

North East Forest Alliance Inc submission to Independent Planning Commission on:

Restart of Redbank Power Station and Use of Biomass (Excluding Native Forestry Residues from Logging) as a Fuel – SSD-56284960 Verdant Earth Technologies Limited

Dailan Pugh, North East Forest Alliance, August 2025

NEFA previously made detailed submissions to the EIS, both when it was being prepared and when it was exhibited, though the principal issues we raised were ignored, including in the Assessment Report. We summarized these in our oral presentation to the Independent Planning Commission, and elaborate upon them in this submission. In summary:

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NEFA considers this proposal to be a massive threat to the future of NSW's forests and biodiversity, that will significantly increase NSW's land clearing and CO₂ emissions during a climate and biodiversity crisis when both need to be urgently reduced, and plead with you to reject it outright.

North-east NSW has internationally significant conservation values that single it out as one of the world's strongholds of biodiversity. Its high diversity of threatened species, large number of endemic species, significant populations of species which have declined elsewhere in Australia and importance for migratory fauna, identify it as one of Australia's major refuge areas with the best ability to maintain Australia's declining biodiversity. The forests of eastern NSW have been identified as part of one of the world's 35 biodiversity

hotspots because of their exceptional species endemism (at least 1,500 endemic plant species, i.e., 0.5% of all known species) and habitat loss (70% or more of an area's primary vegetation cleared) (Williams *et.al.* 2011).

NSW is a heavily cleared landscape. Almost 40% of native forests and bushland has been removed since European settlement, and only 9% of remaining vegetation is in close-to-natural condition. [WWF \(2021\)](#) identify eastern Australia (including north-east NSW) as one of the world's 24 deforestation fronts, and the only developed country on the list. Retaining and restoring forests and bushland is essential to stem the tide of wildlife extinctions and land degradation.

There is nothing ecologically sustainable about clearing tens of thousands of hectares of native vegetation inhabited by millions of native animals, and converting it into carbon dioxide to worsen climate heating.

Landclearing and associated habitat fragmentation is the single greatest threat to biodiversity in NSW. Most landclearing is unapproved and based solely on self-assessment, where approval is obtained it is based on simplistic desk-top assessments, with no requirements for surveys to identify important habitat for threatened species or key habitat linkages, greatly accentuating the extinction risk. The risk is increased because many landowners often have poor understanding of requirements, and lack of interest in implementing them.

We are in the midst of a climate crisis and need to take urgent action to reduce our CO₂ emissions, and increase sequestration of atmospheric carbon. It is therefore outrageous that in this emergency the NSW Government is contemplating starting a power station that will emit over 1.3 million tonnes of CO₂ per annum for the next 30 years, while at the same time permanently removing tens of thousands of hectares of native vegetation each year needed to sequester atmospheric carbon.

The principal problems with the EIS and Assessment Report are that they have failed to consider, assess or admit:

- the environmental impacts of the massive increase in land clearing required to fuel Redbank, most notably on Threatened species and ecosystems, including those listed under the EPBC Act
- the actual CO₂ emissions at the powerplant and from the associated land clearing (which will be greater), and account for these in a clear, open and transparent manner.

The proposal is not in the public interest. Land clearing does not have a social licence. The public are already suffering the consequences of increased extreme events due to climate heating, such as droughts, heatwaves, wildfires and floods, and our environment is degrading as species are being increasingly impacted, exemplified by the rapid decline of Koalas in western NSW. It is in the public interest to rapidly transition to genuine low emission renewable energy based on solar and wind, rather than displacing it with another highly polluting energy source.

1. The proposal is contrary to NSW Government policy.

The ALP's [2024 NSW Labor Platform](#) states:

3.112 NSW Labor recognises that burning timber and cleared vegetation for electricity is not carbon neutral and is neither clean or renewable energy, and therefore forms no part of a credible strategy for reducing greenhouse gas emissions. Labor will introduce legislation prohibiting the burning of any forests and cleared vegetation for electricity.

In relation to landclearing it states (1.55) “NSW Labor will decrease emissions from land management by: (a) reducing excess and uncontrolled land clearing ...”, and (8.10) “Land clearing: Labor will prevent broadacre clearing and clearing of endangered and threatened regional ecosystems and ecologically sensitive areas.”

It is astounding that despite these commitments the NSW Government is poised to approve the first Australian conversion of a disused coal fired powerplant to biomass obtained from land clearing, necessitating a major increase in land clearing and significantly increasing CO₂ emissions.

2. The proposal will result in a major increase in inadequately regulated NSW land clearing, with significant environmental impacts, of which there has been no assessment.

The total volume of biomass required will be 850,000 tonnes (wet), primarily woodchips and/or synthesized wood-pellets processed at unidentified facilities off-site. This is intended to initially be primarily sourced from 607,000 tonnes obtained from approved clearing for Invasive Native Species (INS), 182,000 tonnes from other approved land clearing activities and 61,000 tonnes from “Purpose grown fuel crops”.

Clearing of native vegetation is the greatest threat to biodiversity. Regarding landclearing the [EPA's \(2021\)](#) NSW State of the Environment identifies:

- *Clearing of native vegetation, and the destruction of habitat that is associated with it, has been identified as the single greatest threat to biodiversity in NSW*
- *Land clearing is listed as a key threatening process under the Biodiversity Conservation Act 2016. The rate of permanent clearing of woody vegetation in NSW has been steadily increasing since 2015*
- *The average rate of permanent clearing over seven years from 2009 to 2015 was 13,028 hectares per year ... In 2019, 46,300 hectares of non-woody vegetation was cleared on Regulated Land, and 54,760 hectares in 2018*
- *The loss and alteration of habitat that has occurred from European settlement up to 2013 has directly reduced the **ecological condition** of habitat in New South Wales*

from its original level (100%) to 44% of that level. Since 2013 to present the ongoing, indirect effects of loss, alteration and fragmentation of habitat, have further reduced the average **ecological carrying capacity** of remaining habitats in New South Wales to 33%.

