Biodiversity Council

Submission to NSW Independent Planning Commission regarding the restart of Redbank Power Station

15 August 2025

About The Biodiversity Council

The Biodiversity Council brings together leading experts including Indigenous knowledge holders to promote evidence-based solutions to Australia's biodiversity crisis. The Council was founded by 11 universities with the support of Australian philanthropists.

Executive Summary

The Biodiversity Council has examined the Redbank Power Station proposal that plans to burn up to 700 000 tonnes per year of dry biomass. The conclusion is that it will: (1) generate very large amounts of greenhouse gas emissions and have substantial negative impacts on climate, and (2) accelerate land clearing and environmental degradation with significant negative impacts on biodiversity, including some threatened species.

Large-scale biomass burning, including that proposed for the Redbank Power Station, is not climate positive nor environment positive, including for biodiversity conservation. A recent major study of large-scale biomass burning, like that proposed for the Redbank Power Station concluded that the large-scale use of bioenergy from native vegetation generally results in major negative cascading impacts for forest ecosystem integrity and consequently a reduction in the resilience and natural adaptive capacity of species in the face of climate change impacts.

The NSW Independent Planning Commission should not approve this project.

Introduction

The Biodiversity Council welcomes the opportunity to provide feedback on Restart of Redbank Power Station ('Redbank project'). Verdant Earth Technologies Limited (Verdant Earth) (the applicant) proposes to restart the existing Redbank Power Station with the use of up to 700,000 dry tonnes per year of biomass as a fuel to generate electricity.

Our understanding

Biomass sources

The project is dependent on biomass from clearing of native vegetation and purpose-grown fuel feedstock.

The only true 'waste' sources of biomass - agricultural waste and domestic biomass fuel - are expected to make up a very small proportion of the total feedstock required.

It is expected that biomass from clearing of native vegetation, from 'approved land clearing' and so-called 'invasive native species' (INS) will contribute the majority of feedstock from Years 1 to 3:

- Year 1: 500,000 tonnes (72%) INS & 150,000 tonnes (21%) approved clearing
- Year 2: 450,000 tonnes (64%) INS & 100,000 tonnes (14%) approved clearing
- Year 3: 350,000 tonnes (50%) INS & 50,000 tonnes (7%) approved clearing
- Year 4: 180,000 tonnes (26%) INS & 20,000 tonnes (3%) approved clearing
- Year 5: 90,000 tonnes (13%) INS & 20,000 tonnes (3%) approved clearing
- Year 6 onwards: 90,000 tonnes (13%) INS & 20,000 tonnes (3%) approved clearing

The decline in use of native vegetation as a feedstock is due to the expectation that it will be progressively replaced by purpose-grown fuel crops (7% in Year 1 to 70% from Year 5 onwards).

Agricultural waste is expected to contribute 50,000 tonnes (7%) from only Year 2 onwards. 'Domestic biomass fuel' is not currently eligible for use as biomass under the Environment Protection Authority's Eligible Waste Fuels Guidelines.[1] Despite this, it is expected that domestic biomass fuel will contribute 50,000 tonnes (7%) from Year 3 onwards.

NSW government assessment of the project

The project is classified as State Significant Development under the *Environmental Planning and Assessment Act 1979* (NSW). The project will be assessed by the Independent Planning Commission (the IPC) because 215 objections were received.

The Department of Planning, Housing and Infrastructure prepared a State Significant Development Assessment Report (SSD-56284960) concluded that the project would result in benefits to the State of NSW and that the project is in the public interest.

In addition to assumptions about impacts on human health and economic benefits, the department's conclusion is based on the following assumptions regarding environmental impacts:

1. The project would not result in any significant impacts on the local community or the environment, is located on a suitable site for a power station, and any residual impacts can be managed through the implementation of the recommended conditions.
2. The greenhouse gas emissions from the project would represent a small (0.07% by 2050) contribution to NSW emissions and would be offset in line with the emissions reduction trajectory for NSW and is therefore consistent with the NSW strategic policy framework for actions to address climate change. The project would contribute to energy security and reliability for NSW.

The Biodiversity Council views the Department of Planning, Housing and Infrastructure's assessment of environmental impacts to be inadequate. The assessment does not consider how the project will incentivise clearing of native vegetation and the impact this will have on biodiversity. Moreover, it does not realistically consider the net greenhouse gas emissions from clearing native vegetation and the likelihood of it being sequestered by growing vegetation. Our key concerns are outlined in more detail below.

