Redbank Power Station

Independent Planning Commissions Briefing

SSD-56284960

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NSW GOVERNMENT

Agenda

- IPC Opening Statement
- Department Introductions
- Project Overview
- Energy Context
- Environmental Context
- Other matters
- Meeting Close

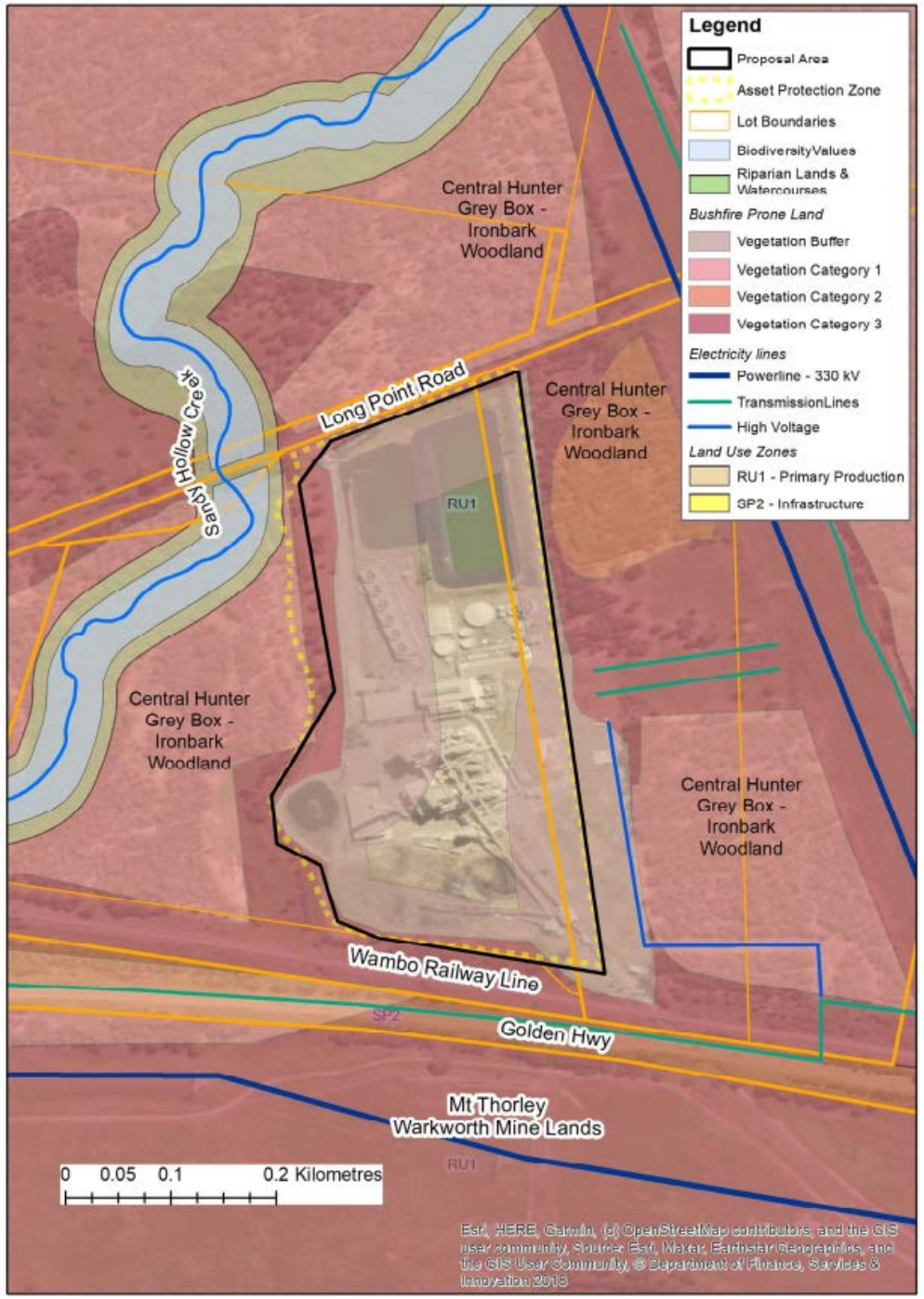
The Project

- The project
- Project description
- Department’s assessment
- Independent expert advice

