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LONG-TERM SAFETY AND SUSTAINABILITY

PROPOSED BLUE BUSH PROJECT

FACT SHEET

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THE PROPOSED BLUE BUSH PROJECT

The Issue

- Australia is one of the world's highest generators of hazardous waste per capita.
- Hazardous waste is growing at three times gross domestic product and five times population growth rates.
- In 2017-2018, Australia generated a total of 67 million tonnes of waste across four categories. Hazardous waste accounted for 12% of that (or 8 million tonnes).
- The east coast of Australia accounts for approximately 80% of the hazardous waste generated in Australia. NSW generates approximately 33%, while Queensland produces 27% and Victoria produces 20%.
- There is an approximately 1,035 million tonne legacy waste stockpile which is growing at approximately 45 million tonnes per annum.

Source: Blue Environment and Ascend Waste and Environment, 2019, 'Hazardous Waste in Australia 2019'. Prepared for the Department of the Environment and Energy. Accessed at: https://www.environment.gov.au/protection/publications/hazardous-waste-australia-2019.

The Problem

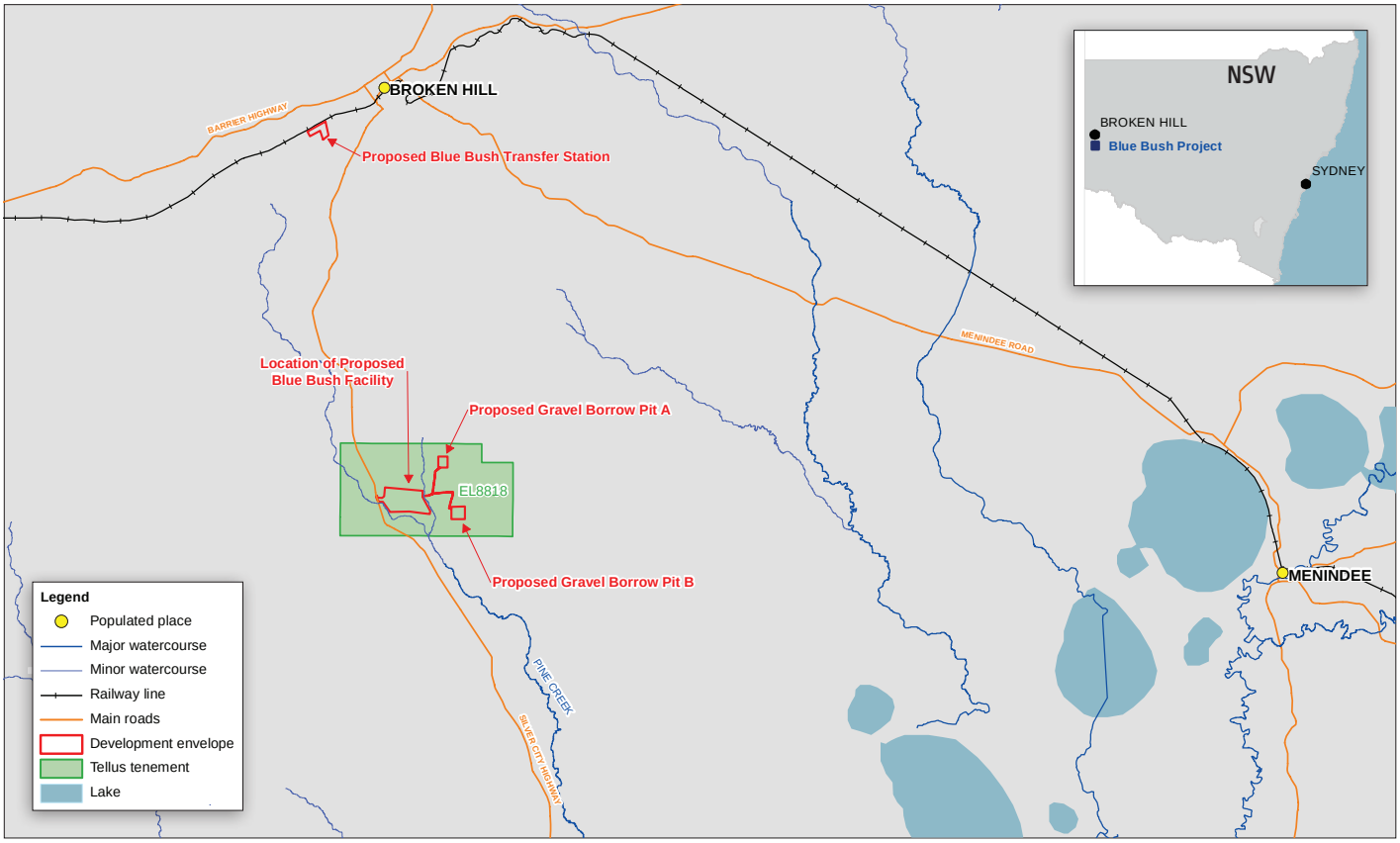
Tellus' opinion is that:

- Australia and NSW do not have sufficient infrastructure to deal with legacy, current and emerging hazardous waste volumes.
- Many traditional hazardous waste management options are intermediary. They are costly and not sustainable in terms of power usage and carbon footprint.
- Many also produce hazardous by-products, especially where engineered liners have failed leading to significant legacy contamination problems that require ongoing remediation requirements.
- Many of the traditional hazardous waste management options are not viewed today as world's best practice.
- As a result of this emerging and widespread environmental problem, governments globally have banned disposing of certain hazardous waste into engineered landfills.

