New South Wales Government
Independent Planning Commission

TRANSCRIPT OF MEETING

RESTART OF REDBANK POWER STATION (SSD-56284960)

PUBLIC MEETING

COMMISSION PANEL:	PROFESSOR NEAL MENZIES AM (CHAIR)
	ALEXANDRA O'MARA
	PROFESSOR ELIZABETH TAYLOR AO
OFFICE OF THE IPC:	JANE ANDERSON
	CALLUM FIRTH
REGISTERED SPEAKERS:	MARK JACKSON (JEP Environmental & Planning on behalf of Verdant Earth Technologies)
	GEOFFREY STEVENSON
	BEN EWALD (Doctors for the Environment Australia)
	ROD ROBERTS (Office of Rod Roberts MLC)
	MARTIN FALLDING
	BORIS NOVAK (New.E Hunter New Energy Cluster)
	PETER MORRISSEY (HunterNet Cooperative)
	TONY VENTURA
	LYNN BENN (Knitting Nannas Hunter Loop)
	WENDY WALES (Denman Aberdeen Muswellbrook Scone Healthy Environment Group)
	GREGORY HALL (Rainforest Information Centre)
	DAN REPACHOLI
	BOB DOYLE
	IAN DONOVAN (National Parks Association of NSW)
	JANE WATSON

FABIANO XIMENES (NSW DPIRD)

LOUISE STOKES

SUSIE RUSSELL (North Coast Environmental Council)

MARK BROWN (IEA Bioenergy TCP)

DAILAN PUGH (North East Forest Alliance)

PEGG PUTT (Biomass Action Network of EPN International)

JANE MCINTYRE (No Electricity from Forests)

TOM FERRIER

LIS ASHBY (Biodiversity Council)

PROFESSOR HUGH POSSINGHAM (University of Queensland/ Biodiversity Council)

HANNAH THOMAS (Centre for Biodiversity and Conservation Science, University of Queensland)

PROFESSOR DONALD BUTLER (Independent Expert briefed by the Environmental Defenders Office on behalf of the Nature Conservation Council)

PROFESSOR BRENDAN MACKEY

PROFESSOR ANDREW MACINTOSH (Independent Expert briefed by the Environmental Defenders Office on behalf of the Nature Conservation Council)

BRAD SMITH (NSW Nature Conservation Council)

CANDICE BARTLETT (NSW Nature Conservation Council)

FRANCES PIKE (Australian Forests and Climate Alliance)

MARGARET MCLEAN

GREG BOURNE (Climate Council)

DAVID WATSON (Independent Expert briefed by the Environmental Defenders Office on behalf of the Nature Conservation Council)

HEATHER KEITH (Griffith University)

MARK JACKSON (JEP Environment & Planning on behalf of Verdant Earth Technologies)

LOCATION: SINGLETON CIVIC CENTRE

12 QUEEN STREET, SINGLETON

DATE: 10:00AM – 04:00PM

MONDAY, 11th AUGUST 2025

THE MEETING COMMENCED

PROFESSOR NEAL MENZIES AM: Okay everyone, let's kick this show off. I'm Neal Menzies, I'm the Panel Chair. I'm going to start with a formal statement that I need to read out to everyone and then we'll proceed with our set of speakers.

So, good morning and welcome to the Independent Planning Commission's public meeting into the State Significant Development Application for the Restart of the Redbank Power Station (SSD-56284960).

I am speaking to you from the Wanaruah land. I acknowledge the traditional owners of the countries from which we're meeting today. I pay my respects to their Elders past and present, and to the Elders from other communities who may be participating today.

I'm Neal Menzies, I'm the Chair of this Panel, and joining me are my fellow Commissioners Elizabeth Taylor and Alex O'Mara. No conflicts of interest have been identified in relation to our determination of this development application.

We have a limited and specific role at the end of the planning process. We decide if an application should go ahead and if so, under what conditions. We consider the Department's Assessment Report, the application, your written and oral submissions, and other materials that the planning law requires us to consider. All of these materials are either already publicly available or will be made available on our website.

In making a decision in this case, the Commission must obey all relevant laws and consider all applicable policies and the public interest. We're also obliged to consider public submissions, and that's the purpose of today. We want to hear what you think about the merits of the application. This is not a forum for submissions on whether you like or approve of the Applicant, the laws we must obey, or the policies we must consider.

The application has already been assessed by the Department on our behalf. Many of you have participated in the Department's processes. Thank you for your participation.

