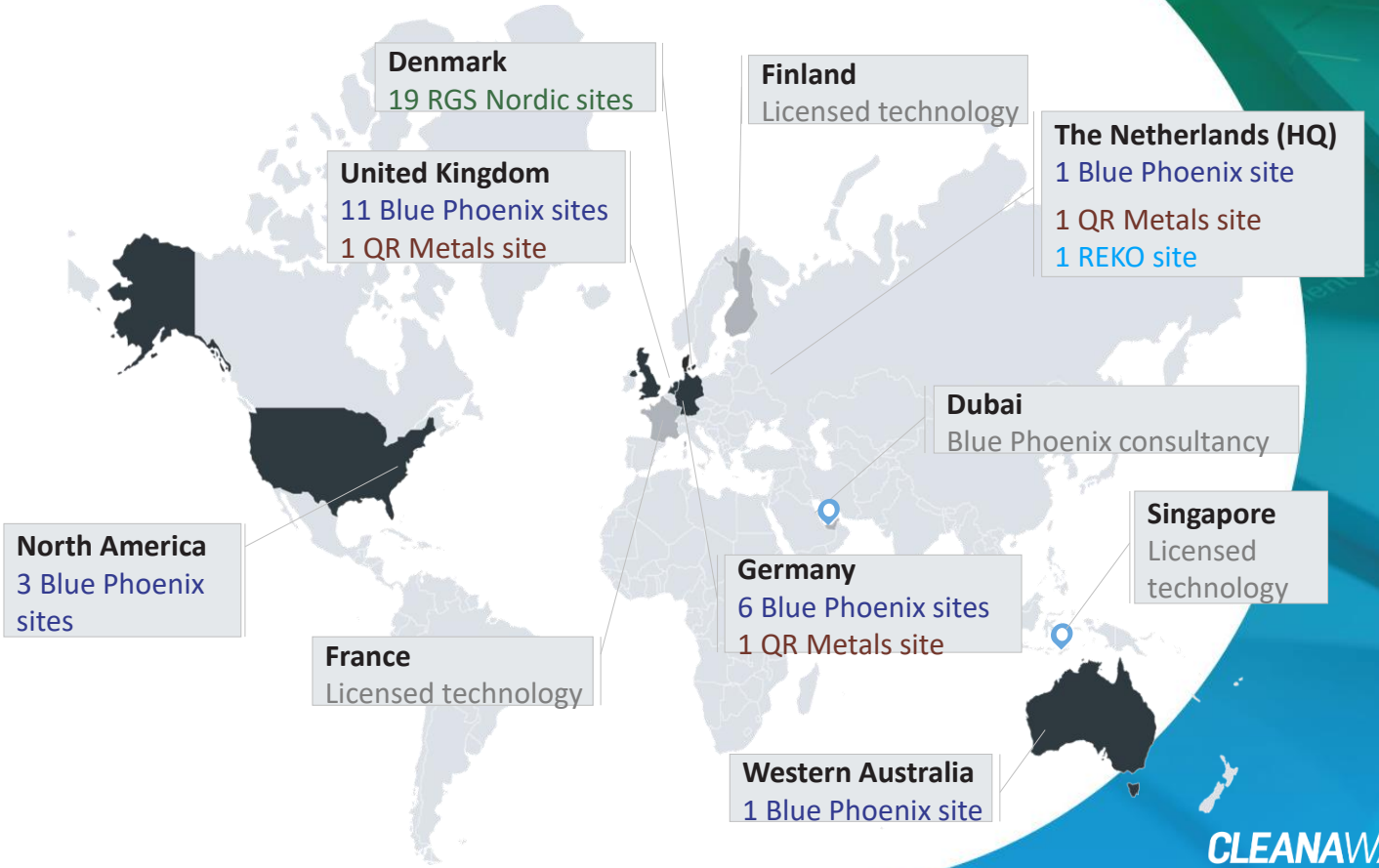
Global Presence of Blue Phoenix

- Headquarters in Rotterdam - Offices in EU, UK, USA, AU, UAE
- Over 25 years of experience
- > € 1 Billion Annual Revenue
- > 5 million tonnes per annum IBA processed globally