- *Following the fires in 2020, overall ecological condition and ecological carrying capacity for NSW both decreased by 2%, to 42% and 31% respectively. Within the immediate fire ground, ecological condition decreased from 72% in 2013 to 44%, a 39% reduction, while ecological carrying capacity decreased from 62% to 38%, a 24% reduction.*

The EPA (2021) identify that clearing native vegetation has numerous environmental impacts, including:

- *irreversible destruction of habitat causing a loss of biological diversity, and may result in total extinction of species or loss of local species*
- *fragmentation of populations resulting in limited gene flow between small isolated populations, reduced potential to adapt to environmental change and loss or severe modification of the interactions between species*
- *riparian zone degradation, such as bank erosion leading to sedimentation that affects aquatic communities*
- *loss or disruption of ecological function*
- *increased greenhouse gas emissions from clearing, both from burning of cleared vegetation and from the loss of soil organic matter*
- *disturbed habitat which may permit the establishment and spread of exotic species which may displace native species*
- *loss of leaf litter, removing habitat for a wide variety of vertebrates and invertebrates.*

Further noting:

Habitat fragmentation caused by land clearing continues to have long-term impacts on native vegetation well after the initial clearing occurs, including:

- *the dieback of vegetation and lack of regeneration*
- *invasion by weeds and feral animals*
- *loss of native species and variability.*

There is no environmental assessment of the lands intended for clearing in the EIS, nor identification of the area that will be required to satisfy the volumes required. [In 2023 total woody vegetation clearing for agriculture](#) authorised under the Local Land Services Act was 19,364 hectares, with 6,219 hectares of INS. This is for the whole of NSW.

The 2019 Auditor General report '[Managing Native Vegetation](#)' was damning of management of native vegetation in NSW and the regulation of clearing:

The clearing of native vegetation on rural land is not effectively regulated and managed because the processes in place to support the regulatory framework are weak. There is no evidence-based assurance that clearing of native vegetation is being carried out in accordance with approvals. Responses to incidents of unlawful clearing are slow, with few tangible outcomes. Enforcement action is rarely taken against landholders who unlawfully clear native vegetation.

There are processes in place for approving land clearing but there is limited follow-up to ensure approvals are complied with.

... There is limited follow-up or capacity to gauge whether landholders are complying with the conditions of approvals and effectively managing areas of their land that have been set aside for conservation (i.e. 'set asides').

... The rules around land clearing may not be responding adequately to environmental risks.

The Code, which contains conditions under which the thinning or clearing of native vegetation can be approved on regulated land, is intended to allow landholders to improve productivity while responding to environmental risks. That said, it may not be achieving this balance. For example, the Code allows some native species to be treated as 'invasive' when they may not be invading an area, provides little protection for groundcover and limited management requirements for set asides. There is also limited ability under the Code to reject applications for higher risk clearing proposals.

... There are significant delays in identifying unlawful clearing and few penalties imposed.

Unexplained land clearing can take over two years to identify and analyse, making it difficult to minimise environmental harm or gather evidence to prosecute unlawful clearing. Despite around 1,000 instances of unexplained clearing identified by OEHS and over 500 reports to the environmental hotline each year, with around 300 investigations in progress at any one time, there are only two to three prosecutions, three to five remediation orders and around ten penalty notices issued each year for unlawful clearing. Further, OEHS is yet to commence any prosecutions under the current legislation which commenced in August 2017.

Some relevant key findings posing risks to the Redbank supply chain identified by the LLS internal 2023 "[Statutory Review of the native vegetation provisions \(Part 5A and Schedule 5A and Schedule 5B\) of the Local Land Services Act 2013](#)" include:

- *Critically Endangered Ecological Communities (CEECs) are protected but some key stakeholders suggest this could be stronger, including through improved identification and mapping.*
- *Extremes in weather and changes in climate are likely to become more severe in the future and climate change risk management and tools are not currently built into the Land Management Framework.*
- *The high level of unallocated clearing reduces public confidence in the Land Management Framework. While there have been efforts to allocate clearing activities, unallocated clearing on native grasslands / non-woody vegetation remains high (89% of all unallocated clearing in 2021).*
- *Allowable activities are not currently monitored and therefore may contribute to unallocated clearing.*
- *Stakeholder confidence in the Land Management Framework is being impacted by a lack of transparent and consistent monitoring, evaluation and reporting, including limited details on compliance and enforcement actions.*

The vast majority of landclearing is identified as "unallocated", meaning the LLS has no idea whether it is lawful or not – "*Unallocated clearing refers to clearing or disturbance in landcover detected from satellite imagery that does not need approval, has not been recorded or is unlawful*". Unlawful clearing poses a real threat to Redbank's supply chains, as noted by LLS (2023):

Prior to 2021, unallocated clearing was consistently reported in annual landcover change reporting as being around 75% of total vegetation loss. The 2021 annual landcover change report by the Department of Planning and Environment has been able to attribute some woody vegetation loss to a new category of 'presumed Allowable Activity'. The category 'presumed Allowable Activity' is not exclusive to clearing under the LLS Act and can also include lawful native vegetation clearing under other legislative frameworks, such as the Rural Boundary Clearing Code⁴². This has resulted in the reduction of unallocated clearing in the 2021 report to 61% of all vegetation loss.

Rural regulated land is defined as rural land required to be categorised as 'Category 2 - regulated land' or 'Category 2 - vulnerable regulated land' or 'Category 2 - sensitive regulated land' under Part 5A of the Local Land Services Act 2013 (LLS Act). Vulnerable regulated land is where clearing of native vegetation “may” not be permitted and Sensitive regulated land is land where clearing is **not** permitted, yet the [2021 NSW Vegetation Clearing Report](#) (Tab 3) identifies that 841 ha of woody vegetation was cleared on Vulnerable lands and 487ha on sensitive lands, with an additional 59ha classified as both. It is astounding that 1,387ha (5%) of woody vegetation was cleared on Sensitive and Vulnerable lands without explanation. Given that these lands were identified because of their high conservation values and vulnerability they represent a real threat to Verdant's supply chains.