There is no need to repeat your previous submissions. They are all available to us for our consideration. The Applicant and the Department have considered your submissions and taken them into account in the application and assessment and conditions we're considering today.

Today, we want to hear your response to the Department's assessment, recommendation, and the recommended conditions. Even if your submission today objects to the application being approved at all, we encourage you to tell us whether any of your concerns could be addressed either wholly or in part by the imposition of conditions. Your consideration of alternatives does not in any way compromise your submission. It enables the Panel to consider all options.

We will shortly proceed to hear from our registered speakers. While we will endeavour to stick to our published schedule, this will be dependent on registered speakers being ready to present at their allocated time. I'll introduce each speaker when it's their turn to present to the Panel, and everyone has been advised in advance of how long they have to speak. A bell will sound when a speaker has one minute remaining. A second bell will sound when the speaker's time has expired.

To ensure everyone receives their fair share of time, I will enforce timekeeping rules. Extensions may be granted on a case-to-case basis by me as Panel Chair. However, in the interests of fairness to other registered speakers, an extension may not be granted.

If you have a copy of your speaking notes or any additional material to support your presentation, it would be appreciated if you would provide a copy to the Commission. Please not that any information given to the Commission may be made public. The Commission's Privacy Statement governs its approach to managing your information and is available on the Commission's website.

For housekeeping purposes, toilets can be found in the foyer. And in case of emergency, please evacuate the building via the marked exit doors.

Firstly, we will hear from the Applicant to discuss any changes to the application since public exhibition. Then at the conclusion of the public meeting, we will call on the Applicant to answer any questions or respond to any issues raised during the public meeting.

Just so everyone understands, as a Panel we're here to listen but we are also here to ask questions. So, we will jump in and ask questions of clarification if there's something in the submission that a speaker's made that we think is particularly important and they haven't talked about it, we might ask them to elaborate on that. Please understand that we're just trying to get an understanding of the whole system, and so our questions may seem at times tangential; it's that we're trying to think through the various aspects of this.

And I wanted to also just stress, and I'll repeatedly do this during the course of the day, even if you're objecting to the proposal, also bear in mind that we might approve it, in which case help with the conditions is extremely useful to us. So, please don't just sit with we're reliant on the panel to reject this, we also think that you should be considering if they do approve it, how do we make it better. I'll repeatedly ask people, you know, is there a condition that you would suggest to us to make this a better proposal?

Okay. Mark, over to you to present for the Applicant. So, this is Mark Jacobson from Verdant Earth Technologies.

MR MARK JACKSON: Thank you Commissioner, for that introduction, and thank you to each and every one of you for attending and taking time out of your work and your commitments to have your voice heard and to hear from the Applicant in relation to how your issues have been addressed.

So, what I'd like to do today is to firstly introduce the Verdant management team. So, we have Richard Poole, the CEO, do you want to just stand up, Richard? Sorry. So, Richard and his management team are here all day today. They're here to engage, hear from you, and to address any residual concerns you still have. So, I encourage you to have a chat with them as well.

Before I sort of launch into a brief introduction to the project and to set the scene for today, I'd just like to highlight that this is a new application. So, historically the power station has operated on coal tailings as a fuel. So, this is a brand-new application which sets aside the previous development consents operating on the property. The Applicant also accepts the Department of Planning's Assessment Report and is in agreement with that report, and also in agreement with the draft conditions of approval.

So, just next slide, Stuart, if that's okay. What I'd like to do first today is to run through six key issues which came up as key issues from community members and also organisations that made submissions in relation to the proposal. And that first issue, which was raised by most in terms of frequency, was concerns around biodiversity and land clearing concerns. And what I'm going to do, I'm going to highlight how the Applicant has addressed these concerns.

So, there were submissions from individuals and organisations, including the Wilderness Society, that raised concerns about potentially an increase in native forest logging and concerns around biodiversity and unintended impacts of land clearing.

So, how has this matter been addressed? Well, the Applicant has very clearly stated in the application that the application excludes all waste from native forestry logging and saw milling operations to avoid any concerns around biodiversity from those material streams.

So, all biomass must comply with an EPA specific order and exemption that is lawfully sourced from agricultural weeds, invasive weeds, on agricultural lands approved by Local Land Services. As well as vegetation removed from construction works and other sources, including agricultural waste materials as well.