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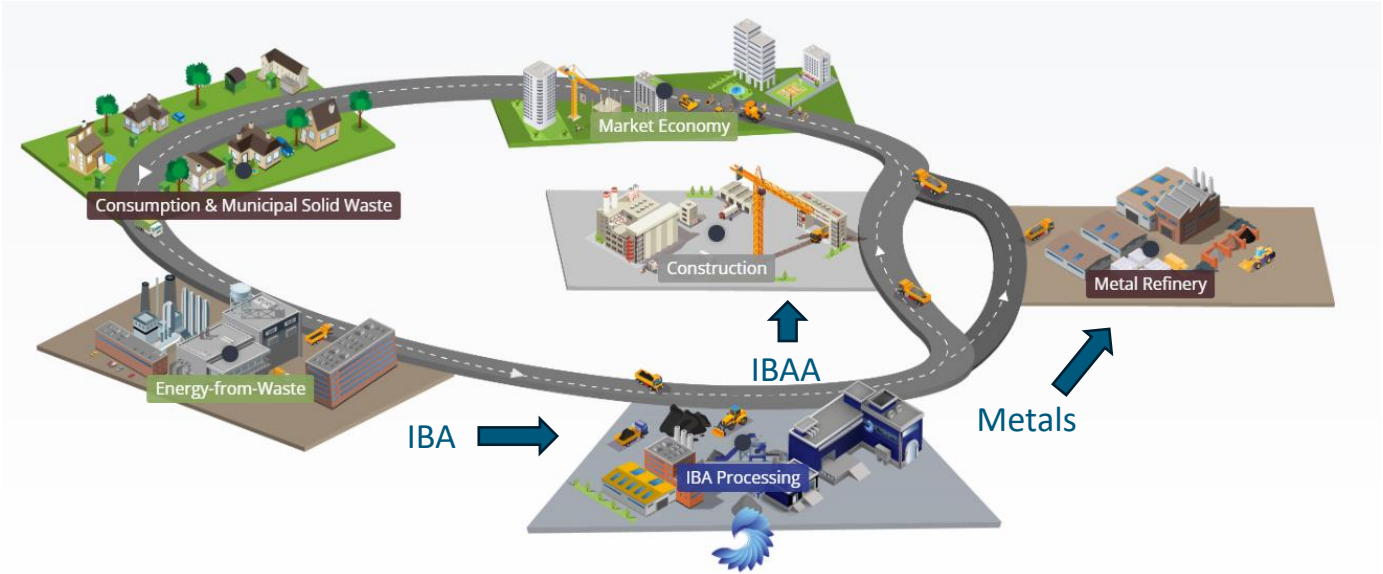
Bottom Ash to Product – Blue Phoenix



We support the global **circular economy** strategies, and we understand that we can't achieve our sustainability goals alone.

That's why we collaborate closely with EfW Plant Operators, Policymakers, Regulators, Engineers, and Scientists.

We serve the IBA market (upstream of our value chain) by helping our EfW partners handle their IBA in a compliant and sustainable responsible manner. Downstream, our value chain, we serve the metals and construction materials markets by providing them with key, low-carbon alternative products/materials.

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Bottom Ash to Product – Blue Phoenix