[1] The domestic biomass fuel (DBF) includes Construction and Demolition (C&D) and Dry Sorted Commercial and Industrial (C&I) waste sourced primarily from industry skip and bulk bin collection, and demolition works. This is not eligible as a biomass fuel under current EPA guidelines and would require regulatory changes.

Key concerns

1. **Invasive Native Species are not a 'waste' and burning them would result in poor biodiversity outcomes**

The majority of biomass for the first 3 years of operation come from invasive native species. Invasive native species (INS) are native woody plants that regenerate after disturbance or grow in areas where they didn't previously occur. There are 45 species identified as INS across NSW's regions.

INS is considered to be of such low value that landholders may clear INS provided they 'notify' Local Land Services. This contrasts with clearing of native vegetation more generally, which often requires assessment and approval by Local Land Services under the Native Vegetation Code.

There are two assumptions underlying the idea of INS - 1) they have reached 'unnatural densities' and 2) they are of 'weeds' and therefore low biodiversity value.

A common narrative around shrub densities in Queensland and New South Wales is that they are unnatural. Shrub densities do increase if there is overgrazing by domestic livestock and poor fire management. However, it is inaccurate to conclude that dense woody shrublands were not present before European colonisation. In fact, across central and western New South Wales, there were patches of natural woody shrublands everywhere, and probably quite extensive areas. While they may have increased in abundance in certain places due to poor land management, they are not an unnatural ecosystem.

The idea that these species are 'weeds' is largely because they are unpalatable to stock, rather than their biodiversity value. A 2001 study into six shrubs designated as INS found 'enormous diversity and abundance of fauna' with 140 vertebrate species, 30 invertebrate 'Orders', 94 ant taxa and 253 flora taxa recorded across the three survey regions. Our studies have shown that regrowth native vegetation is an important successional stage in ecosystems such as those dominated by temperate woodlands, and that these environments support unique assemblages of species of birds that differ from those in old growth woodlands.

Research in Queensland has found that many threatened species can use regrowth vegetation as habitat even when the regrowth is quite young. For example, the squatter pigeon can utilise regrowth when it is just three years old, and the koala could benefit from regrowth as young as nine years of age. The age at which species can use regrowth depends on what they eat, how they move through the landscape, and their requirements for breeding and shelter. For threatened species living in landscapes where much of the remnant vegetation has already been cleared, regrowth provides valuable habitat and resources, and also allows better connectivity in the landscape (i.e., allowing species to move between patches of bushland, for example).

Three quarters of threatened species habitat loss in Queensland since 2018 was regrowth forests and woodlands. Habitat loss is the number one threat affecting threatened species and the most important conservation action is to avoid and minimise all further threatened species habitat loss, whether that be remnant or regrowth vegetation.

2. **Use of native vegetation as a feedstock would increase, rather than decrease over time**

Redbank's study says there are 25 tonnes of biomass per hectare. To achieve the 500,000 tonnes from INS in the first year of operation, this would require 20,000 hectares of clearing. This is much larger than the total amount of INS cleared at present.

In 2023 (the last reporting period), clearing of Invasive Native Species comprised the largest component of authorised clearing in NSW at 65%. This equated to 6,219 hectares. To reach the goal of 500,000 hectares would require INS clearing to be tripled (or more, given that not all INS would end up transported to the power station).

Creating a demand for biofuels is likely to substantially increase legal and illegal land clearing. There is insufficient regulatory oversight of clearing under the native vegetation code to ensure it is not abused.

There is precedent for 'waste' products from land management leading to more harvesting of a natural resource. Victoria's Kangaroo Pet Food Trial was established in 2014 to reduce the 'waste' of kangaroo carcasses controlled by farmers to reduce grazing pressure. The evaluation found that the average number of kangaroos controlled was at least 2 x larger than in non-trial areas and 2.5 x larger than the long-term average in trial areas (see figure below).