Of the total area of woody vegetation cleared on Category 2 lands a large percentage is unexplained, with 3,272 ha (15%) presumed to “*may be an allowable activity*” and 4,658 ha (21%) “*not associated with an authorisation*”. Such sources increase the threat to Verdant's supply chain.

The Local Land Services (2023) [NSW Landholders Survey 2023](#) identified that landholders have a poor understanding of land clearing rules, as most land clearing is self-assessed this significantly increases risks to Verdant's supply chains, finding:

- *Landholders feel capable to assess the native vegetation on their property (76%), and a large proportion felt they are the best person for making decisions (69%)*
- *Only three out of ten (29%) landholders reported that they had contacted Local Land Services (LLS) about managing native vegetation.*
- *Just over a third of landholders (38%) were aware of the Native Vegetation Regulatory Map, and Just over half of those aware of the Map (55%) had looked at it for information about native vegetation clearing on their property.*
- *Only three out of ten (27%) landholders claimed they had heard about the NSW Land Management (Native Vegetation) Code ('the Code').*
- *Of those who made an application to clear land under the Code, half (52%) reported they had undertaken 'part' of the approved works, and a fifth (21%) had undertaken 'all' of the approved works.*

2.1. Verdant will require at least 24,000 ha to be cleared under the guise of Invasive Native Species, a fourfold increase.

The EIS identifies that the intent is to initially obtain 607,000 t (with 25% moisture) of woodchipped biomass (sieved to remove fines) from approvals for clearing “Invasive Native Species” (INS), primarily in western NSW.

This will require a significant increase in current clearing, with significant environmental impacts. There is no environmental assessment of the lands intended for clearing in the EIS or the Assessment Report, nor identification of the increase in land clearing that will be required to satisfy the volumes required.

Under the heading “*Residues from land clearing of invasive species on agricultural land*” the EIS (p138) seeks to mislead readers by pretending that “invasive” species primarily refers to “*noxious weeds*”, stating:

Verdant Earth have been working with the Civil Industries and Local Landcare Services LLS NSW as well as landowners who have trees and shrubs that are classified as noxious weeds and may be cleared from land for agricultural uses.

The EIS (p87) only considers environmental impacts within the development site, stating “*no clearing of bushland or native vegetation is required for the Proposal.*” The Biodiversity Development Assessment Report similarly only considers the development site, claiming “*no biodiversity values or EPBC matters are likely to be affected by the Proposal*”.

The Department’s [Assessment Report](#) states “*Regarding INS and potential offsite impacts to native vegetation raised in public submissions, the Department notes only INS or biomass from approved land clearing is permitted to be used*”. They do not consider the environmental impact or the availability of resources from land clearing, despite this being raised in submissions.

The Cobar Peneplain Bioregion is currently under-represented within the Australian National Parks reserve network, with only 2.9 per cent of the total land area protected under various conservation schemes. This is a major issue, as the Cobar Peneplain Bioregion supports 19 flora and 43 fauna species that are listed as endangered or vulnerable.

So called Invasive Native Species (INS) are naturally occurring native woody plants that can naturally occur in high densities, but can also regenerate densely in grassy woodlands subject to changed fire frequencies and/or intense stock grazing. Many native animals utilise INS, including some that depend upon it, including a number of threatened species (some of which are listed under EPBC Act). INS thus have high conservation values, even when acting invasively.

Many areas cleared under the guise of INS may be naturally occurring ecosystems. As identified by the Auditor General (2019) “*There are no requirements under the Code for demonstrating that a species is behaving aggressively and invading an area for it to be treated as an INS ... It is therefore unclear whether the vegetation to be removed are ‘invasive’ or just stable and naturally occurring*”. The Auditor General (2019) recommended that by June 2020, LLS review the Code to address “*the absence of the requirement to*

demonstrate that a species is invading a landscape prior to approving its clearing as an invasive native species". As identified below in Section 2.2, this problem has still not been rectified.

Another major problem is that there are no requirements to undertake surveys for threatened species or ecosystems prior to clearing INS. For the 19 flora and 43 fauna species that are listed as endangered or vulnerable (including EPBC Act listed species) in the Cobar Penneplain Bioregion, there is therefore a high risk they may be in areas cleared to supply Verdant.

The EIS's assessment of timber volumes obtainable by landclearing for INS is grossly inflated, inadequate and misleading. Potential yields are grossly inflated. There is no clear identification of where the woodchips/pellets will be sourced from, the volumes that would be economically accessible, increase in annual clearing that would be required to provide them, potential alternative uses for the timber, or the economics of transporting them vast distances.

It is apparent that extensive areas have been approved for clearing as INS, though only a small proportion has actually been cleared, in part due to economic constraints. The proposal will create an economic incentive to activate many sleeper approvals. In relation to INS, the LLS 2023 "Statutory Review" states:

The majority of rural land authorised for clearing (over 90% of total) corresponds with two parts of the Code: managing Invasive Native Species (Part 2 - INS) (80% of authorisations), and Pasture Expansion ...

However, the use of these authorisations is low, with 15,306 hectares of the total area approved actually cleared up to December 2021 for Parts 3-6, and 16,541 hectares of authorisations cleared for the management of INS (Part 2).³² This limited extent of activating these authorisations is most likely due to known drivers of clearing rates such as commodity prices, climatic conditions,³³ and the relative expense of undertaking vegetation management. ...

In addition, the average annual area of INS authorisations under the previous Native Vegetation Act 2003 was over 425,000 hectares compared to the annual average of less than 145,000 hectares under the current Land Management Framework. Given the high rates of authorisations under the Native Vegetation Act 2003 were also not fully activated it is highly likely that the same will apply to Invasive Native Species authorisations under Part 5A of the Act.

[In 2023 total woody vegetation clearing for agriculture](#) authorised under the Local Land Services Act was 19,364 hectares, with 6,219 hectares of INS. This is for the whole of NSW.

