

Submission on Restart of Redbank Power Station

The Redbank proposal appears driven by short-term speculation rather than energy market needs or economic viability. Project documents provide advocacy rather than objective analysis. They incorrectly assess project emissions, include no estimates of levelised cost of energy, and economic impacts are assessed with a widely-discredited form of multiplier modelling.

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INTRODUCTION

The Australia Institute welcomes the opportunity to make a submission on the proposed Restart of Redbank Power Station project. The proposal is to restart the small (151 MW) Redbank power station using diesel and some combination of wood, crop waste and other biomass. Further use of coal does not appear to be planned, but nor is it expressly excluded.

The biomass to be burned is said to exclude native forest logging waste but includes material from clearing of “invasive native species”. There is considerable concern from conservation and community groups that the project could be used to support damaging forestry and land clearing practices.

Redbank was originally developed with an experimental design to run on the tailings of the nearby Warkworth mine. It was particularly emissions intensive and was the subject of perhaps Australia’s first climate litigation in 1994, with Greenpeace

unsuccessfully opposing its development application in the NSW Land and Environment Court.¹

Redbank was developed and later acquired by Cayman Islands-domiciled Alinta, which itself was later taken over by investment house, Babcock and Brown.² Following the collapse of Babcock and Brown and changes in Alinta, Redbank went into care and maintenance in 2014. Since that time there have been various proposals for it including that it be used to power cryptocurrency mining,³ and produce hydrogen.⁴

The current proposal is by Verdant Earth, formerly known as Hunter Energy. Both companies feature “colourful banking identity” Richard Poole, who gained some of his reputation for colour through dealings with the corrupt former NSW Government minister Eddie Obeid.⁵ Verdant/Hunter also has links to controversial former Chief Minister of the Northern Territory Adam Giles. Despite having overseen increases in Northern Territory emissions, Mr Giles suddenly became “determined to do something” about climate change once out of office and Chairman of Redbank’s owners.⁶

This background is relevant because it indicates that Redbank is not, and has never been, a proposal based on sustainable and responsible power generation, or even basic economic viability. It has always been a project of experimentation and speculation – people looking to profit from quirks of policy or energy markets at the expense of the community and environment.

If this was a serious proposal for renewable energy generation, or even of dispatchable generation aimed at firming other renewable energy projects, it would be proposed

¹ Greenpeace Australia Limited v Redbank Power Company Pty Limited and Singleton Council, judgement available at <https://climatecasechart.com/non-us-case/greenpeace-australia-ltd-v-redbank-power-co/>

² White (2010) *Alinta powers back to profit and retires debt as Redbank hits wall*, <https://www.theaustralian.com.au/business/mining-energy/alinta-powers-back-to-profit-and-retires-debt-as-redbank-hits-wall/news-story/7088f9fb0a5695fd7b79f05e42d65605>

³ Newcastle Herald (2018) *Redbank power station proposed as 'blockchain' power source*, <https://www.newcastleherald.com.au/story/5335192/latest-twist-in-the-curious-tale-of-redbank/>

⁴ Mazengarb (2018) *Australian biomass-to-hydrogen venture readies for US public listing*, <https://reneweconomy.com.au/austalian-biomass-to-hydrogen-venture-readies-for-us-public-listing/>

⁵ Ross (2022) *First coal, then crypto and now ... hydrogen*, <https://www.theaustralian.com.au/business/mining-energy/richard-poole-and-verdant-earth-technologies-pitch-green-plan-for-former-redbank-coal-power-plant/news-story/900a20c21de9a95010570f7819cb2c9d>

⁶ See https://twitter.com/R_o_d_C/status/1349506428591980544

by, or at least publicly endorsed by, renewable energy companies. As far as we are aware, this is not the case.

ENVIRONMENTAL IMPACT STATEMENT

The impression that the Restart Redbank project is driven by short term speculation is strengthened by parts of the environmental impact statement (EIS). In this submission, we concentrate on:

- Parts of the main EIS document that discuss greenhouse emissions and fuel, written by Jackson Environment and Planning.
- Appendix P GHG mitigation and climate change adaptation plan, written by EMM.
- Appendix J on the energy market, written by consultants Marsden Jacobs.
- Appendix K Economic impact assessment, written by little-known consultants Australian Economic Advocacy Solutions.