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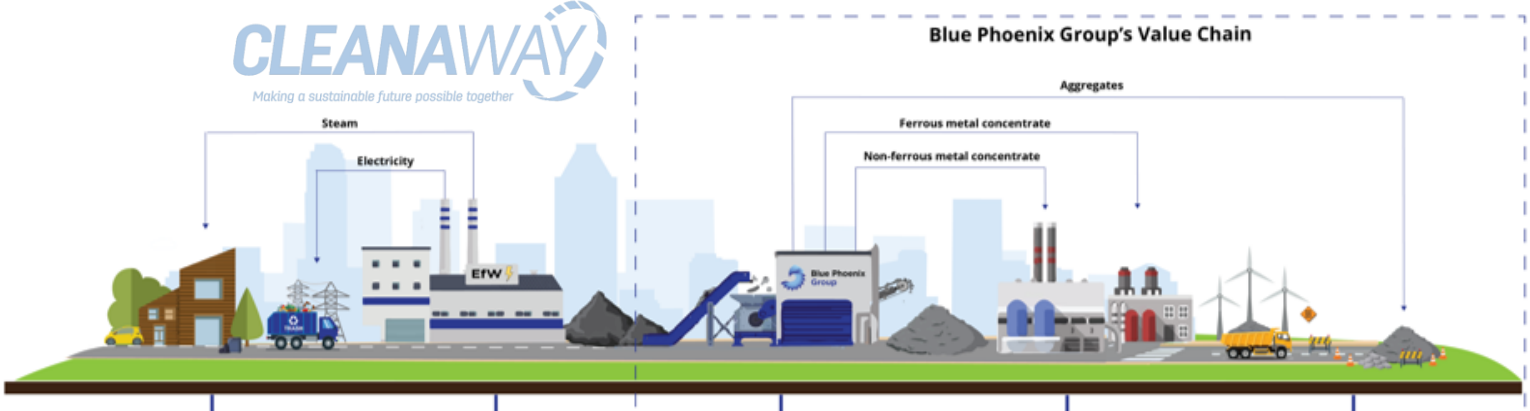

Municipal Solid Waste

Waste treatment accounts for **4%** of the **global Greenhouse Gas (GHG) emissions** (1).
Improving the sustainability of the waste sector is key to **reducing emissions** and increasing the **circularity of resources.**

Energy-from-Waste

The incineration of MSW produces energy and steam, which **warm houses** and **provide electricity.**
As a **byproduct,** a quarter of the initial volume is transformed in IBA. In Europe, about **20 million tonnes of IBA** are produced each year.

IBA Processing

Blue Phoenix Group specializes in the treatment of IBA, by:
- Extracting (fine) **ferrous** metals
- Extracting (fine) **non-ferrous** metals
- Cleaning the **mineral** fraction

Metal Refinery

Extracted metals are sent to one of Blue Phoenix Group's dedicated metal refineries to produce a **high-purity metal product,** suitable for the automotive industry

IBA Aggregates

The precise removal of metals allows Blue Phoenix Group to transform IBA minerals into **safe and reliable aggregates**, which can be used in **civil construction works** as a replacement for primary material.

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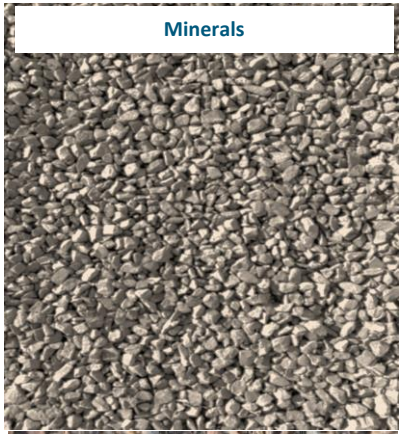
Pathways for Product Use – Blue Phoenix