Redbank Power Station

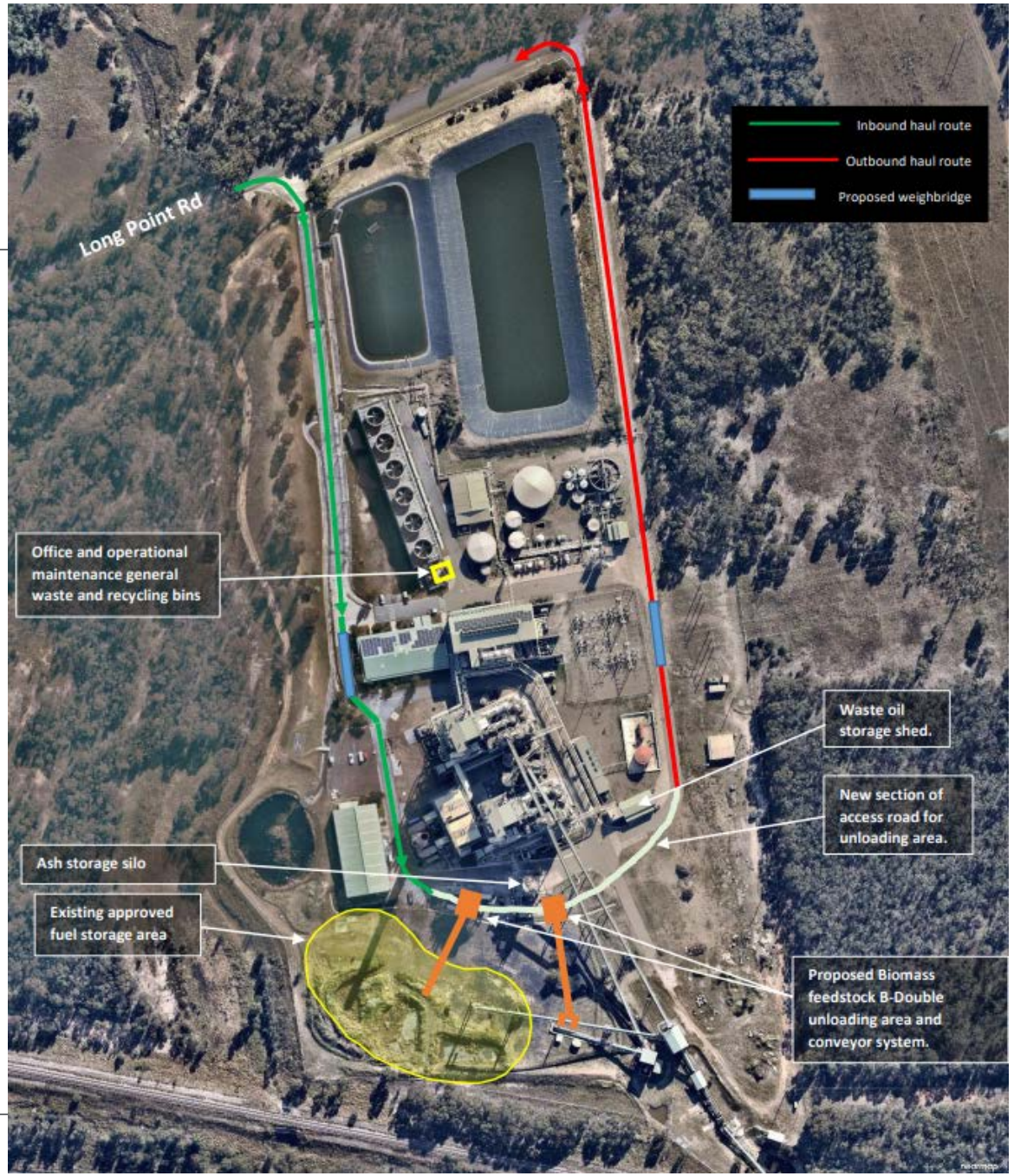
The Project

- Redbank Power Station is located at 112 Long Point Road West, Warkworth in the Singleton LGA.
- Originally approved and constructed under DA 183/93 as granted by Singleton Council on 23 March 1994 and amended by the NSW LEC on 10 November 1994 following a merit appeal.
- Operated by Redbank Power Company Pty Ltd with approval to burn up to 700,000 tpa of coal tailings from the adjacent Warkworth and Lemington mines until care and maintenance in October 2014.
- Purchased in 2018 by Verdant Earth, with a modification submitted to Singleton Council in November 2020 to enable the use of biomass, which was refused and the subsequent appeal lodged to the NSW LEC dismissed.



Project description

- Verdant Earth Technologies Limited (Verdant Earth) (the applicant) proposes to restart the existing power station using biomass as a fuel source.
- The power station would have a capacity of up to 151 MW and would operate 24/7 with the use of up to 700,000 dry tpa of biomass.
- Construction activities would be required to modify the power station to enable the use of biomass as a fuel source.
- The project has a CIV of over $70 million and would create approximately 330 construction jobs and up to 60 operational jobs.



Summary of the assessment

- Key risks are:
  - the general compliance with the Energy from Waste framework; and
  - potential for impacts to human health from air quality emissions from the combustion of biomass
- The Department's assessment concluded:
  - the project could comply with the existing regulatory framework for the management of standard fuels and EWFs
  - emissions from the power station can generally meet the relevant air quality assessment criteria
  - commercial risks must be managed by Verdant to achieve an economically viable project
  - other environmental impacts are generally minor and/or manageable under the proposed mitigation measures.