For INS the EIS claims that "As a conservative estimate it *could be assumed then that 41.6 (dry tonnes) of residues are potentially available per hectare of clearing.*", which is excessive. Contrary to this the Higher Use Study states:

There is little empirical data on the types of INS and its yield in tonnes per hectare of biomass. NSW Agriculture has reported studies in the Cobar and Bourke areas which showed a range of biomass yields of up 5 to 27 t/ha.⁴⁶ In 2005 BEST outlined a range 8 to 40 tonnes per ha of woody weeds in the Bourke and Cobar shires.⁴⁷ We

have used 25 tonnes per ha as a central estimate of available biomass across all densities of INS.

Assuming this is “wet” tonnes, a nett yield of 25 tonnes per ha would require the clearing of 24,280 ha to satisfy Verdant’s requirements. In practice the area cleared to obtain this volume would need to be significantly larger, due to INS harvesting limits, only a proportion of INS being suitable for chipping, and the loss of volumes in processing (ie removal of fines, oversized chips, contaminated material) (see Section 6).

Many INS operations would not yield economically viable volumes suitable for chipping within transportable distances. It is astounding that there has been no on-ground assessment of the proportion of INS clearing approvals that would be economically viable to collect and transport, or the volumes that could be realistically obtained within viable haulage distances to Redbank.

Another company, Renewed Carbon's Cobar Biohub (<https://www.cobar.renewedcarbon.com.au/>) are vying for the same resource, proposing to make high grade charcoal and speciality timber products from INS, intending to start harvesting 3,000 ha/annum, increasing to 11,000 ha/annum, just within 75 km of Cobar. As Cobar Biohub is proposing higher value uses, it would have precedent over Verdant.

It is clear that Verdant’s proposal will necessitate clearing of over 24,280 ha of INS in the first year, which will necessitate at least a four-fold increase in current clearing rates, which will be far higher when alternative higher order uses, and limits on obtaining the required quality of INS from economically viable operations within haulage distance of Redbank, are accounted for.

There has been no consideration of this increase in land clearing in the EIS or Assessment Report, nor of the environmental impacts or increase in CO₂ emissions that will eventuate.

2.2. Clearing for Invasive Native Species is inadequately defined and regulated

As identified above, management, regulation and enforcement of land clearing is a mess. The majority of approved land clearing is undertaken under the guise of Invasive Native Species (INS), and this is intended to provide the principal fuel source to be burnt for electricity at Redbank (at least initially). It has long been recognised by the Auditor General (2019) that the criteria are so vague, and regulation so poor, that large areas have been inappropriately approved for clearing, with the LLS (2023) identifying these problems as ongoing.

The rules for INS clearing require minimising soil disturbance, minimising clearing of non-invasive native species (less than 20%), limiting clearing to listed INS with a diameter at breast height over bark of less than 20 centimeters or 30 centimeters diameter at breast height over bark if a listed species, retaining at least 20 INS plants per hectare (at least 2 metres in height) and clearing no more than 90% of each 1,000 hectares of treatment area.

Specifically in relation to Invasive Native Species the 2019 Auditor General report ‘[Managing Native Vegetation](#)’ identifies major problems with definitions of invasive species, leaving the system and classification of INS wide-open to abuse, stating:

Over 200,000 hectares of native vegetation has been approved for thinning or clearing under certificates since the Code commenced in August 2017 to February 2019. Of this around 170,000 hectares authorises the thinning of Invasive Native Species (INS) and over 30,000 hectares covers thinning or clearing under other parts of the Code. ...

However, notification forms do not cover all the requirements of the Code and how they are meant to be implemented. This means requirements in some sections of the Code may be overlooked by landholders.

For example:

- . The Part 2 Division 1 notification form for thinning INS does not specify clearing of non-invasive native species is permitted to only the minimum extent necessary (Clause 25(4) of the Code) and the plant retention requirements for clearing other than by burning (Clause 25(7)). ...*

There is no test to determine if 'invasive native species' are invading a property

There are problems with the use of the term invasive native species (INS) and the lack of evidence of 'invasiveness'. One check for INS under the Code is excessive stem density, but this implies that any natural variation in stem density across the landscape that is above this 'standard' represents a poor environmental outcome. Another check is the proportion of INS relative to other species, but the species classed as INS under the Code are the predominant naturally occurring species in the areas from where they are being cleared.

There are no requirements under the Code for demonstrating that a species is behaving aggressively and invading an area for it to be treated as an INS. There is no test for increasing density, dominance, numbers or cover. Such an invasion should be straightforward to evidence with historical information, satellite images and photographs. It is therefore unclear whether the vegetation to be removed are 'invasive' or just stable and naturally occurring. INS approvals for thinning to date cover around five times the area of other thinning and clearing approvals under the Code.

There was more rigour in the assessment of invasiveness prior to the implementation of the Code. For example, the Clearing of the Invasive Native Species Ministerial Order (INS self-assessable code) required that, in addition to being declared as an invasive native species, the vegetation to be cleared need to be regenerating densely or invading plant communities. The guidelines stated that this will usually lead to, or may have already caused, a change in the structure and composition of the plant community. This could result in the vegetation being dominated by a particular species (or a few similar species) or the structure changing; for example, open grassy woodland may become a shrubby forest with little grass.

An additional eight native species have been added to the list of INS under the Code compared with the arrangements prior to the reforms.

The Auditor General made a number of recommendations for improvements by December 2019, such as 'ensuring landholders are required to resubmit notifications that do not comply

with the Code', and "establishing guidelines for ... treatment methods that result in nil and minimal ground disturbance, especially in relation to invasive native species and thinning other native vegetation". By June 2020, review the Code to address "the absence of the requirement to demonstrate that a species is invading a landscape prior to approving its clearing as an invasive native species".

The EIS identifies *"Current treatment methods for INS include ... Ploughing, Chaining, Raking, Grubbing, Cultivation/cropping"* It is apparent that the Auditor General's recommendation for *"establishing guidelines for ... treatment methods that result in nil and minimal ground disturbance, especially in relation to invasive native species"* has been ignored.