Greenhouse gas emissions

The greenhouse gas assessment by EMM presents the unusual finding that the project could burn 850,000 tonnes of biomass per year, for 30 years, without producing any CO2 emissions. Extracts from the two key tables are shown in Figure 1 below:

Figure 1: Extracts from Redbank EIS – biomass volume and scope 1 emissions

Table 3.2 Activity data		Table 3.4 Scope 1 emissions	
Financial year	On-site (Scope 1) 1A: Electricity generation Biomass (all types) (t/year)	Financial year	CO ₂ (t CO ₂ -e/year)
2025/26	850,000	2025/26	0
2026/27	850,000	2026/27	0
2027/28	850,000	2027/28	0
2028/29	850,000	2028/29	0
2029/30	850,000	2029/30	0
		2030/31	0
		2031/32	0

Source: Jackson Environment and Planning (2023)

As shown in Figure 1, the EIS claims that each year Redbank would burn 850,000 tonnes of biomass each year,⁷ but not produce any direct carbon emissions. This is clearly incorrect. If this were to occur, over 1 million tonnes per year of CO₂ would come out of the smokestacks of Redbank. The reason that EMM and the proponents can claim such low emissions is a quirk of national emissions accounting, as explained by EMM:

The actual direct CO₂ emission at the point of biomass combustion would not be zero. However, there is a simplifying assumption in the guidelines that the amount of CO₂ released during combustion is balanced by the CO₂ taken up by the biomass during its life. These emission and removal mechanisms for CO₂ are therefore accounted for in the land use, land use change and forestry (LULUCF) sector, through an understanding of changes in biomass stock. In this GHG assessment, if the direct CO₂ emissions from burning the biomass had been included in the calculations, then there would effectively been a double counting of emissions in carbon accounting. (p10)

In other words, the EIS assumes that the emissions of the project will be counted in the land sector and do not need to be considered in project assessment.

This is problematic for several reasons.

First, this is the opposite approach taken from the EIS's economic appendix, which claims the project will support 1,009 jobs and \$901 million worth of economic activity, the bulk of which would be in other industries. The flawed methodology behind these calculations is discussed further below, but the point is that the EIS considers the emissions from Redbank to be the responsibility of other industries, but at the same time jobs and output in other industries should be credited to Redbank.

Second, this is inconsistent with how coal projects are assessed in NSW. Coal mines that produce millions of tonnes of coal per year are approved in NSW on the basis that the combustion emissions are the responsibility of the power stations that burn them. If NSW wants to base project assessment on the assumption that all emissions are the responsibility of those who produce the fuel, the assessment of mining projects will need to change in response.

Third, and relatedly, EMM's approach confuses emissions accounting guidelines with project assessment. If Australia was to count land clearing emissions in the land sector and also count the combustion of any related biomass in the energy sector then there

⁷ Differences with volumes of 700,000 tonnes reported elsewhere in the EIS and media relate to moisture content.

would be double counting in the national tally of emissions. But project assessment by the NSW state government and assessment agencies is a different task to accounting for national emissions. Project assessment needs to consider the difference that this project will make to the community and environment, including its impact on emissions.

It is clear that Redbank will increase emissions. By burning biomass rather than letting it decay or remain standing, the project brings forward in time emissions that would otherwise take years or decades to occur. More importantly, by looking to purchase, process and transport 850,000 tonnes per year of wood or biomass crops, Redbank provides an incentive to clear areas that would otherwise not be cleared. It is clear from the EIS that the project will result in clearing of vegetation that otherwise would not be cleared, or the conversion of areas that would otherwise be restored to permanent vegetation to intermittent crops:

Verdant's discussions with local mine sites have revealed the potential for establishment of an 8,000 ha crop of Bana Grass...

Verdant have been working with Western LLS and a local business organisation Western Regeneration, based in Cobar to enter into a supply agreement for up to 500,000 tonnes per annum of biomass from their approved [invasive native species] clearing. (p64)

If it were not for Redbank, these former mine sites would be replanted with permanent vegetation. These Cobar businesses would not be paid for land clearing.

The marginal impact of the Redbank proposal on emissions is not clear. What is clear is that it is not zero and the EIS fundamentally understates the impact of the project. The EIS gives decision makers no guidance on the likely magnitude of these emissions and what this magnitude might depend on.

The EIS's discussion of potential sources of biomass raises more questions. Can it really be viable to generate electricity near Singleton based on vegetation trucked all the way from Cobar? What price would need to be paid for bana grass to incentivise mines to change their rehabilitation plans and can Redbank profitably generate at that price?