Independent expert advice

Independent Review Report (Arup)

- Merit assessment:
  - Feedstock availability
  - Processing capacity of the facility
  - Compliance with the EFW Policy and EWF Guidelines
  - Suitability of proposed technologies and handling capabilities for the feedstocks
  - Emission control techniques and monitoring

Response to Independent Review Report (Verdant)

- Detailed responses to each item in independent review
- Risk assessment of biomass fuel supply

Independent Review of Responses (Arup)

- Updated merit assessment
- No outstanding moderate or critical items
- Residual commercial risks

Final Comment (Verdant)

- Generally agrees with findings and recommendations

Key Issues

- Energy from Waste Guidelines
- Biomass fuel
  - Sourcing and availability
  - Purpose grown fuel strategy
  - Ash management

Energy from Waste Guidelines

(a) ability to demonstrate to the EPA that the proposed waste consistently meets the definition of an EPA-approved eligible waste fuel

(c) fully characterise the waste and/or undertake proof of performance

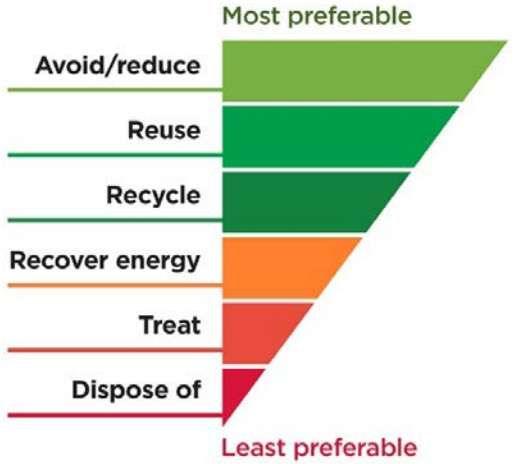
- Eligible waste fuels will be managed under specific resource recovery orders and exemptions (SRROEs) managed by the NSW EPA and Verdant Quality Control and Quality Assurance Plan.
- Domestic biomass fuel will be excluded as a fuel as it does not currently qualify as an EWF.

(b) confirm there are no practical, higher order reuse opportunities for the waste

- Higher order uses for wastes have been assessed in the Higher Order Use Study as part of the Submissions Report.
- Ultimate use of feedstock would depend on compliance with the framework under the EWF Guidelines and EfW Policy including further higher order use assessment.

(d) meet the relevant emission standards as set out in the Clean Air Regulation

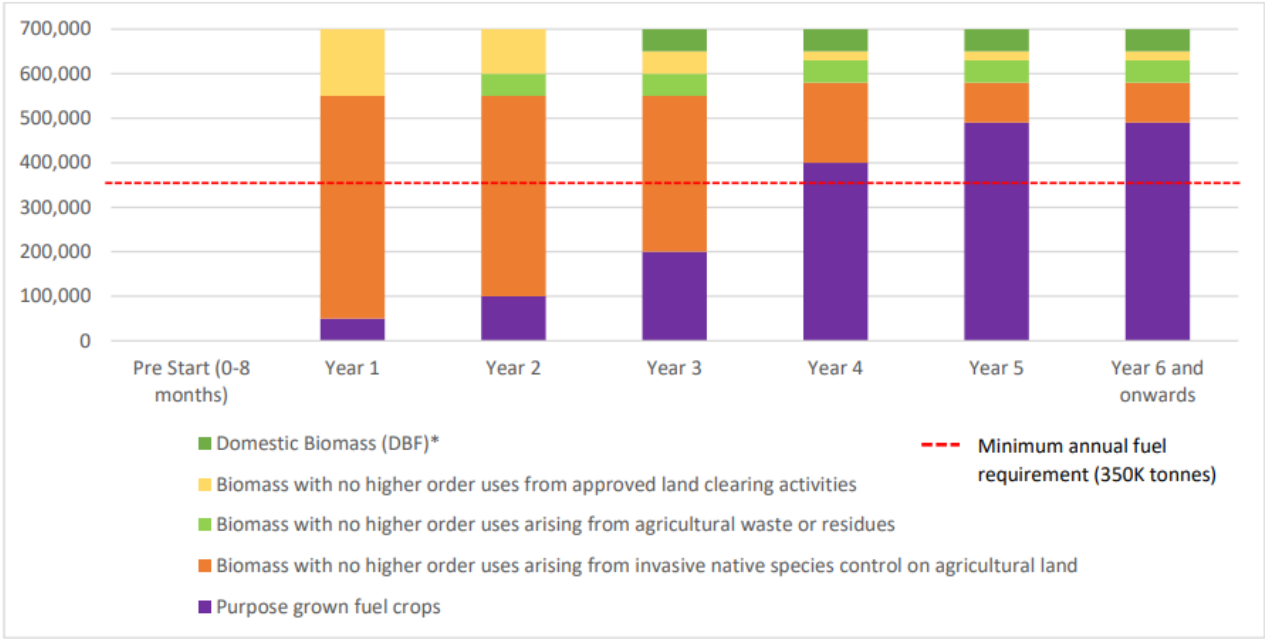
- EPA advised that the scenarios modelled in the AQIA predicted compliance with relevant assessment criteria based on the use of standard or EWFs only.