It is apparent that by 2023 little had been done to address the manifest deficiencies with approvals for land clearing, particularly with respect to Invasive Native Species.

The internal 2023 ["Statutory Review of the native vegetation provisions \(Part 5A and Schedule 5A and Schedule 5B\) of the Local Land Services Act 2013"](#) found that most approved clearing is for Invasive Native Species (INS), with a significant risk that many approvals have been given for vegetation that does not qualify as INS due to the lack of clear criteria and guidelines.

In relation to INS, the LLS 2023 "Statutory Review" states:

The Review identified that the main environmental risks posed by INS authorisations³⁶ comprise:

- limited treatment area specificity in assessments under Part 2, Division 2 of the Code to ensure the treatment area is only targeting areas where species are acting invasively³⁷*
- lack of an invasiveness test for a landholder to use as part of Part 2, Division 1 of the Code.³⁸*

These key areas of risk were also noted in previous reviews, and public submissions and key stakeholder consultation undertaken for this Review.

³⁶ Under Part 2 Division 1, landholders may remove Invasive Native Species listed for their LLS region provided they comply with basic criteria (retention of specific species over a certain size and a minimum stem density). This Division contains no requirement for the listed Invasive Native Species to be acting invasively within the treatment area, hence creating a risk that listed Invasive Native Species can be cleared but may not be acting invasively.

Under Part 2 Division 2, Invasive Native Species must be assessed by LLS to comprise at least 50% of the trees and shrubs in the treatment area; or, be invading a plant community where the species is not previously known to occur. Anecdotal evidence indicates potential misinterpretation of this test and a lack of specified treatment area which is leading to authorisations for large areas, particularly in Western LLS region.

2.3. This proposal will incentivise unassessed clearing under the Boundary Clearing Code

The *Rural Boundary Clearing Code* allows landowners to clear certain vegetation on their property within 25 metres of their property boundary, without a permit or approval, if undertaken in accordance with the Code. A person is not guilty of an offence for clearing vegetation in accordance with the Code. The *Rural Boundary Clearing Code* overrides environmental assessment and approval requirements in the *Biodiversity Conservation Act 2016* and the *Environmental Planning and Assessment Act 1979*.

The market for land clearing residues provided by Verdant provides an incentive for unassessed clearing under the Rural Boundary Clearing Code that may not otherwise have occurred. This poses an additional risk to species and ecosystems listed under the EPBC Act.

3. The use of purpose grown crops seems primarily a smokescreen

The claimed intent is to obtain 595,000 tonnes of biomass a year from planted feedstock (likely mallee eucalypts and/or bana grass) by year 4, comprising 70% of feedstock. According to DPI, this would require the establishment of some 14,000 ha of plantations a year, with a goal of 56,000 ha by year 4. The proposal is to manage them on a 4 year rotation. There is no cost benefit analysis to assess the feasibility of this, and the claims of carbon benefits are not consistent with studies that have found that plantation establishment can result in carbon deficits for 5-10 years, or longer, due to loss of soil carbon. There is no assessment of the risk to planted feedstock from fires or contingencies for this. This is a dubious proposal and unlikely to be implemented, meaning that landclearing is likely to be primarily relied upon indefinitely, or feedstock expanded to include forestry residues..

The claimed intent is to obtain 490,000 tonnes of dry biomass a year from planted feedstock (likely mallee eucalypts and/or bana grass) by year 4, comprising 70% of feedstock. According to DPI, this would require the establishment of some 14,000 ha of plantations a year, with a goal of 56,000 ha by year 4.

There is no cost benefit analysis to assess the feasibility of purpose grown crops for Redbank, no concrete proposals to establish crops within the claimed timeframes, and the claims of carbon benefits are contrary to many studies. This is a dubious proposal that appears unlikely to ever eventuate. The proposed consent Conditions include no requirements for purpose grown crops to be established.

3.1. The purpose grown crops will not deliver the carbon benefits claimed, particularly because of loss of soil carbon

Ximenes (DPI 2023) 'Part 1: Potential carbon abatement of growing short-rotation woody crops' identifies the need to plant 20,000 ha of land each year for four years, totalling an area of 80,000 hectares if the goal is to provide the full biomass needs. His assessment that

“There are significant carbon abatement benefits associated with a strategy that relies on short-rotation wood crops to supply the VE power station”, appears to be an ill-informed fantasy.

Ximenes (DPI 2023) claims about rapid sequestration of carbon in plantations is not supported by the evidence. The establishment of plantations involves significant soil disturbance and consequently the loss of soil organic carbon. It can take one or more decades for soils to recover the lost carbon. This means that it can take 5-10 years before biomass in plantations result in a net increase in carbon storage, even when established on cleared land.

From their review of plantations in eastern Australia, Turner *et. al.* (2005) found that plantations may reduce soil carbon for the whole rotation (up to 30 years), with overall biomass growth often not off-setting establishment losses for 5-10 years

... after establishment, there are reduced inputs of carbon into the soil from prior vegetation or rapidly growing weeds, together with accelerated decomposition of soil organic matter as a result of disturbance, and this leads to a net loss of soil organic carbon. In some systems this loss of soil organic carbon is not balanced by carbon biomass sequestration until 5–10 years after establishment and on some sites, a reduction in soil organic carbon may remain until the end of the rotation. ... There was a general pattern of reduced carbon in surface soil immediately after plantation establishment and with time this extended deeper into the soil profile. The actual quantities varied greatly depending on the soil type. The decline was primarily a result of losses of labile carbon and was greater when the previous land use had essentially been native vegetation or highly improved pastures as opposed to regrowth woodland, or native pasture, or degraded land. In the absence of further disturbance, soil organic carbon can accumulate to pre-establishment levels but many short rotation plantations are terminated prior to this being attained.

From their review of Australian studies Polgase *et. al.* (2000) found

For soil in the <10 cm or < 30 cm layers, there were significant effects of stand age on C change. Soil C generally decreased during the first 10 years (particularly the first five years) of afforestation followed by a slower rate of recovery and accumulation.