The Applicant's worked really hard to also develop a fuel strategy whereby they can use purpose-grown fuel crops which are grown on lands in the Hunter Valley, particularly on mine sites and marginal agricultural land, to provide sustainable ongoing biomass to support the operations of the power station.

So, next slide thanks Stuart. There were concerns in relation to invasive native scrub, which is proposed as a source of biomass for the power station. So, the Applicant has implemented a series of controls to ensure that biodiversity impacts are avoided. So, only INS generated by landholders which is strictly approved by Local Land Services under the Act and the Native Vegetation Code will be used as a source of biomass.

All of this material must have no higher order use option, okay. So, what is a higher use option? A higher use might be the utilisation of that material as a mulch on

agricultural land or as a source of carbon for improving soils. So, the draft consent conditions sets out that an EPA approval is required for that material before it can be used whatsoever as a fuel type.

So, as part of the EPA approval process, there's a strict record keeping system required by the Applicant. So, testing, sources and quantities of fuel being sourced. And those records need to be kept for a minimum of six years.

It's really important to note as well that INS cannot be generated from areas of significant biodiversity, including coastal wetlands, old growth forests, littoral rainforests, core koala habitat, and critically endangered ecological communities. No INS will be obtained from those locations. All material must comply with the Local Land Services Guidelines, and an audit program will be implemented to confirm compliance with those guidelines.

And it's also really important to note that this fuel strategy developed by the Applicant has been based on more than a 20-year research program that's looked at the ecological benefits and improved net biodiversity outcomes, in terms of managing INS on agricultural land. And that's involved a collaboration by the now Department of Planning and Environment, the CSIRO, natural resource consultants, University of New England, and others.

So, the Applicant strongly believes the proposal cannot and will not impact biodiversity or result in increased land clearing.

So, the second main issue related to the reliability of biomass fuel and changes to legislation. There were concerns expressed by the North East Forest Alliance and the National Parks Association of New South Wales. The Applicant's addressed this matter by conducting significant independent market research to look at the availability of lawful biomass which can support the operations of the proposal.

In the first five years, the power station will rely heavily on what we call "eligible waste fuels" with no higher order uses. But towards year 5, those fuels will be gradually changed out by purpose-grown crops. Those purpose-grown crops will need time to develop, so that's why it's a staged transition to those fuel types.

So, these involve fast-growing vegetation such as coppice crops and short rotation woody crops harvested every three to five years. And the significant landholdings in the Hunter Valley alone, 130,000 hectares of coal mining lands which require rehabilitation. So, there's discussions already occurring with those mine site operators to partner with them to potentially utilise that land for growing these sustainable fuels.

So, in summary, the proposal can be adapted. If there's a change in law where some fuel cannot be used, the purpose-grown fuel strategy which has been developed can be ramped up further to make up that shortfall.

The third major issue was concern over climate change impacts. So, the submissions included concerns around carbon dioxide emissions at the point of combustion not

being considered, as well as climate change impacts. And this was raised by individuals, including organisations such as the Australian Forest and Climate Alliance.

So, how has the Applicant addressed this matter? The Applicant has explained in detail that in the Intergovernmental Panel for Climate Change (or IPCC) most recent report, modern bioenergy, through which this is an example, is an important tool for mitigating climate change for reducing carbon dioxide emissions from traditional fossil fuel generated electricity.

Under IPCC convention, the CO_2 emitted from sustainable biomass sources for this type of application is considered to have a zero contribution to climate change. So, this position has been accepted by the state's climate change regulator, the EPA, in that the proposal will effectively be a near net zero project, and a very small contributor to net greenhouse gas emissions in New South Wales.

So, there's a graphic on the right-hand side showcasing really how carbon is cycled through the biosphere that relates to this project. So, carbon dioxide is absorbed from the air that is fixed into plants through a process called photosynthesis. Those plants and woody crops are harvested for fuel, which is then combusted in the power station. And that CO_2 is released and ultimately reabsorbed by vegetation replanted to be grown as fuel. So, this is referred to as effectively a closed carbon cycle.

Where climate change occurs is particularly where fossil fuels are extracted from the natural environment, such as oil and coal, and that CO_2 is released into the biosphere, contributing to global warming.

Next slide thanks, Stuart. So, the fourth major issue related to, is biomass a form of renewable energy? So, this was raised by individuals, including the North Coast Environment Council and the Nature Conservation Council.