Global Average

c. 85% — Processing solution

c.10-12% — Optimized metal recovery

c.2-3% — Advanced fine metal sorting

Closing the loop & landfill avoidance

Road construction

Concrete sector

Steel products

Electronics

Automotive

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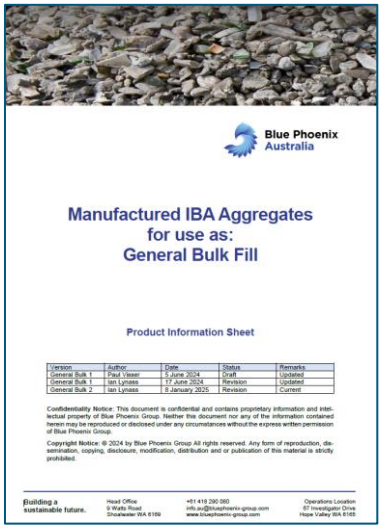
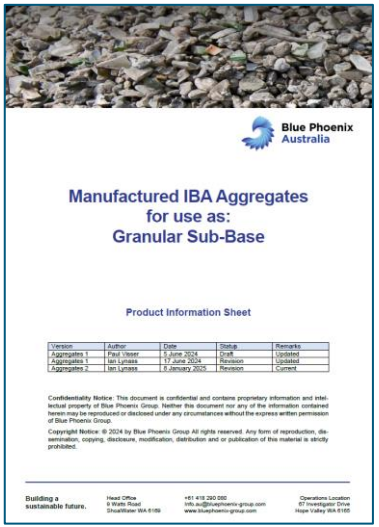
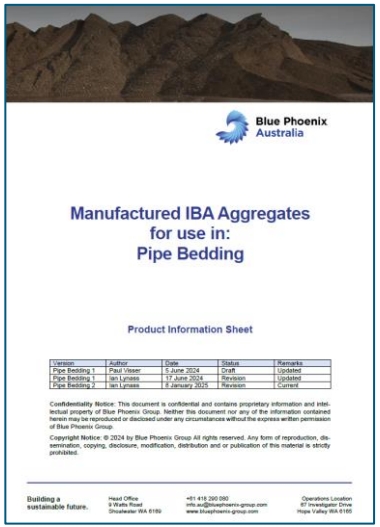
Pathways for Product Use – Blue Phoenix

Product Data Sheets







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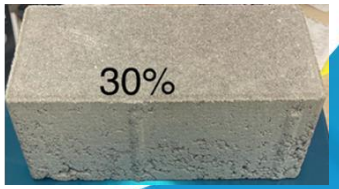

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IBA Testing – Blue Phoenix

- ✓ Testing to confirm non hazardous – weekly basis at WA
- ✓ Physical testing against MRWA 501 indicated IBAA suitable for sub-road base applications, allowing for interpretation of the aggregate type within the defined materials
- ✓ Leachability testing
- ✓ Aggregate behaviour in the cement matrix and mix ratios provides suitability for concrete aggregate for construction purposes
- ✓ Testing for engineering purposes by AS 2758.1 and AS 1289 indicate majority of test parameters within acceptable range including
  - ✓ Particle size distribution
  - ✓ Shape
  - ✓ Texture and Density
  - ✓ Water Absorption, and
  - ✓ Cleanliness

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Dust Monitoring at WA – Blue Phoenix

- ✓ On site dust monitoring equipment at various locations
- ✓ Weekly testing and analysis by independent laboratories
- ✓ Part of WA government operating requirements
- ✓ Results are well below the relevant air quality guideline acceptable criteria values
- ✓ Characterisation of critical parameters within risk to human receptor levels
- ✓ There is negligible to low risk to any of the Department of Water and Environmental Regulation (DWER) human identified receptors

100,000 Tonnes
IBA Capacity per year

76,000 Tonnes
Secondary aggregates circled back to the economy

20,000 tonnes
Metals extraction per year

Environmental Technologies & Analytics

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Blue Phoenix

Contact Details:

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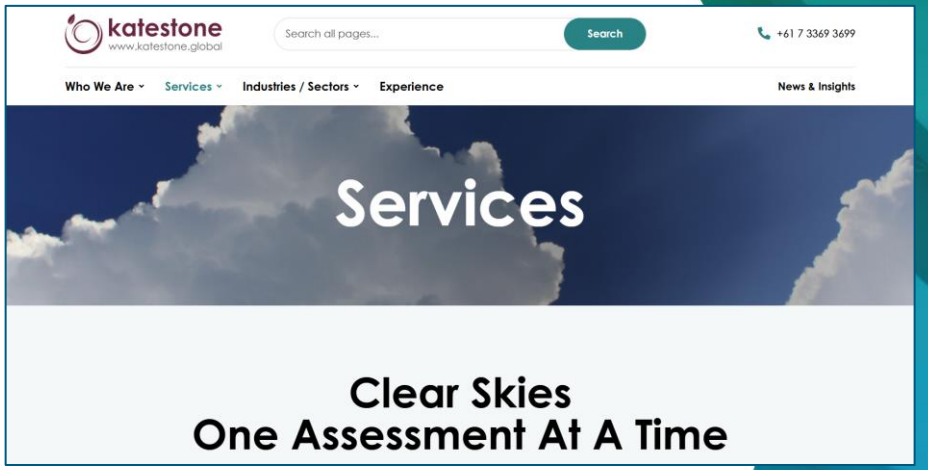
Natalie Shaw, Katestone