Biomass fuel - sourcing and availability

Sourcing and availability

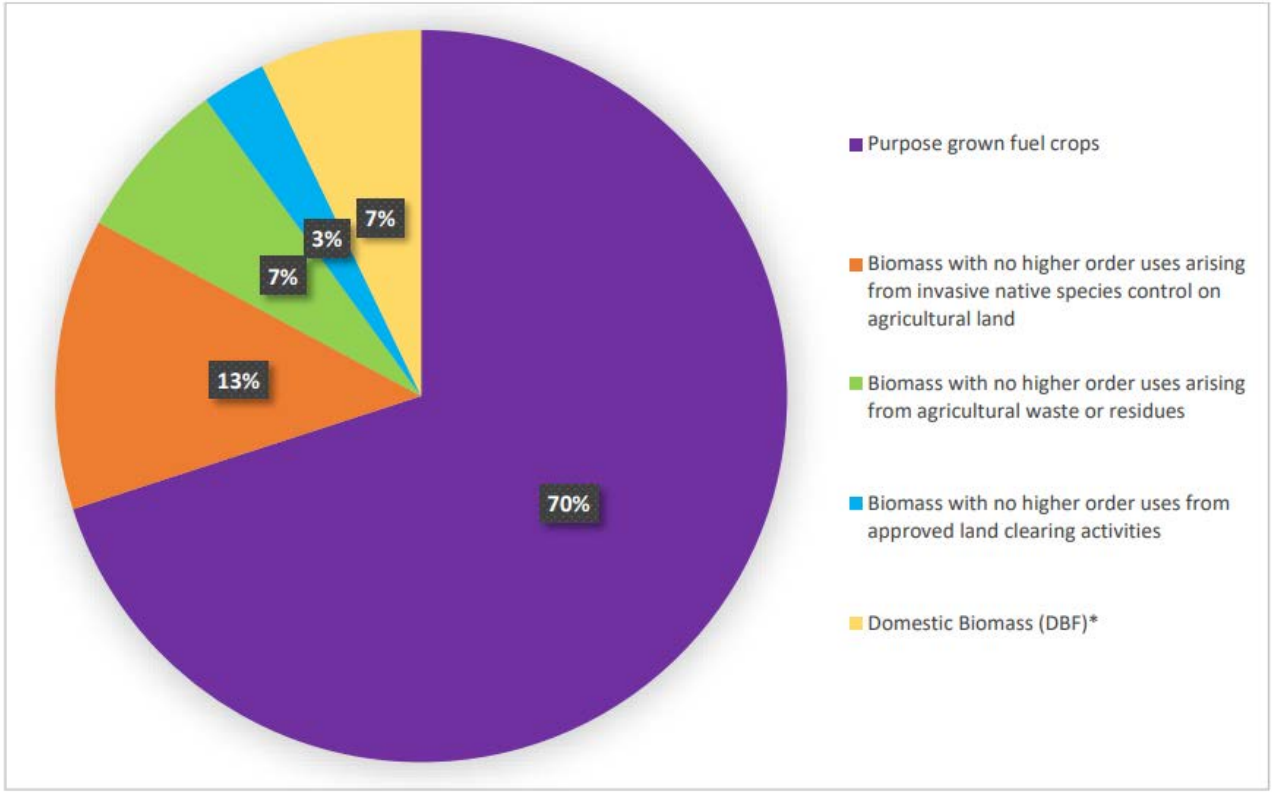
- Standard fuels (defined by the the Clean Air Regulation):
  - purpose grown energy plantations, perennial grasses, and energy crops defined as wood or wood-derived; and
- Eligible waste fuels (EWFs) (defined by the EWF Guidelines):
  - invasive native species (INS) waste; waste from approved land clearing; agricultural residues; and uncontaminated wood waste (UWW).
- Managed by:
  - Quality Control and Quality Assurance Plan
  - Energy from waste framework.



Biomass fuel – purpose grown fuels

Purpose grown fuel strategy

- Standard fuels including purpose grown plantation will form approximately 490,000 t (~70%) of the required 700,000 tpa of dry biomass for ongoing operation (Year 5 onwards).
- Managed by:
  - Quality Control and Quality Assurance Plan.