For north-east NSW Polgase *et. al.* (2000) found

There is a decline in C in the surface 10 or 50 cm for about 15 years after plantation establishment and then a general levelling out. The initial decline in soil C was 10%-12% yr⁻¹ during the first two years after afforestation. Twenty-five years after afforestation, change in soil C was only –1.13 to –1.18 % yr⁻¹.

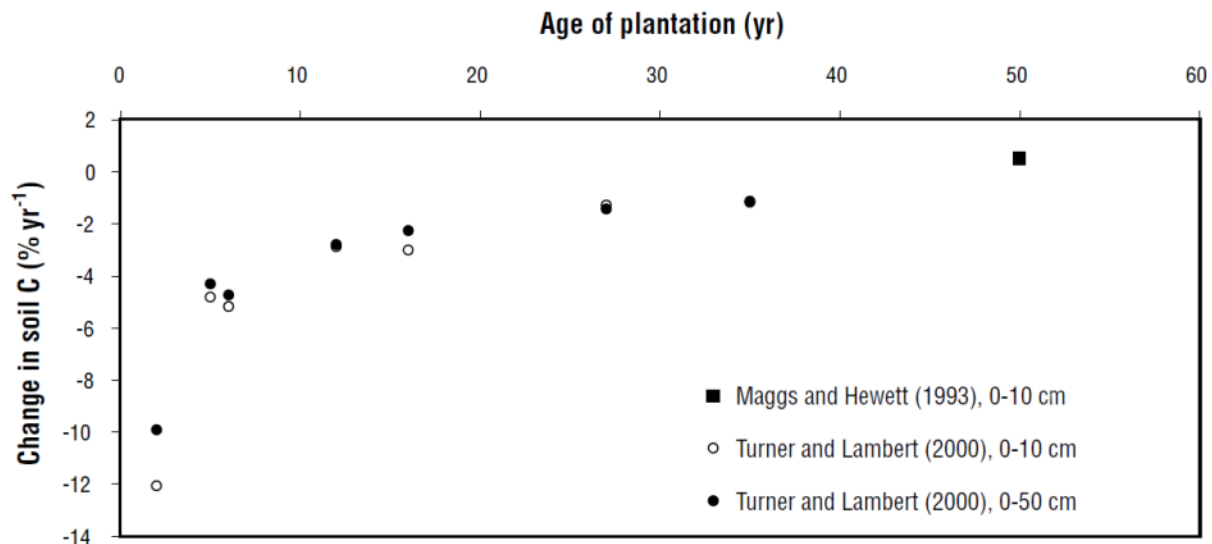


Figure 12.2. from Polgase *et. al.* (2000) Change in soil C in 0-10 cm or 0-50 cm layer under 2- to 50-year-old forest on ex-pasture land in the subtropical climatic regions of Queensland and the north coast of New South Wales.

Polgase *et. al.* (2000) consider that the "losses in soil C" by Turner and Lambert (2000) "were by far the largest recorded in any of the studies reviewed" and thus should be "treated with caution", summarising them as:

*The paper by Turner and Lambert (2000) used a chronosequence approach to estimate change in soil C following afforestation. The calculated decrease (0-50 cm) during the first two years was about 3,900 g m⁻² (1,900 g m⁻² yr⁻¹) for *P. radiata* plantations and 8,400 g m⁻² (4,200 g m⁻² yr⁻¹) for the *E. grandis* chronosequence. Turner and Lambert (2000) further state that it may take 10-20 years before losses from soil C are offset by accumulation in biomass.*

Fargione *et. al.* (2008) found that any strategy to reduce GHG emissions that causes land conversion from native ecosystems to cropland is likely to be counter-productive, and that even the conversion of abandoned pasture to biofuels created a lasting carbon debt.

Our analyses suggest that biofuels, if produced on converted land, could, for long periods of time, be much greater net emitters of green-house gases than the fossil fuels that they typically displace. All but two—sugarcane ethanol and soybean biodiesel on Cerrado—would generate greater GHG emissions for at least half a century, with several forms of biofuel production from land conversion doing so for centuries. At least for current or developing biofuel technologies, any strategy to reduce GHG emissions that causes land conversion from native ecosystems to cropland is likely to be counter-productive.

We also evaluated the possibility that U.S. cropland that has been retired from annual crop production and planted with perennial grasses may have a short payback time when converted to corn ethanol production, because these systems have already lost a substantial portion of their carbon stores. However, after abandonment from cropping, perennial systems gradually recover their carbon stores. For U.S. central grassland on cropland that has been enrolled in the U.S. Conservation Reserve Program for 15 years, we found that converting it to corn ethanol production creates a biofuel carbon debt that would take ~ 48 years to repay.

4. The proposed consent fails to specify or identify limits on biomass sources.

Verdant's strategy appears to be to float some ridiculously inflated potential resource guesstimates, while not committing to any particular source, so that once approval is granted they can pick and choose from the full gambit of potential resources, and likely claim shortfalls to seek a variation to use forestry residues. The proposal to use purpose grown crops is dubious and likely to be a smokescreen to cover indefinite use of native vegetation.

The EIS (p89) states:

*However Verdant has determined that it will **not** seek to use the native bio-material sourced from native forestry operations to use as a feedstock fuel at the Facility even though it is exempted from the provisions of the General Regulation and could be used lawfully for electricity generation.*

While the proposal makes no mention of using material derived from native forests other than by landclearing, it only rules out using trees and parts of trees resulting from a private native forestry plan or integrated forestry operations approval (i.e. logging residues). It leaves allowable sources to include bio-material obtained from plantations, exempt farm forestry, clearing in accordance with a land management (native vegetation) code, sawmill waste and wood processing waste.

A danger is that trees will just be fed through sawmills with minimal sawn timber recovery to generate large volumes of "waste" as fuel, and that project creep will occur whereby logging "residues" will later be added.

The proposed consent conditions provide no requirements as to where the biomass can be obtained. The concerns are that if the volumes cannot be economically achieved from land clearing, which seems likely, that they will seek the volumes from logging, and that the purpose grown crops will never be established.