- Katestone's expertise lies in assessing the impacts of emissions to air (including air quality, odour and greenhouse gases) and analysing the effects of climate and climate change on projects and facilities.
- Katestone's fit-for-purpose studies have been instrumental in supporting numerous developments, enhancing operations, and mitigating risks across various sectors of the economy.
- https://katestone.global/services/
- Contact: Natalie Shaw natalie.shaw@katestone.com.au



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Air quality controls – Natalie Shaw, Katestone

Primary Air Emissions Control:

- Process design
- Automated combustion controls to control flue gas temperature and combustion
- Odour control
  - Tipping hall maintained under negative pressure
  - Odorous compounds destroyed in boiler

Secondary Air Emissions Control:

- All controls are in line with Best Available Technology (BAT)
  - Selective Non-Catalytic Reduction (SNCR)
  - Semi-dry scrubber with recirculation (with no scrubber effluent/wastewater)
  - Baghouse filter
  - Continuous emissions monitoring (CEM) of key pollutants
- Odour control
  - Tipping hall will have secondary odour control system activated during stand still
  - Equipped with an active carbon filter to eliminate odour

The stack is designed to maximise mixing in the atmosphere due to the height, temperature and speed of the air as it leaves the stack

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Air quality assessment – Natalie Shaw, Katestone

Construction

Operations

Routine and upset conditions

Assessing against air quality standards, guidelines and objectives

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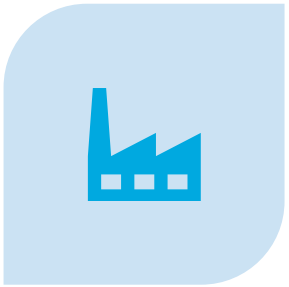
Air quality modelling – Natalie Shaw, Katestone

Terrain

Land use

Sensitive receptors



Existing emission sources

Ambient monitoring data

Proposed facility's emissions

Meteorological modelling to simulate three-dimensional wind field using synoptic data and local meteorological data

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Air quality modelling – Natalie Shaw, Katestone

- Dispersion model simulates how these emissions would be dispersed into the environment from the stacks
- Predict ground level concentrations of pollutants at receptors:
  - Commercial
  - Residential
  - Matters of National Environmental Significance
- Predict ground-level concentrations of pollutants across a 20km by 20km domain
- Compare with Queensland guidelines:
  - *Environment Protection (Air) Policy 2019*
  - *Environment Protection (Air) Amendment Policy 2024*