Biomass fuel – ash management

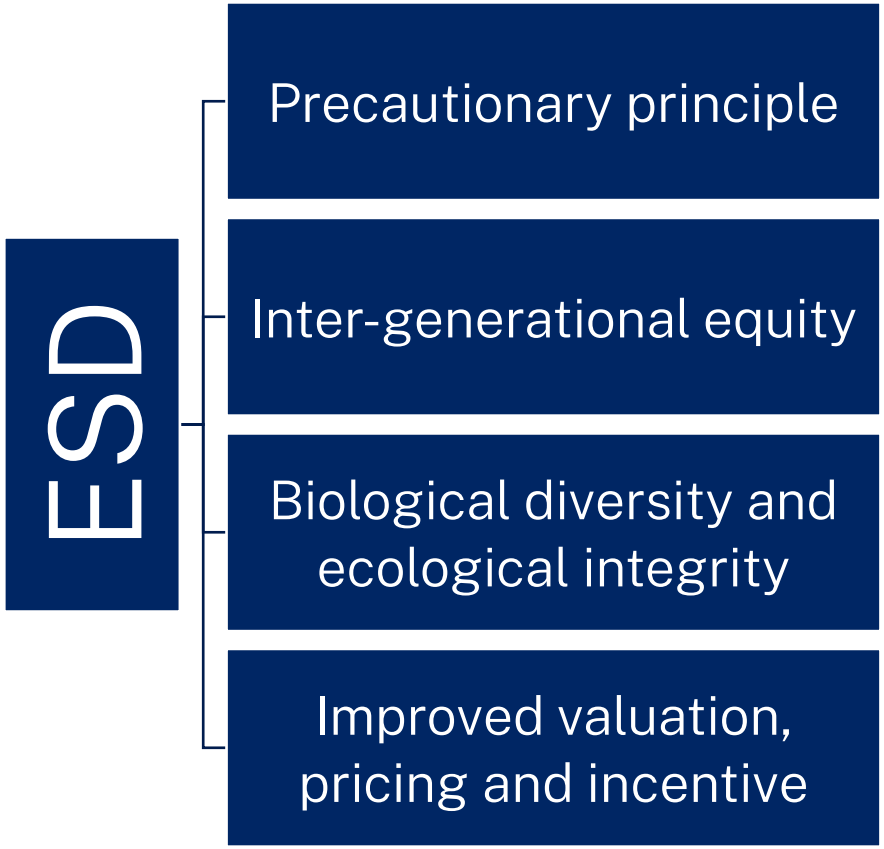
Ash management

- Ash would be generated as a byproduct of the combustion of biomass at a maximum rate of approximately 42,500 tpa.
- Ash will be stored in the existing storage silo for this purpose in the plant and will be trucked off-site for reuse.
- Managed by:
  - Quality Control and Quality Assurance Plan.

Environmental Context

- Ecologically sustainable development
- Air quality
- Greenhouse gas emissions and climate change
- Offsite biodiversity impacts
- Other environmental impacts