Unfortunately, none of these questions are addressed in the EIS's energy market appendix or economic assessment appendix, discussed further below.

The Cobar suggestion is particularly problematic, not least because the business in question appears to have been deregistered.⁸ The proponent forecasts that there will be 56 daily truck movements to the power station site for a total of 112 return journeys, presumably many to/from Cobar. Cobar is 6 hours and 15 minutes' continuous drive from the power plant site. Under fatigue management regulations drivers would be required to take mandatory rest breaks on a journey of this length, meaning a return trip would considerably exceed 12 hours and could breach occupational health and safety laws.⁹

The discussion of 'invasive native species' raises another issue. If invasive native species are cleared from private land in order to create more agricultural land, then landowners have no intention to replace that vegetation and emissions will increase.

Further, the term "invasive native species" is used in the EIS almost as a pejorative. That may be the view of landowners who want to clear the vegetation for agriculture, but so-called invasive native species could also describe scrub that provides animals with shelter, feed and places to breed, in other words habitat vital to the maintenance of biodiversity.

There is a serious risk that the power plant will accelerate native species clearing by creating a market for the resulting biomass. Accelerated land clearing in NSW is contributing to global warming, a biodiversity crisis and extinction threats to native species. By creating a market for materials produced by land clearing, the proposal would encourage further land clearing on private land which will contribute to these problems. Habitat clearing on freehold land is a major cause of environmental loss in NSW.

These concerns are widely shared by scientists worldwide. In 2022, 650 scientists signed a letter calling on world leaders to stop burning wood to make energy because it destroys valuable habitat. The letter said so called "bioenergy" is wrongly described as carbon neutral and contributes substantially to wildlife loss.¹⁰

⁸ ASIC records cited in North Coast Environment Council (2024) *Submission in opposition to the Restart of Redbank Power Station*.

⁹ NSW Government (2018) *Heavy Vehicle (Fatigue Management) National Regulation (NSW)*, <https://legislation.nsw.gov.au/view/whole/html/inforce/current/sl-2013-245a>

¹⁰ Weston (2022) *Stop burning trees to make energy, say 650 scientists before Cop15 biodiversity summit*, <https://www.theguardian.com/environment/2022/dec/05/stop-burning-trees-scientists-world-leaders-cop15-age-of-extinction-aoe>

Energy market appendix

The proponent's file name and the link on the planning portal website refer to this appendix as an "energy market assessment", a term not used in the document itself, which is titled "NSW energy supply gap". This is significant because there is very little detail in the EIS about what role the project would play in the energy market, whether it is commercially viable or even particularly useful.

The vast bulk of Marsden Jacob's appendix is fairly technical, but widely-known, content about the overall NSW energy market situation and the Australian Energy Market Operator's assessment around meeting future reliability standards. None of this is specific to the Redbank restart project. It is only in the final three paragraphs of the document that Marsden Jacobs turns to the specifics of Redbank, reproduced here in full:

While previously fuelled by coal tailings during its operational phase from 2001-2014, the Verdant Plant will in future operate as a biomass plant. The process and feasibility of securing the alternative fuel supply to operate the plant is beyond the scope of Marsden Jacob's engagement. We understand this alternative approach to fuel would be addressed in the plant's environmental approval.

Marsden Jacob is aware of plants in other markets such as the Drax plant in the United Kingdom that have converted operations from coal to biomass. There is also a small wood waste biomass plant proposed in Western Australia, adjacent to Perth Airport, that will soon begin operations.

These precedents indicate that the technology approach proposed by Verdant is feasible. Given NSW's critical need for firm, dispatchable power, a technology neutral approach to meeting this need would appear to be in the best interests of NSW consumers. (p18)

In other words, Marsden Jacobs have not assessed what specific role Redbank would play in the energy market, whether its proposed operations are technically feasible or financially viable. The best that can be said is that the Redbank project could be feasible, based on two projects that Marsden Jacobs have heard of, but not researched beyond looking at their websites, projects that operate in completely different energy markets.

It appears that Marsden Jacobs have been strategically briefed by the proponents, producing a report labelled as the project's "energy market assessment", outlining serious challenges in the NSW energy market, but without exploring the most basic

questions about the project itself – what are its operating costs, or levelised cost of energy likely to be? Would it operate continually as “baseload”, or intermittently as “firming” for intermittent renewables? If the former, how will it compete with the considerable amount of coal fired generation that will remain in the national electricity market for many years? If the latter, how will it compete with batteries, hydro and gas generation that currently play this role?