So, how's the Applicant addressed this matter? Well, once again, in the IPCC most recent report acknowledges that bioenergy can be harmful when biomass is sourced from old-growth forests, where land conflicts occur, where biodiversity loss can occur, and when poor technology is used, which can lead to air pollution. However, the IPCC also acknowledges that modern bioenergy done well can retain biodiversity, manage resources, prevent deforestation, and that material can be broadly classified as renewable.

So, the IPCC and also the International Energy Agency highlight that modern bioenergy is a critical pathway to achieving net zero emissions by 2050 by providing baseload or firming power to fill the gap with intermittent renewable technologies, particularly wind and solar.

So, the fifth issue related to air quality. And this was generated in a number of community submissions. So, how's the Applicant addressed this matter? Well, the Applicant has submitted a rigorous air quality impact assessment which has demonstrated that there will be minimal impact on local air quality. And this has been

done in accordance with EPA's strict Air Quality Impact Assessment Guidelines. And the proposal will meet all EPA emissions criteria.

The power station has advanced pollution control systems in place, and continuous monitoring of air emissions will be put into place as well in accordance with strict EPA licensing requirements.

The draft consent conditions also talk to a process of validating air emissions during the commissioning process, which is an opportunity for the regulator to check and confirm the modelling done in the application accurately reflects actual performance. And it's important to note as well, the EPA's the regulator for this site. So, this site will need to comply with its licence conditions on air emissions at all times.

The last issue raised in submissions related to human health concerns. So, how has this been addressed? Well, the Applicant has lodged a detailed human health risk assessment, and that risk assessment has considered impacts on air quality, as well as human health, and including indirect pathways such as the impact on water quality in rainwater tanks used for drinking water, as well as impacts on crops and produce grown in the area.

So, the proposal or the study found that there would be negligible impact on human health as a result of the proposal. All biomass fuels, before they reach the power station, require independent laboratory testing to confirm compliance with the EPA requirements, and also the power station's specifications.

The project will be supported by a comprehensive Quality assurance and Quality Control Plan to make sure fuels are consistent, and contaminated materials are not received. The power station, as I mentioned before, will be strictly regulated by EPA licence conditions and continuous reporting to ensure impacts on air quality are avoided, and therefore no impacts on human health will occur.

So, the last slide I have here today is to just highlight the ongoing community engagement being conducted by the Applicant. So, the Applicant's committed to regular engagement with Council, residents and businesses in the local government area. They're here today, I'd encourage you to make your voice heard, and to engage in that discussion.

There will be a community complaints line established for complaints and comments to be made to the power station at any time of the day or night. There will be a community consultation meeting established – or committee – established as well, which will be a forum for community organisations, residents and Council and EPA to provide input in terms of the operation and development.

There will be continuous air quality monitoring and reporting as well as noise monitoring too. And there's work (excuse me) underway to ensure the benefits of the project will be maximised locally. As I said today (excuse me), the Applicant's management team is here, please reach out and ask any questions. And I'd just like to

conclude by noting that we really appreciate your involvement today and we look forward to today's public meeting. Thank you.

PROF MENZIES: Mark, a quick question from me. What's the life expectancy of the project and what are the end-of-life plans for the facility?

MR JACKSON: Thanks for the question, Commissioner. The proposed lifecycle of the project is about 30 years; however, the power station may be subject to renewal, maybe replacement of plant and equipment as part of the overall sort of ongoing maintenance and operation of the power station. If better technology becomes available for certain parts of the plant, that part of the plant may be replaced over time.

PROF MENZIES: Fellow Commissioners?

MS ALEXANDRA O'MARA: I have one around the purpose-grown crops. I think your slide indicated that you're only intending to do that on mine sites. Is that correct?

MR JACKSON: Yes, thanks Commissioner. So, the presentation highlighted that purpose-grown crops would be grown on rehabilitated land associated with mine sites plus also marginal agricultural land as well. And the reason why marginal agricultural land is being targeted and not prime agricultural land, is that we don't want land use conflicts occurring, okay.

So, in areas that are agricultural lands which are prime lands for cereals and cropping and grains and for food production, we don't want purpose-grown fuels competing with those very valuable land resources.

PROFESSOR ELIZABETH TAYLOR AO: Could I just add a follow on from that one. Has an assessment been done of then what fertilisation might be required for those or other sort of soil enhancement activities in those plantations?