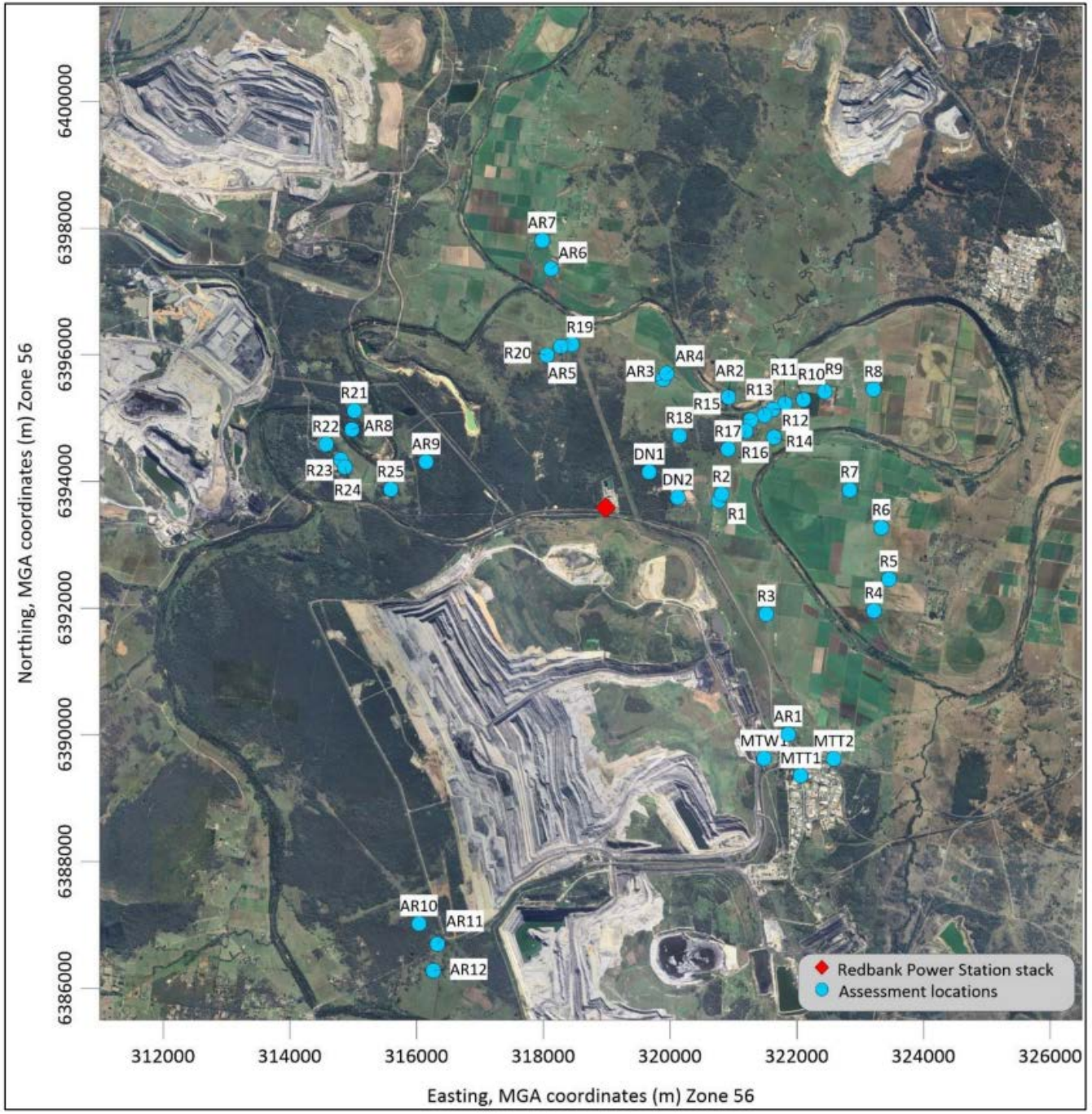
Ecologically sustainable development



- Verdant has addressed all issues raised by key government agencies including the EPA and addressed all key issues identified by the independent expert for this stage of the project.
- Consistent with the NSW strategic policy framework for actions to address climate change.
- Existing power station with minor modifications necessary, reducing impacts to biodiversity.
- The Department has recommended a range of conditions to manage any residual environmental impacts.

Air quality and human health impacts

- EPA requested further information on several matters relating to the assessment of potential impacts from proposed fuels.
- Upon review of the AQIA addendum, no residual issues were raised by EPA.
- Existing background concentrations for annual average PM10 and PM2.5 were already above the impact assessment criteria for the year selected for modelling (2018), with contribution of the project being minor (approximately 1% incremental contribution to the ambient air concentration).
- Air emissions limits would be in accordance with the strict requirements of the Clean Air Regulation under the EPL and consistent with the recommendations of the EPA.



Greenhouse Gas, climate change and offsets

- EPA requested further information on several matters including in relation to the assessment methodology to calculate greenhouse gas emissions.
- Upon review of the AQIA addendum which included revised calculations, no residual issues were raised by EPA.
- Negligible contribution to global emissions of 0.00003% based on IPCC projections of global emissions for 2030 (total global emissions 52-58 gigatonnes).
- Emissions would represent a small (0.1% by 2050) contribution to NSW emissions and would be offset in line with the emissions reduction trajectory for NSW.

Scope 1 emissions

Financial year	CO_2 (t CO_2-e/year)	CH_4 (t CO_2-e/year)	N_2O (t CO_2-e/year)	Total (t CO_2-e/year)
2025/26 to 2054/55	634.1	1,428.9	15,709.8	17,772.8

Scope 3 emissions

Financial year	3A: Off-site processing Diesel (t CO_2-e/year)	3B: Off-site transport Diesel (t CO_2-e/year)	3C: On-site handling Diesel (t CO_2-e/year)	3D: On-site start-up Diesel (t CO_2-e/year)	Total (t CO_2-e/year)
2025/26 to 2054/55	2,303.3	17,315.5	116.9	40.1	20,641.5

Offsite biodiversity impacts

- Native forestry residues from logging are explicitly excluded as a potential feedstock.
- Clearing of INS is permitted under the *Land Management (Native Vegetation) Code 2018* and regulated under the *Local Land Services Act 2013*.
- Ultimate use of feedstock would depend on compliance with the framework under the EWF Guidelines and EfW Policy including further higher order use assessment for SRROEs.

Landholder estimates of available INS volumes (t)

Landholder	Region	Estimated volume available for management and supply
1	Bourke	1,200,000
2	Cobar	600,000
3	Cobar	2,400,000
Total available		**4,200,000**

Source: Stakeholder engagment

Estimated available INS biomass volume (tpa)

	Lower 15 tonne/ha	Central 25 tonne/ha	Upper 35 tonne/HA
Total hectares approved 2018 - 2023	640,709	640,709	640,709
Estimated hectares approved for clearing per year	125,000	125,000	125,000
Assumed 50% of approved hectares clearing per year	62,500	62,500	62,500
Estimated tonnes / year	937,500	1,562,500	2,187,500