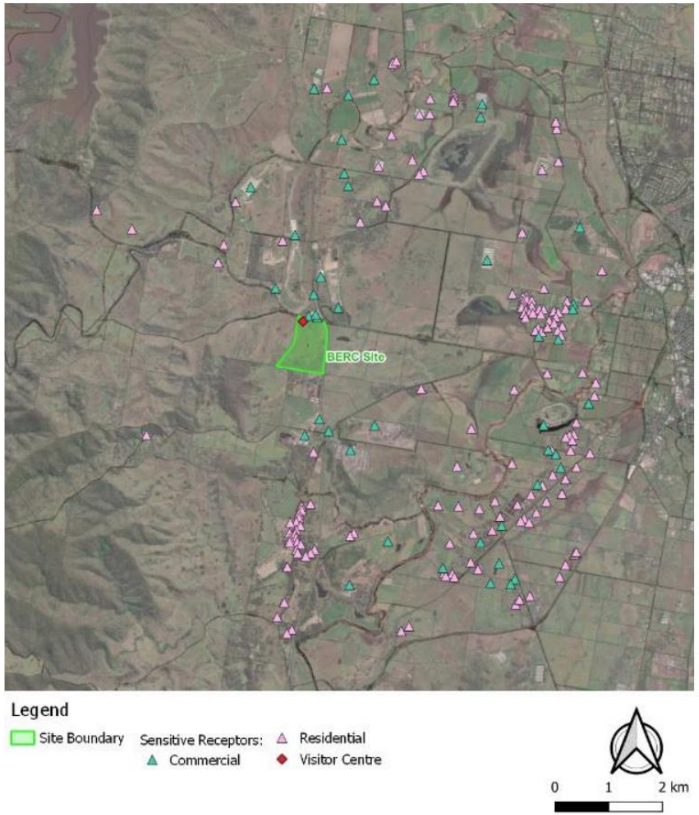

Figure 8 Selected sensitive receptors

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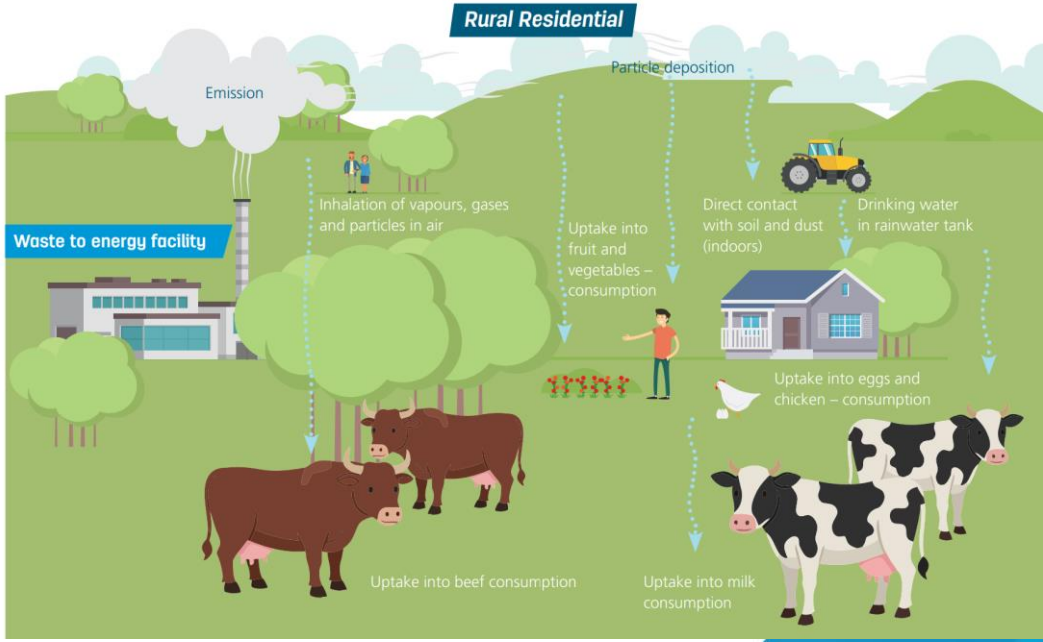
Human health assessment

- As part of the planning application a detailed human health risk assessment will be completed (currently underway by specialist consultants, Enrisk)
- This assesses multiple ways emissions from the stack can be exposed to humans like:
  - Breathing in gases and particles
  - Contact with soil or dust
  - Drinking rainwater
  - Eating locally grown produce (fruit, vegetables, meat, milk, eggs)
- The BERC design will ensure all potential exposures are well below health risk thresholds
- ***This assessment will be made available to the public in 2026 for review and consultation***



Responses to questions from SRG #1

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

1. What makes up residual waste?
2. What percentage of waste goes to different Cleanaway facilities? (recycling, landfill)
3. Site selection
4. Water supply to the BERC
5. Transport and traffic volumes
6. Office of Coordinator-General process and consultation
7. Workplace health & safety