MR JACKSON: Thanks, Commissioner. So, in terms of the work done in terms of fertilisation rates, there's a research program currently underway with the Department of Primary Industries that the Applicant has established. And those matters are being worked through at the moment in terms of optimising the production systems required for the efficient sort of growth and generation of these purpose-grown biomass fuels.

Obviously, fertiliser rates, that is a matter which will vary from site to site, depending on soil fertility. And those matters are being looked at in terms of optimising the production system for those fuels.

PROF TAYLOR: I have one – or did you want it?

MS O'MARA: I just wanted to ask about water – is this …

PROF TAYLOR: You ask …

MS O'MARA: My understanding is that you need to secure a water access licence, is that correct?

MR JACKSON: Correct, Commission, yes, that's right. So, the power station used to have a water access licence, that was relinquished as part of the sale of the power station in about 2018. That water access licence will need to be re-secured. Okay. So, the Applicant has been in discussions with potential sellers of those water access entitlements, and the Applicant doesn't feel that's a barrier going forward. It's just a matter which needs to be resolved in purchasing those entitlements, assuming the project's approved.

PROF MENZIES: Mark, the physical infrastructure for getting water from the river – is it still in place?

MR JACKSON: Correct, Commissioner. So, the water intake arrangement from the Hunter River is in place. That was put in place in about 2001 on the original commissioning of the power station. And the same water access arrangement will be utilised to support the power station.

PROF MENZIES: Thank you, Mark.

MR JACKSON: Thank you very much.

PROF MENZIES: Our next speaker is Geoffrey Stevenson, who is here in person. Geoffrey.

MR GEOFFREY STEVENSON: Thank you. Good morning ladies and gentlemen and the Commissioners on the Panel. My name is Geoff Stevenson, I'm a father of two, I live locally in Singleton Heights. I've lived in Singleton for 14 years now. I'm here to speak in favour of the application and to advocate that it be given approval.

We really need to encourage capital investment and energy infrastructure in this area and in the state. And for this application to be declined would discourage any such capital investment, would discourage business in the local community, would potentially affect jobs. I know it's a small power station and it may not create a lot of jobs, but there is a lot of potential for the purpose-grown fuels to be grown on old mine sites, for rehabilitation, and the way that this power plant will assist in mine site rehabilitation, I think, is very beneficial to the community.

So, it's all I have to say. I just hope you'll consider approving the application. And consider the benefits it will provide to the local community of the Hunter Valley and to New South Wales. Thank you.

PROF MENZIES: Thanks Geoff, very clear statement. Commissioners, did we want to grill Geoff while he's on his feet? No. Our next speaker's Ben Ewald from Doctors for the Environment Australia, who is also in person. Ben.

MR BEN EWALD: Good morning. Hi there. I'm Dr Ben Ewald, I'm a medical practitioner in Newcastle and also hold a PhD in Epidemiology and I'm here speaking on behalf of Doctors for the Environment Australia. I live in Newcastle.

So, Doctors for the Environment Australia is a national organisation of medical practitioners and medical students who believe that to have a healthy population you need a healthy environment. We're concerned about the things at sort of all scales – from the level of protecting the climate to having somewhere safe to live. Protecting the air that we breathe and the water that we drink so as to maintain health. Having a healthy food supply. The design of healthy cities that supports people to have healthy lifestyles. And also looking at the practice of medicine so that the clinics and hospitals we work in are running in a way that doesn't create environmental harm ourselves.

So, we object to this power station restart on about three different grounds. The first one is about air quality. So, the power station which is about 10 kilometres out this way, the closest air quality station to that is at Warkworth and that's the only station in the Upper Hunter to record PM10, that's the coarse fraction particles, over the national annual standard is that site there.

So, the national standard for PM10 is 25 micrograms per cubic metre as an annual standard. And in 2022, it was within the standard at 19.3. In 2023, it was over the standard at 32.5. And in 2024, it was over the standard at 28. So, these particles are harmful to health in that they've been shown in epidemiological studies to be associated with increased rates of lung disease, including lung cancer, including asthma exacerbations, and associations with total mortality.

The way particles are measured, PM2.5, the finer particles that have the most significant health impacts, they're a subset of PM10. So, that PM10 value includes some of the finer particles which are the most damaging ones.

If you look at the daily records for PM10, Warkworth had seven days – this is in the last – no, in 2025 up till July, so taking the numbers from the monitor that's out there at Warkworth and looking at it myself, so far until the 27th of July, there'd been seven exceedances of the daily standard at that monitor, and that's the most exceedances of any monitor in the Upper Hunter. Most other sites had one exceedance. Mount Thorley had three and Camberwell had two. So, this is the most – the monitor out there is recording the highest levels of particle pollution in the whole region.