Other impacts

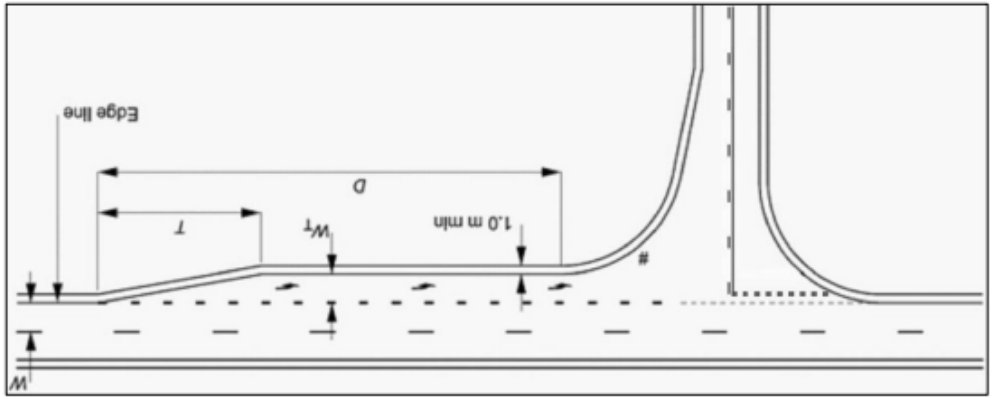
- Soil, water and contamination
- Economic
- Social
- Aboriginal and historic heritage
- Hazard and risk
- Biodiversity