Responses to questions from SRG #1

1. What makes up residual waste?

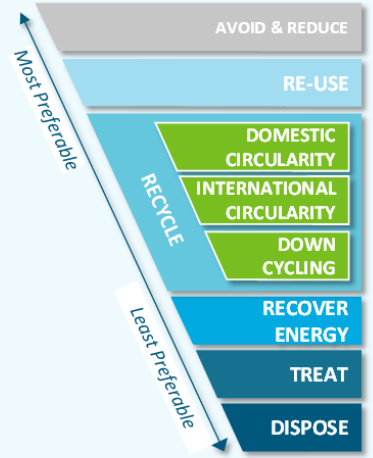
The BERC will process residual waste, which is the waste from homes, businesses and organisations, where source separation is in place to first remove waste that can be recovered or recycled. This is usually the waste placed in the red bin after sorting.

The residual waste typically includes items that cannot be recycled yet such as nappies and sanitary items, tissues, non-recyclable plastics and packaging, worn out clothing and other general household waste.

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

Responses to questions from SRG #1

Waste hierarchy



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2. What percentage of waste goes to different Cleanaway facilities? (recycling, landfill)

- ✓ Over $130 million invested in bottle-to-bottle plastic recycling plans
- ✓ Equivalent to 2 billion PET bottles recycled every year
- ✓ First in Australia HDPE/PP recycling plant processing 20,000 tonnes for recycled yogurt containers, milk cartons and person care packaging

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

Responses to questions from SRG #1

3. Site selection

Were any other sites considered and discounted before purchasing land at Bromelton ? Where were they? Why were they not considered suitable ?
Why was the Bromelton site a better location?
Was Cleanaway directed by the Qld Gov to locate their plant in this general area?

While Cleanaway considered other options, Bromelton stood out as the most suitable location due to its combination of appropriate zoning, central location, connectivity and the opportunity to partner with surrounding industry. Other sites were either not zoned for this type of operation, lacked transport and logistics advantages, or did not offer the same potential for industrial collaboration.

Cleanaway was not directed by government to locate at this site. This site was chosen due to its SDA and Special Industry Precinct for difficult to locate industry zoning. It is centrally located in South East Queensland with good connectivity and presents unique opportunity to partner with adjacent industry and operators for offtake of energy and resources recovered, and circular economy precinct opportunities.

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

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Responses to questions from SRG #1

4. Water supply to the BERC

- BERC will prioritise water reuse to minimise demand on the local water network. The design includes four 100kL rainwater tanks to capture and store rainwater for reuse across the site. Additionally, process water will be recycled internally wherever possible to further reduce reliance on external water supplies and support sustainable operations.

- Water use is estimated to be 500m^3/day (average of 6.4l/s).

- An exiting DN375 DI main which generally follows the Beaudesert Boonah Rd alignment terminates to the east of the BERC site.

- The main was built in 2018 in anticipation for the Bromelton SDA however there have been no customer connections to date.

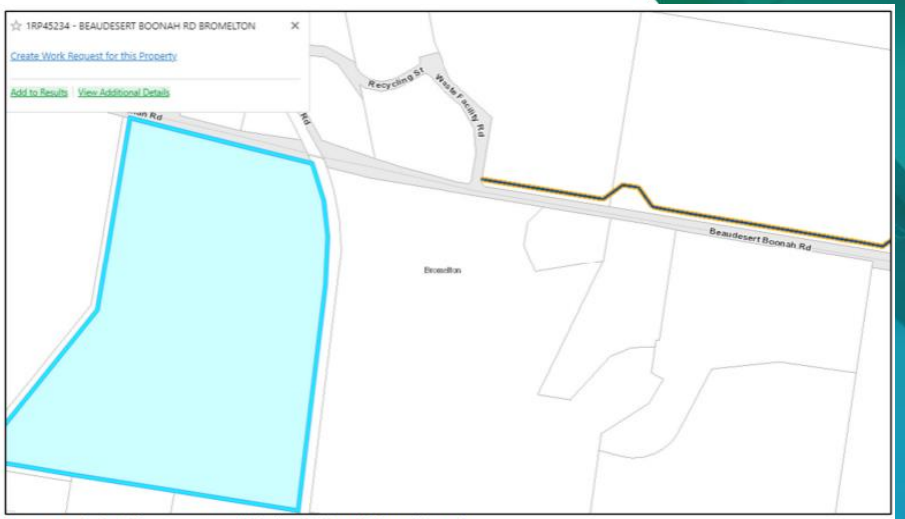

Figure 1: Existing infrastructure within the vicinity of the subject site

- A Service Advice Notice was sought from Queensland Urban Utilities (extract right).