So, now, I think the proposal, there has been an air quality study done on the proposal, which looks at it running in optimum conditions, you know, run perfectly, and with perfectly prepared fuel. So, and I see that there was an air quality assessment by EMM saying that it would be no more polluting than the coal, when it was running on coal in the past. Now, I don't think that's the appropriate comparison. I think the comparison is between burning biomass and burning nothing. And that's what we should be looking at now.

So, the regional air already exceeds these standards, and the proposal makes it a bit worse. Now, it's only a small amount worse, it's an extra, you know, less than

1 microgram per cubic metre, as shown in those studies. But the way air pollution impacts are assessed does include cumulative impacts and, you know, if a place is already polluted up to the standards, the cumulative impact assessment would suggest that you shouldn't add anymore into that polluted air shed.

Now, I think there are various hazards that weren't properly managed in that air quality assessment. Such that the biomass is stockpiled in an outdoor area, so it's exposed to the rain, it's likely to be wet when it's burnt. We all know what happens when you burn wet firewood.

The plant does have fabric filters that can catch particles, but the fabric filters have to be maintained well, that's expensive to do, and we know from experience with Vales Point Power Station, that often it would run with holes in its filters for days or weeks without anyone noticing. So, you know, the fact that the filters are there, when they're working perfectly, they do work. But they're not always run perfectly.

Now, the second grounds of objection is about restricted materials. In the proposal, it's suggested that one truck per day out of 70 would be inspected for restricted materials. The other 69 trucks would sail through unchecked. Now, there's a high risk of construction or demolition waste containing copper chrome arsenate treated timber – that's highly toxic if you burn it, and that would create a problem across the region.

PROF MENZIES: I need to pull you up at that point, unless there's one succinct comment you wanted to make to finish.

MR EWALD: Well, one other point is that because this is a steam, water boiling steam generating power station, it has very little, limited capacity to ramp up and down. So, it's not generating the kind of electricity that's needed to fill in the gaps in a solar and wind grid, because it can't dial down when the electricity's not needed. And so, it will be displacing proper clean energy from the grid because it can't turn itself off when those things are abundant. So, it's not the kind of generation that the grid needs, going forwards. Thank you.

PROF MENZIES: Thank you. You made a particularly important point, in my view, there with the constraining what materials the power station would burn, that if we were taking wood waste, there might be copper chrome arsonate treated timber or all kinds of other risks. And so, I think that we're very sensitive to that.

MR EWALD: Keeping prohibited out of the stream would be a challenge, and I don't see how the Commission can impose conditions that would negate that risk.

PROF MENZIES: Thank you. Our next speaker is Rod Roberts, who's the Local Member, who is on the phone. My paperwork says in person, but my screen says on the phone. So, Rod, if you are with us, your moment is now.

MR ROD ROBERTS: Thank you, Commissioner, and thanks for the opportunity to present to you today. My name is Rod Roberts, I'm in fact not the Local Member, I'm

the Deputy President and Chair of Committees for the New South Wales Legislative Council. I sit in the Legislative Council as an Independent Member.

I just wanted to voice my approval for this project. Three reasons I want to touch upon very quickly and then I'll go to the Department's report, which is the basis of your hearing today.

I think the Redbank Power Station will be able to provide us with a reliable source of energy. We know that energy security in New South Wales is an issue at the moment, as we transition away from fossil fuels. We're aware that Eraring will be closing in 2027 and there is a need for baseload power dispatchable 24/7 to assist renewables in the energy market.

Secondly, this is a carbon neutral solution. It's worth noting the biomass holds a unique position in the renewables landscape because it's the only method capable of producing electricity 24/7 while simultaneously achieving negative CO_2 emissions through carbon capture and storage. And in the case of the Redbank Power Station, its purpose-grown energy crops will effectively serve as a long-term and renewable carbon sink that has the potential to absorb more emissions than what is generated.

And thirdly, and finally, there is angst and concern right across rural and regional New South Wales that are having imposed upon them renewable energy projects and of course the transmission lines to provide that energy to the grid. This smart reuse of existing infrastructure will have minimal impact on the community and will be available in a short period of time to dispatch much-needed baseload power.