Should this proposal be approved, it is essential that the consent specify the source and volumes of biomass to ensure the claimed intent is abided by. It should:

- Prohibit the use of biomass from *native forestry operations*
- Ensure there is no increase in current rate of landclearing, by requiring that operations cannot commence until sufficient purpose grown crops have been grown to provide 70% of input

5. The proposal will result in the emission of some 1.3 million tonnes of CO₂ per annum at the powerplant, yet it is falsely claimed there will be no emissions.

The claim is repeatedly made that *“The Proposal provides near-net zero dispatchable electricity in support of achieving the goals of the Climate Change Act 2022 and the transition to renewables.”*, noting *“the estimated GHG emissions from dry wood combustion were based on CH₄ and N₂O only, and the emission factor for CO₂ was taken to be zero”*.

The Department’s [Assessment Report](#) accepts this argument, stating *“Scope 1 emissions calculations include an emission factor of zero for carbon dioxide (CO₂) emissions from the combustion of biomass.”*

It is a fallacy for the EIS (p167) to discount emissions from wood to pretend the proposal is relatively benign with Scope 1 and 2 emissions of around 25,000 t CO₂-e per annum, as the combustion of 850,000 tonnes of wood on site will result in the release of some 1.3 million tonnes of CO₂ each year. Similarly, it is invalid to claim *“As the Proposal’s Scope 1 emissions will not exceed 100,000 t CO₂-e per year at any time over its operational life, there is no requirement for the offsetting approach to be verified by an independent expert reviewer”*.

This is a nonsense and intentionally misleading.

The proponents go so far so far as to claim that by comparison to coal *“It has been estimated that the production of electricity from biomass at Redbank will save 1,069 kgCO₂-eq for every MWh generated”*, *“due to the absorption of carbon through the growth of biomass which ultimately forms the fuel which enters the combustion process”*. The alternatives of wind and solar power are not considered.

It is a pretence that there will be no CO₂ emissions from the facility. Half the dry wood is comprised of carbon, resulting in some 350,000 tonnes of carbon being released from the combustion of 700,000 tonnes per annum. When oxidised to form CO₂, it will result in the release of some 1.3 million tonnes of CO₂ each year. Over the project’s proposed life of 30 years, this will result in 39 million tonnes of CO₂ being added to the atmosphere, during a period when we are meant to be urgently reducing emissions of CO₂. There will be additional emissions from debris and soils at the clearing sites, and from processing and transporting woodchips/pellets (see Section 6).

It is dishonest for the EIS and Assessment Report to claim that there will be no emissions of CO₂ at Redbank, as the reality is that there will clearly be massive emissions. The claim is made that the CO₂ needs to be accounted for at the land clearing stage, rather than when it is burnt, though it should not be open to the proponent to pretend that they do not occur at the site. For honesty and transparency, the emissions at the plant need to be admitted. If the proponents want to claim that these emissions are offset elsewhere this needs to be fully and transparently justified.

Usually when claims are made that burning biomass will result in no net emissions, they are based on regeneration taking up the released carbon over time. The principal problem is that in the current climate emergency we urgently need to reduce CO₂ emissions, and we don't have time to wait for the decades or centuries it will take for trees to re-sequester the emitted CO₂.

A variety of so-called INS can be freely removed up to 30cm diameter at breast height (dbh). Ngugi *et. al.* (2014) provide growth rates for a few species classed as INS in rainfall zones less than 600 mm:

Species	Mean diameter growth rates (cm yr ⁻¹)	Age at 30cm dbh (years)
Bimble Box (<i>Eucalyptus populnea</i>)	0.23	130
Callitris glaucophylla (white cypress)	0.18	167
Geijera parviflora (wilga)	0.26	115

The median annual rainfall for Cobar is 390mm per annum, so growth rates would be significantly less than this. It is apparent that under the INS Code some of the trees removed will have been accumulating carbon for well over a century, so it will take over a century for regrowth to regain the emitted carbon. Given that biomass, and thus carbon, increases exponentially with tree size, these larger trees will represent a significant proportion of the biomass removed, and will be targeted for this reason.

If left growing these trees would continue to sequester ever increasing volumes of carbon in wood and soils as they age. Given the intent is to stop regeneration of woody vegetation that reabsorbs the carbon, then the carbon will not be re-sequestered at clearing sites, with the outcome a gross release of carbon to the atmosphere. Claims that the emitted CO₂ may be taken up by purpose grown crops is disputed, particularly given the significant loss of soil carbon in establishing crops (see section 3).

Primary reliance for pretending there are no CO₂ emissions is placed upon the claim that the vegetation being cleared has already sequestered the CO₂. Though if it was not cleared the vegetation would continue to sequester ever increasing volumes of carbon in wood and soils as they age.

Regarding discounting CO₂ emissions, the EIS (p144) claims:

The majority of this saving is due to the absorption of carbon through the growth phase of feedstocks – the products of which ultimately forms the wastes which enter the combustion process. The physical emissions of carbon dioxide from the power station is negated by this earlier absorption.

The Department's [Assessment Report](#) claims "*based on the assumption that the combustion of biomass in the power station is balanced by the amount of CO₂ taken out of the atmosphere by the biomass during its life as part of the natural carbon cycle. For biomass waste products, CO₂ would be released into the atmosphere upon decomposing, irrespective of whether it is used to fuel the power station*".

This claim is dependent upon the pretence that the vegetation would be cleared and left to rot or burn irrespective of the demand for biomass by Redbank. In this case it is apparent that most of the vegetation from which the biomass is to be obtained would not otherwise be cleared, as demonstrated in Section 2.1 of this submission. In practice the vast majority of

the vegetation cleared to feed Redbank would not otherwise be cleared, and would instead be left to grow and continue sequestering carbon. There has been no consideration of the additional clearing likely to result from the proponent's proposal.