- QUU have confirmed that there is sufficient capacity in the DN375 main to support the full BERC operational demand.

2. Urban Utilities has conducted additional modelling and can confirm that capacity is available within the existing DN375 main to accommodate for the increase water demand, assuming reconnection is established per 23-SAN-64867 advice. Prior advice indicated concern regarding water quality and adequate turnover of the existing DN375. The current proposed demand reduces water age within the existing main to within a more desirable range providing confidence water quality may be provided in accordance with drinking water standards. On this basis, Urban Utilities support the increased demand as it is necessary to effectively commission the existing main.

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

Responses to questions from SRG #1

4. Transport and traffic volumes

What are the proposed routes?
Trucks and vehicles will use different routes depending on where they are coming from. Key access roads are expected to include Beaudesert Boonah Road, Ipswich Boonah Road, Mt Lindesay Highway and the M1. A detailed route plan will be finalised before operations begin based on contract waste collection areas.

What measures have Cleanaway planned to avoid adding to & alleviating the transport 'bottleneck' that exists on existing transport routes to the Bromelton site ie Mt Lindesay Hwy, Boonah Beaudesert Rd, Beaudesert Tamborine Rd & Mundoolun Connecton Rd (to Canungra & Gold Coast)?
Cleanaway is preparing a detailed Traffic Impact Assessment which uses TMR methodology to identify impacts on the road network – this measures current traffic levels and estimates BERC-generated traffic. ***This assessment will be made available to the public in 2026 for review and consultation.***

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

Responses to questions from SRG #1

6. Office of Coordinator-General process and consultation

The Coordinator-General assesses and decides all SDA applications. As part of this process, the Coordinator-General decides if the application requires referral entity involvement. We expect the referral entities to be Department of the Environment, Tourism, Science and Innovation (DETSI), Department of State Development, Infrastructure and Planning (DSDIP) , Department of Primary Industries (DPI), SEQ Water, Queensland Urban Utilities (QUU), Energy Queensland (Energex), Transport and Main Roads (TMR), Scenic Rim Regional Council .

The public consultation policy helps the Coordinator-General determine whether an SDA application may be required to undergo public consultation. This process usually involves newspaper notice, site sign and letters to adjoining landholders. The public are invited to make submissions on the SDA application to the Office of the Coordinator-General online. Reports and application material will be made available during the public notification period (a minimum 3 weeks – to be confirmed by OCG).

Normally submissions are made online or via email during the public consultation. The method will need to be confirmed with OCG. Acceptance and consideration of submissions received outside of this period is at the discretion of OCG.

Referral and public consultation for the BERC are expected in mid 2026.

For more information:
Public consultation policy, State development areas
Referral and the role of referral entities

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

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Responses to questions from SRG #1

7. Workplace health & safety: statistics about accidents and incidents from similar facilities and what safety training is provided (initially and ongoing)

Robust training to cover hazard identification, emergency response, equipment handling, and ongoing refresher courses.

Cleanaway behavioural standards: a strong safety culture, with leadership accountability, employee engagement, and a Zero Harm approach.

Continuous monitoring, transparent reporting, and proactive risk reduction are essential to enhance safety outcomes.

Due to time constraints, this section was not discussed at SRG #2 – for future meeting discussion

Future SRG meetings

Next meeting: November 2025

What do you want us to cover in future meetings?

Deep dive specialist presentation topics?

Actions and close

- Summarise actions
- Meeting minutes distributed and on website