Now, I'm going to go to the DPHI's report which is the basis of what you're hearing today. And obviously to start at the very beginning is the best place to start, and that is in the executive summary. And we note that the Department engaged with a number of government agencies, including the EPA, on key issues. And each of these departments have recommended implementation of appropriate mitigation and management measures to ensure that this is a safe project.

The project involves the use of existing infrastructure in an area that's already zoned for this. The Department's undertaken a comprehensive assessment of potential impacts and have recommended a range of detailed conditions. Compliance with this framework would be enforced by the EPA during the operation of the project. And the Department considers greenhouse gas emissions would represent a small 0.07% by 2050 of a contribution to total emissions in New South Wales. And that could be offset in line with the emissions reduction trajectory for New South Wales and therefore consistent with New South Wales policy.

And overall, the Department's assessment concludes that the project would result in benefits to the State of New South Wales, and considers the project is in the public interest. And as such, the Department concludes that the project is approvable subject to conditions. And I note the word "conditions" there; they are strict operating conditions that Redbank must comply with to be able to maintain their EPL.

Quickly going through the report, obviously New South Wales is committed to net zero emissions that Australia has adopted as part of the Paris Agreement. To reach that by 2050, we have to do a number of things to be able to do that. The Australian Energy Market Operator's 2024 Integrated System Plan identifies the importance of investment in firming technology and dispatchable sources of energy to support renewable energy. And of course, biomass is defined in that particular report as a renewable energy that is dispatchable.

The New South Wales Energy Strategy looks for investment from private sources, of which Verdant is one. And also the Electricity Infrastructure Roadmap identifies renewable energy zones, including the Hunter-Central Coast in which the Redbank project sits.

Energy from Waste is a policy statement been issued in 2021 by the New South Wales Government, and Energy from Waste states that thermal treatment of waste provides an opportunity to recover energy from waste, and any project must meet current international best practice techniques, which obviously this project does.

Further to that, in terms of providing the report, the Department worked closely with the EPA, the Department of Climate Change, Energy, Environment and Water, NSW Health through the Hunter Local District, Transport NSW, and the Singleton Council. So, there's a number of bodies involved, and of course of note in the public submissions, the majority of submitters in the Hunter Valley supported the project.

Now, I note my time might be getting close to expiry, Mr Chairman. Is that close?

PROF MENZIES: You've had the double bell, Rod, so really your time is up.

MR ROBERTS: Oh, I didn't hear the double bell. Sir, if I can conclude in one statement then, one sentence?

PROF MENZIES: Absolutely.

MR ROBERTS: Overall, the Department's assessment concludes that the project would result in benefits to the State of New South Wales and considers the project is in the public interest, and as such the Department proposes that the project is approvable subject to conditions.

PROF MENZIES: Thank you, Rod. You came through very clearly, so we got your message well. Commissioners, do we have questions? No? Okay. Thank you very much, Rod.

MR ROBERTS: Thank you for your time.

PROF MENZIES: Our next speaker is Martin Fallding. Martin, welcome.

MR MARTIN FALLDING: Good morning. Thank you for the opportunity to speak. My name is Martin Fallding. I live in Singleton. I'm a professional environmental

planner and I have a lot of experience over decades in assessing development applications.

I will be making a written submission and here I'll talk about the key points in that submission. Redbank started operating as a coal waste management facility. Its 14 years of operation saw three changes in fuel supply. Now, 11 years after its closure, the proposal is to restart operations have identified five more fuel sources. The ever-changing nature of this project brings uncertainty and high risk. What will be the next? Will it be domestic waste?

Legislation requires environmental impacts that are relevant to be assessed. However, the Assessment Report by the Department fails to adequately consider key impacts, including greenhouse gas emissions and climate change impacts, the consequences of heavy vehicle transport moving biomass, the disposal of ash waste, biosecurity risks, and the biodiversity risks off site. Only one of those was addressed in the Applicant's comments earlier.

The deficiencies in the DPHI Assessment Report are outlined in my written submission, and there are many. These raise doubts as to whether the project can and should be approved. I particularly draw your attention to proposed condition B12 of the Department's recommended conditions of approval. First and foremost must be the question of whether this proposal is in the public interest. It does not promote the social and economic welfare of the community, being an inefficient way to generate electricity. It does not represent or contribute to a transition to a zero carbon economy. In fact, it will increase carbon emissions.