The Solution

- Geological repositories are final fate infrastructure capable of permanently isolating hazardous wastes.
- The proposed Blue Bush Facility is a near-surface geological waste repository. If approved, it would be located approximately 45 kilometres south of Broken Hill in NSW (refer to Figure 1).
- The proposed Blue Bush Facility would be supported by a transfer station (referred to as the 'Blue Bush Transfer Station') located adjacent to the industrial precinct of Broken Hill, outside of the Broken Hill Local Government Area (refer to Figure 1).
- The proposed Blue Bush Facility and Blue Bush Transfer Station are collectively referred to as the 'Blue Bush Project'.
- The Project could support the circular economy.

Figure 1: Location of proposed Blue Bush Facility and Blue Bush Transfer Station



Tellus Holdings Ltd endeavours to ensure this map is free of errors but does not represent or warrant (either expressly or impliedly) that the map or its features are accurate or fit for a particular use.

Potential Benefits of the Proposed Blue Bush Project

If approved, the proposed Blue Bush Project may result in significant and long-term positive environmental, social and economic benefits to the Broken Hill region, NSW and Australia.

These benefits include:

- Developing innovative infrastructure that can permanently isolate and create long-term storage opportunities for hazardous chemical wastes.
- Supporting the circular economy and additional jobs by providing an opportunity for the future potential recovery of valuable materials (that are currently deemed waste) as opposed to the old linear economy of 'mine, manufacture, use and dispose' (refer to Figure 2).
- An opportunity to clean up known legacy lead issues in Broken Hill.
- Opportunities for sustainable, long-term employment and training at a local and regional scale in NSW.
- About 80-120 full time equivalent (FTE) and 200 – 300 indirect jobs generated during the peak of construction.
- About 50-90 FTE jobs and 100-225 indirect jobs generated during operation.
- Diversifying local and regional economies in the Far West Region of NSW.
- Boosting the local and regional economy during construction and in operation.
- Providing local business support.
- Fulfilling the Australian and NSW government's environmental and waste policy obligations.

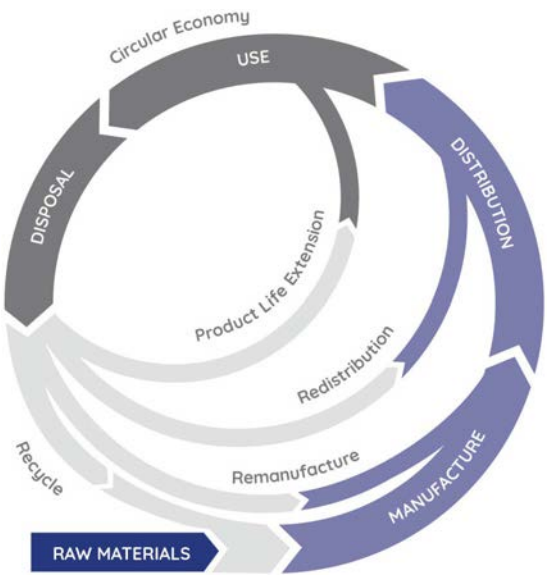


Figure 2: The circular economy

Wastes Not Accepted - Presented in Table 1.

Types and Forms of Accepted Wastes

Waste material would be subject to Tellus' strict Waste Acceptance Criteria (WAC) that must be approved by the NSW EPA and, is necessary for the environmental and human health safety of the Blue Bush Facility (refer to Table 1).

Wastes accepted could include:

- Acid compounds.
- Arsenic compounds.
- Contaminated soils including PFAS
- Electronic waste.
- Fly ash.
- Lead compounds.
- Liquid chemical waste could be accepted, but only if it is immobilised (i.e. made solid).
- Mercury compounds.
- Naturally Occurring Radioactive Material (NORM).
- End of life solar panels and electric batteries.
- Zinc compounds.

Tellus would seek an operational licence for the above waste types under Schedule 1 of the Protection of the Environment Operations (Waste) Regulation 2014 (NSW). The above waste types are also part of the National Environment Protection (Movement of Controlled Waste between States and Territories) Measure (NEPM 75).

Sources of Waste

Waste would be sourced from a variety of industry sectors including agriculture, site remediation, industry, manufacturing; mining and oil and gas and utilities.

Waste would be accepted from NSW, other neighbouring states and territories in Australia, and from Australia's Exclusive Economic Zone (EEZ). All waste types listed above and transported within NSW or interstate would be tracked.