With so little analysis provided of how the project will operate and what conditions it needs in the energy market to be viable, this strengthens the impression that the proposal is driven by speculation and if it were ever to reach operation, it would have every incentive to cut corners on environmental standards and safety, the key concerns of environment and community groups that object to the project.

Economic impact assessment

The EIS process is ostensibly about independent, expert assessment of major projects and their environmental, social, and economic impacts. While there is always an element of ‘he who pays the piper calls the tune,’ most consultants at least claim to provide objective assessment. But by highlighting in the name of the company that this consultant provides advocacy rather than objectivity, Australian Economic Advocacy Solutions at least deserve credit for frankness.

Advocacy, however, should not be confused with analysis. The NSW planning system has had a long and robust debate about the standards of major project economic analysis, particularly in relation to mining projects. As a result, the state sees economic assessments of major projects that are hotly contested, but usually of high standard. The Redbank economic assessment is not up to this standard. Like the energy market appendix, it includes no consideration of levelised costs or cost benefit analysis. There is no discussion as to how the project would generate revenues to cover the claimed \$60 million in annual operating costs and \$70 million capital cost given the likely disadvantages of Redbank against zero marginal cost renewable generation during the day, batteries and gas at peak times and legacy coal generation overnight.

The main analysis of the economic appendix is an assessment of potential impacts on employment and economic activity, conducted with input-output modelling. Input-output modelling, its usefulness and widespread abuse have been extensively discussed in NSW planning debates.

For example, an extension of the neighbouring Warkworth Mine was rejected by the NSW Land and Environment Court, partly because the court did not accept the validity of the mine’s claim to generate 45,000 jobs based on input-output modelling. The

court accepted that the likely number of jobs created would be closer to zero and described the methodology as “deficient”.¹¹ Input-output modelling is described by the Australian Bureau of Statistics (ABS) as “biased”,¹² and by the Productivity Commission as being widely “abused”.¹³

The key reason an input-output assessment of the Redbank project will be biased is the model’s assumption of infinite resources, particularly labour. The ABS explains:

The most significant limitation of economic impact analysis using [input-output] multipliers is the implicit assumption that the economy has no supply-side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.¹⁴

As the Redbank economic appendix notes (Figure 6), unemployment is low in NSW, the Hunter region and in Singleton in particular. In these kinds of labour market conditions, a new project will not create new jobs, but simply redistribute existing workers. This has been noted widely, as various infrastructure projects have been shelved due to difficulties finding workers in the context of ambitious plans for public infrastructure, housing, renewable energy and mining projects.¹⁵

In summary, the Redbank project will not generate new jobs under current labour market conditions. It will redistribute existing workers. While this may be of advantage to the local area, even this seems unlikely given extremely low unemployment in Singleton.

¹¹ NSW Land and Environment Court (2013) *Bulga Milbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited* [2013] NSWLEC 48; see also Martin (2013) *Rio fails basic maths at the coalface*, <https://www.smh.com.au/business/rio-fails-basic-maths-at-the-coalface-20130421-2i8b4.html>

¹² ABS (2010) *Input output multipliers*, <https://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/5209.0.55.001Main%20Features4Final%20release%202006-07%20tables>

¹³ Gretton (2013) *On input-output tables: Uses and abuses*, <https://www.pc.gov.au/research/supporting/input-output-tables>

¹⁴ ABS (2010) *Input output multipliers*

¹⁵ Kohler (2024) *Dire labour shortage warrants moratorium on fossil fuel export projects*, <https://www.thenewdaily.com.au/finance/2024/03/28/alan-kohler-fossil-fuel-projects>

CONCLUSION

The Restart of Redbank Power Station proposal appears to be driven by speculation and short-term gain. It is not a proposal that has an obvious role in the NSW energy market and could incentivise unsustainable clearing of native vegetation. The energy market assessment and economic assessment contain no analysis that suggests the project is economically or financially viable, or of net benefit to NSW. The plant is likely to accelerate land clearing, loss of wildlife habitat and would increase carbon emissions. The proposal should be refused to enable government and community efforts to be put into clearer solutions to NSW's sustainability challenges such as ending native forest logging and developing renewable energy.