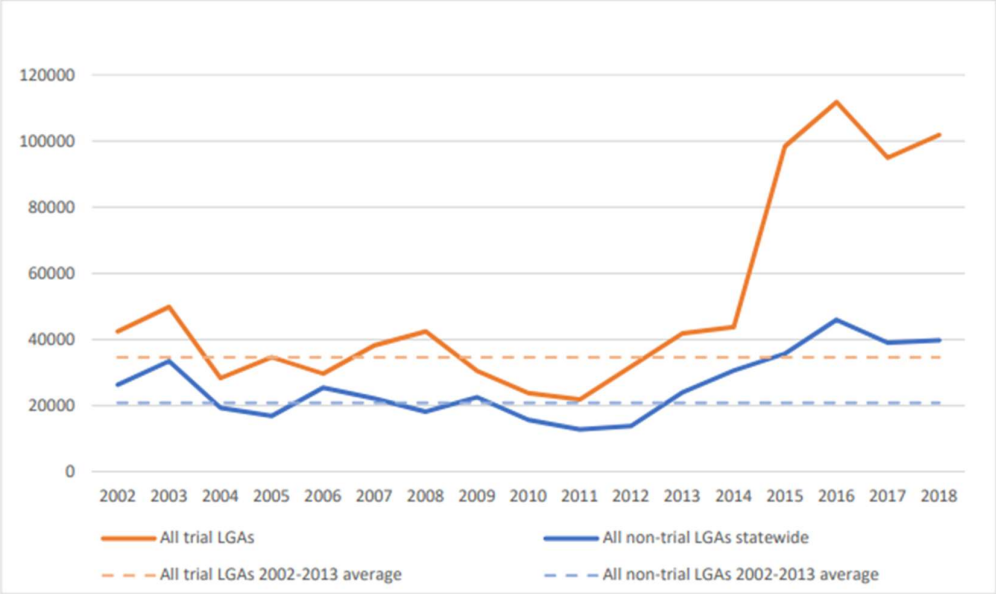

Figure 3. Kangaroo numbers approved for control in trial LGAs and all non-trial LGAs (state-wide), from 2002-2018.

It was clear that providing a financial benefit for kangaroo carcasses increased the numbers harvested, regardless of whether unrelated to the purpose for which kangaroos were being controlled, which is to reduce grazing pressure.

It is highly likely, given the amount of biomass that Redbank needs is three times the amount that the invasive native species right now could provide, and past experience from profiting from 'waste' products, that Redbank's project will incentivise additional land clearing by farmers. It is unlikely that this biomass source will be replaced by 'purpose-grown' fuel crops.

From Year 4 onward, it is expected that purpose-grown fuel crops will comprise the majority of biomass for the Redbank project. This is highly unlikely. Biofuels are unlikely to create a consistent supply because they are unprofitable when considering haulage and management costs. It is not an efficient use of land when compared to other agricultural uses.

The Department of Planning, Housing and Infrastructure's recommended conditions for consent do not put limits on the use of native vegetation as a feedstock and do not require it to be replaced by purpose-grown fuel crops over time.

3. **Burning large amounts of biomass will generate large amounts of greenhouse gas emissions and undermine efforts to tackle dangerous climate change**

Biomass burning generates large amounts of greenhouse gas emissions. A crude estimate is that one tonne of biomass generates approximately one tonne of greenhouse gas emissions (Mackey et al. 2022). There is abundant evidence that burning native vegetation biomass for energy is not carbon neutral nor beneficial for climate mitigation (Booth 2018; 2022;

Mackey et al. 2025). As demonstrated in a recent detailed and major review, burning biomass for bioenergy is not a pathway to climate resilient development (Mackey et al., 2025). This is, in part because of very long lag times between when emissions are generated from burning biomass and when carbon is stored in the landscape or in deep oceans (geological carbon) - 20 to 35% of the CO2 emitted now will still be in the atmosphere after 2 to 20 millennia (Archer et al. 2009).

Importantly, the modelling used in the Redbank proposal to erroneously suggest that biomass burning is beneficial is underpinned by assumptions that are highly likely to be invalid (see the assessment of modelling assumptions and flaws by Mackey et al., 2025). For example, Redbank appears to have applied a quasi attributional life cycle assessment approach that has effectively discarded the emissions associated with the harvesting of biomass from native plants (Professor Andrew Macintosh, personal communication). As a result, Redbank has substantially underestimated the greenhouse gas implications of the project (Professor Andrew Macintosh, personal communication).

The recent detailed study by Mackey et al. (2025) concluded that: “the large-scale use of bioenergy from native vegetation generally results in major negative cascading impacts for forest ecosystem integrity and consequently a reduction in the resilience and natural adaptive capacity of species in the face of climate change impacts”.

Recommendation

The NSW Independent Planning Commission should not approve this project.