Table 1:
Waste accepted and not accepted at the proposed Blue Bush Facility/Blue Bush Transfer Station

TYPE OF WASTE	Accepted on-site for surface storage	Accepted below-surface in waste cells
Hazardous waste subject to meeting the characteristics criteria below:	✓	✓
• Liquid and sludges	✓	✗[1]
• Explosive wastes	✗[1]	✗[1]
• Flammable liquids or solids	✓	✗[1]
• Self-combusting wastes or wastes that can generate a gas-air mixture which is toxic or explosive	✓	✗[1]
• Highly corrosive or oxidizing	✓	✗[1]
• Gases (greater than 5% in volume)	✓	✗[1]
Clinical waste (e.g. infectious hospital waste and body parts)	✗	✗
Municipal solid waste (putrescible household and commercial waste)	✗	✗
Uncertified waste (which cannot be identified or has not undergone characterisation testing)	✗	✗
Exempt Waste (EW)[2] (e.g. wastes containing radionuclides at concentrations that does not require regulatory oversight such as NORM wastes from the solar and electric car battery industries)	✓	✓
Very Low Level Waste (VLLW)[2] (e.g .wastes from medical, industrial, research and NORM industries with activity concentration levels at or just above exempt limits that require consideration of radiation protection and safety)	✗	✗
Low Level Waste (LLW)[2] (e.g. oil and gas industry scale)	✗	✗
Intermediate Level Waste (ILW)[2] **and High Level Waste (HLW)**[2] (e.g. reprocessed spent nuclear fuel and components with high levels of radioactivity)	✗	✗
Nuclear waste[3] (e.g. from power generation and defence use)	✗	✗

[1] Normally excluded unless modified in accordance with Tellus' WAC before disposal or during disposal so that the operational and post closure safety of the waste cell and facility is not compromised.
[2] Classification of Radioactive Waste as per ARPANSA RPS 20 and Definition as per Section 21 and 22 of the EPBC Act.
[3] Definition as per Section 21 and 22 of the EPBC Act.

✓ = Accepted; ✗ = not accepted; ✗[1] = normally excluded, but possibly suitable.

Project Description

The proposed Blue Bush Facility would involve the construction of waste cells just like the ones shown in Figure 3. The cells would be used to permanently isolate and/or provide long-term storage of hazardous waste materials. They may be covered with a special cover, just like the one shown in Figure 4.

Up to a maximum of 200,000 tonnes per annum of hazardous chemical waste could be accepted at the proposed Blue Bush Facility. The life of the Blue Bush Project could be up to 25 years.

The proposed Blue Bush Facility would be supported by a transfer station (to facilitate the transport of waste between rail and road) - the proposed Blue Bush Transfer Station. The Blue Bush Transfer Station would be located adjacent to the Sydney to Adelaide Railway Line, adjacent to the industrial precinct of Broken Hill, outside of the Broken Hill Local Government Area.

Waste materials would be transported from the Blue Bush Transfer Station via the Silver City Highway to the Blue Bush Facility.

Infrastructure linked to the proposed Blue Bush Facility and Blue Bush Transfer Station will be detailed in an Environmental Impact Statement (EIS).

Figure 3: Clay is extracted creating a pit (top). The pit is then used for the safe and secure storage of waste in sealed containers (bottom).

Figure 4: A cell cover at Tellus' Sandy Ridge Facility in WA.

Future Opportunities for the Recycle and Recovery of Waste

The proposed Blue Bush Project will also be studied as a potential future Circular Economy Park (CEP). A CEP is where valuable materials could be recycled and recovered.

The CEP would be subject to additional stakeholder engagement, studies and separate approvals. It is not currently part of the proposed Blue Bush Project.

Environmental Impact Assessment of the Blue Bush Project

The Blue Bush Project will be assessed as State Significant Development under Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (NSW). An EIS will be required to accompany a Development Application to the NSW Department of Planning, Industry and Environment.

The Blue Bush Project may also be assessed under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cwlth).

If approved by the NSW Government, a final investment decision will be required by the Tellus Board of Directors. At that point in time, construction can begin.

Licensing and regulation of the Blue Bush Facility would principally be required under the *Protection of the Environment and Operations Act 1997* (NSW) and associated Regulations.

Project timeframes

- The EIS is likely to be submitted by Tellus in 2021.
- Tellus is aiming for a three-year approval time frame for the Blue Bush Project. However, the final approval timeframe is dependant on the NSW environmental planning approval process.
- A final investment decision is required before construction can commence.
- Construction is likely to take 18-24 months.
- Operating life would be up to 25 years.

GET IN TOUCH AND HAVE YOUR SAY

Visit our project website: **www.tellusholdings.com/projects/bluebush**

Phone us at: **+61 (02) 8257 3395**

E-mail us at: **bluebush@tellusholdings.com**

Or visit the NSW Government website: https://www.planningportal.nsw.gov.au/major-projects/project/39691

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We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging.

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