Removal of native vegetation for biomass will release the carbon stored in the vegetation, release a significant proportion of soil carbon, and remove the ongoing carbon sequestration potential of that vegetation if left alive. Land clearing is a permanent process as there is no regrowth to offset emissions.

Another claim is that the carbon emissions are considered in carbon accounting under the land use, land use change and forestry (LULUCF) category. Where-ever the emissions are counted as contributing to NSW's carbon accounts, they still occur, and they are still attributable to Redbank, so need to be clearly and transparently identified.

With no process to reabsorb the emitted carbon it will stay in the atmosphere for decades or centuries in the midst of a climate emergency. This proposal will rapidly burn through NSW's remaining carbon budget.

From their review of biomass burning, Mackey *et. al.* (2025) concluded:

We critically examined claims, and models used to support them, that bioenergy sourced from forest biomass, including logging residues, is either carbon neutral or will reduce net emissions. We also examined evidence about the impacts on forest ecosystem integrity and species' capacity for adaptation. We found that models used to evaluate bioenergy rely on key assumptions that are in themselves capable of delivering results supportive of bioenergy as an effective strategy. Yet there is abundant evidence that these assumptions are invalid and that burning forest biomass for energy is not carbon neutral or beneficial. From our assessment, we concluded that burning forest biomass, including logging residues, increases atmospheric CO2 concentration; land sector reporting using net greenhouse gas inventories obscures the impact of forest harvesting on ecosystem carbon stocks; and biomass energy will most likely displace other renewable energy, rather than fossil fuels. We also found that the use of bioenergy 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. Bioenergy use is therefore in direct conflict with the commitment to limit the rate of global warming so that ecosystems can adapt naturally to climate change. A rethink is warranted of its role in international and national climate policy, and it should not qualify under renewable energy policies including directives, targets, and other legislated instruments. Together, we conclude that burning forest biomass for bioenergy is not a pathway to climate resilient development.

5.1. There is a failure to consider the genuine low-emission alternatives of solar and wind.

The burning of biomass is compared to the alternative of burning coal (ie DPI 2023), whereas it should be compared to low-emitting alternatives of wind and solar power. As identified by the proponent in the public meeting, *"this is a new application ... this is a brand-new application which sets aside the previous development consents operating on the*

property". There is no reason why coal should be the only comparison fuel as the coal-fired power station closed a decade ago and no one is proposing resurrecting it.

The Life Cycle Analysis (p141) undertaken compares coal to biomass, without accounting for the release of CO₂ that occurs when and where the biomass is harvested, the loss of biomass in processing into pellets/chips, fossil fuel use in harvesting and transporting, and the release of CO₂ when the biomass is burnt to generate electricity. Any valid LCA has to fully account for emissions at every stage in the process.

There has been no valid identification of, or comparison with, alternative power sources.

6. There will be significant additional CO₂ emissions, that could double total emissions, which are also not considered

Over time purpose grown fuel crops and agricultural waste or residues are claimed to become increasingly important, with purpose grown crops claimed to provide 57% of input in year 4 and 70% thereafter. Though crop proposals are vague and ill-formed, and thus can have little credibility. The carbon emissions associated with these have not been assessed. As identified in Section 3, there will be significant loss of soil carbon at these sites.

At land-clearing sites only a proportion of the vegetation cleared will be suitable for chipping, meaning that a significant proportion of the vegetation cleared will be left to rot or burn on site, resulting in additional CO₂ emissions. With leaves, branches, stumps, roots and unsuitable species likely left behind, the volumes could be very large. For example below-ground biomass generally represents 25% of above-ground biomass, stumps would not be suitable for chipping because of rocks and soil, and leaves and small branches would not produce chips of the desired size. The volumes rejected will in part depend on whether the material is chipped on site, or needs to be of sufficient dimensions for transport to secondary processing facilities. There will be additional significant emissions from disturbed soils.

There is an intent to establish "satellite processing facilities" where drying, chipping and screening of woodchips will be undertaken, yet there is no indication as to how many satellite processing facilities are intended or where they will be located, the volumes to be processed, management of fines and waste, storage capacity etc. It is repeatedly stated that *"All preparation including drying, chipping and screening will be performed off site"*, and identified that *"Verdant will also seek to establish satellite processing facilities where feedstock can be stored and processed to specification, these facilities when required with require their own DA and EPL approvals."*

A significant proportion of the material removed from the clearing sites will be converted into waste at the secondary processing sites, resulting in additional CO₂ emissions. The EIS identifies that woodchips are *"screened to 30 mm nominal size (+15mm - 50mm)"* to *"Prevent excessive fines, nor overly sized particles"*, meaning that chips smaller or larger than this are screened out. A proportion of material will also be contaminated. No identification of the volume expected to be screened out has been found in the documents. It seems reasonable to assume that 5-10% may be unsuitable for combustion, and thus

become waste at the secondary processing facilities. This also means that the volumes obtained from land clearing will have to be proportionally greater.

There will also be significant emissions of CO₂ from machinery used to clear and stockpile the vegetation, and to process it (chipping, pelletisation, drying), as well as transport to and from the clearing sites to the secondary processing facilities and thence to Redbank, and transport of wastes (i.e. fines, ash) to disposal sites.

CO₂ emissions will be significantly increased above those identified at the power plant due to:

- Decay and burning of material not suitable for chipping on clearing sites (likely to be over 30% of biomass)
- Loss of soil carbon due to massive soil disturbance on clearing sites
- Machinery used in clearing process
- Removal of fines and unsuitable material in screening at secondary processing sites (which is likely to result in more than 10% of biomass becoming waste)
- Drying of wood chips to the desired moisture content, particularly in wet weather
- Transport of material from the clearing sites to secondary processing sites, and thence to Redbank, as well as return trips
- Transport of wastes from the secondary processing sites and Redbank to disposal sites.

Cumulatively these will result in a significant increase in total CO₂ emissions, well above the 1.3 million tonnes of CO₂ per annum released by burning the biomass at Redbank. It is not unreasonable to consider that additional CO₂ emissions could be more than that released at Redbank. These emissions need to be reliably identified and accounted for.

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