Other matters

- Traffic
- Noise and vibration
- Community consultation and engagement

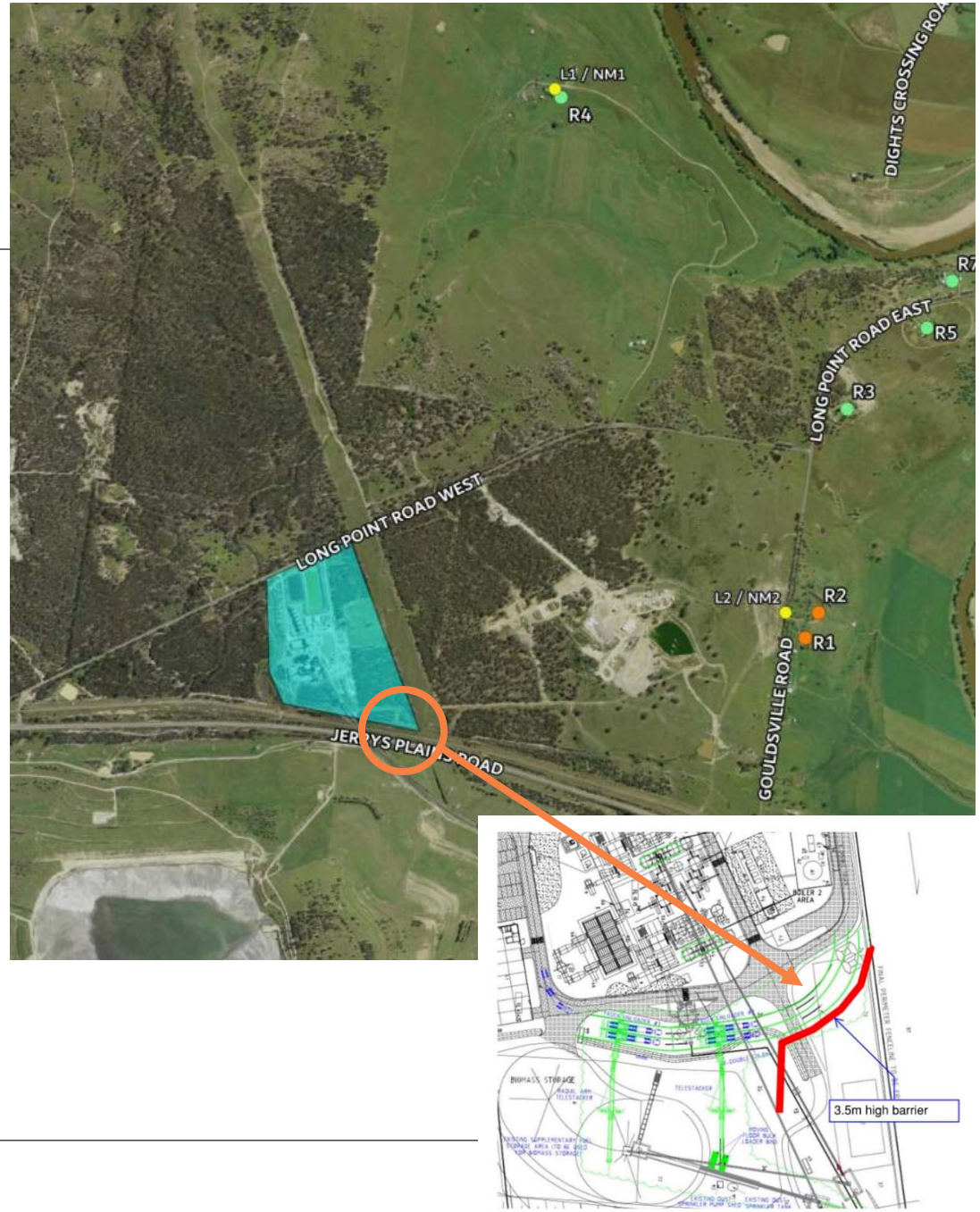
Traffic

- Operation of the project would generate up to 56 heavy vehicle deliveries (112 total movements) per day and up to 15 heavy vehicle trips per hour, and up to 70 light vehicle trips per day and up to 65 light vehicle movements per hour.
- The Golden Highway/Long Point Road intersection would operate at LoS B at both AM and PM peak.
- TfNSW recommended the upgrade of the Golden Highway/Long Point Road West intersection.
- The AUL treatment would be completed under an alternate approval pathway.



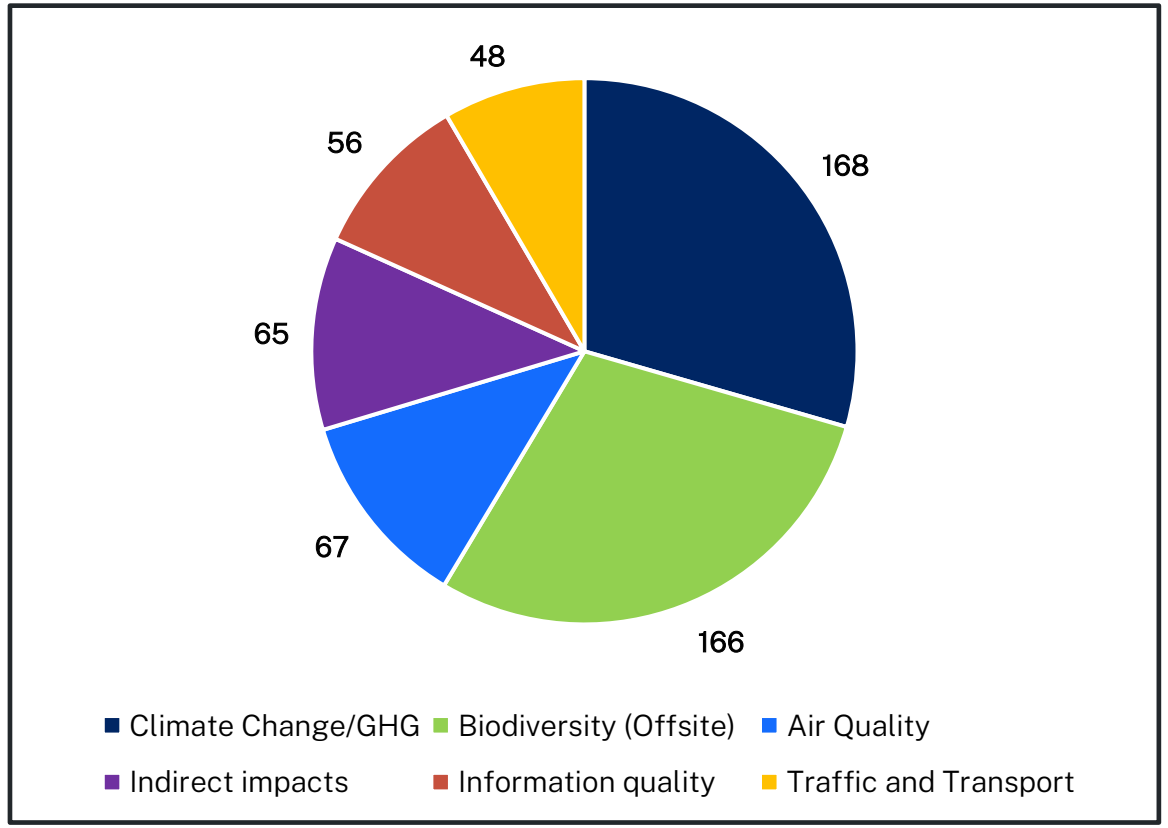
Noise and vibration

- The project would be compliant with project noise trigger levels (PNTLs) at all receivers and road traffic noise would be below the 2 dB(A) increase permitted by the EPA Road Noise Policy.
- In the event of deliveries of biomass being made to the project site during the night period under enhanced weather conditions, the installation of a noise barrier would ensure residences to the east do not exceed trigger levels.
- No residual issues were raised by EPA and they would regulate noise impacts under a varied EPL.



Community consultation and engagement

- Public exhibition from 8 March 2024 to 11 April 2024, and the project received 416 submissions total (377 unique).
- 215 submissions objected and 162 submissions supported.
- 12 government agencies provided advice during EIS, Submissions Report, and RFI stages and Singleton Council provided comment.



Questions

Thank you