It does not promote a better environment or represent proper management, development and conservation of the state's resources. It does not facilitate ecologically sustainable development. Appendix D in the Assessment Report that deals with this is embarrassingly inadequate. It is not in the public interest or legally correct to defer consideration of key impacts to other regulatory agencies such as the EPA. This is particularly the case for atmospheric emissions, disposal of ash, and the use of water.

Similarly, conditions of consent and subsequent management plans do not represent assessment of impacts. I refer you to conditions B8 and B1 in the Assessment Report conditions.

Finally, approving a development full of uncertainty and risk, that sends fleets of diesel trucks around the countryside to scrounge biomass to burn is against the public interest. I would argue the public interest is best served by sequestering carbon in soils and native vegetation, not burning it in furnaces and transport.

Secondly, the public interest would be served by removing and recycling Redbank and rehabilitating the site. And finally, the public interest is sending a clear message from the community that repurposing a legacy development to create more environmental impacts is against community expectations and its best interests.

Thank you.

PROF MENZIES: Martin, we have worked through the submission that you made to the Department, and thank you for that, and you note that you're going to make a submission to the Commission. I'd certainly encourage you to detail your concerns about the various conditions that you noted there, and if you have suggestions for improving them, that would also be welcome by us. And please note that this doesn't imply that we're going to approve, you know, we're just making sure that we've got all of our considerations open.

The disposal of ash I find an interesting question. The Proponent says that it's wood ash, you can use it as an agricultural soil ameliorant. Do you have views on that?

MR FALLDING: Well, since we don't know what the material is that's going to be burnt, that's problematic in itself. I think also it's the concentrations, how you actually spread wood ash over a large area is a really difficult thing.

I think the comment made that this could be all beneficial for land rehabilitation, well coal mines are required to carry out their own rehabilitation already; they don't need supplementary assistance to do that, when that's completely uncertain, risky and we hardly know how and when that will be done.

I think this is a big experiment. And if it's treated as an experiment, that's realistic, but this is such a large extended land, there is also long-term implications of ash if there are toxic materials that are within it, and residues. There's simply no way of actually removing them from the waste stream. And obviously, a lot of those would be soluble, go downstream, and there are water quality impacts for other users downstream. So, I think water is a significant issue in this, given that we can expect worse droughts going forward.

PROF MENZIES: Fellow Commissioners, other questions? Okay. Thank you, Martin. Our next speaker is Boris Novak from the New Hunter – sorry, Hunter New Energy Cluster. Sorry.

MR BORIS NOVAK: Good on you. Hopefully you can all see me. Good morning, Commissioners. I am Boris Novak. I am the Co-Lead of New.E The Hunter New Energy Cluster. We're an industry cluster throughout the region and we support the development of clean energy and hydrogen technologies in our region. Today, I am here to express strong support for the Redbank Power Station restart.

Clean energy transformation. Redbank's conversion from coal to biomass is a model for repurposing legacy infrastructure. It's fast to deploy, uses existing grid connections, and provides 24/7 renewable power, which is critical as coal stations retire.

Climate benefits. Biomass operates on a closed carbon loop, unlike coal which adds ancient carbon to the atmosphere. Redbank will cut net dioxide emissions by up to

96%, eliminating around a million tonnes annually. The coal licence will be surrendered, and this shift – this is a permanent shift to renewables.

Sustainable biomass sourcing. No native forest logging. Biomass will come from invasive species, crop stubble, and forestry offcuts; materials already marked for clearing. This helps regenerate native bushland and, with strict EPA oversight, it ensures only sustainable sources are used.

Air quality and health. Modern emission controls will keep pollution within EPA limits. Redbank's biomass combustion is far cleaner than coal. And the plant will be fully regulated with continuous monitoring. And we do support the strong oversight.

Regional jobs and economic growth. Redbank will create 330 construction jobs and 60 ongoing roles; many suited to former coal workers. It'll stimulate $900 million in economic activity over 25 years, supporting local businesses and farmers.

So, in conclusion, New.E firmly believes Redbank's biomass conversion is in the public interest. We think it strikes the needed balance of environmental sustainability, energy reliability, and economic opportunity. The Department of Planning agrees with their exhaustive assessment, which concluded that the project is approvable and beneficial to New South Wales.

With the appropriate conditions, this project will be a flagship example of how we can transition to cleaner energy in a practical, responsible way. It uses renewable fuel, recycles waste, creates jobs, and helps stabilise the grid as we add more solar and wind.

We're genuinely excited about the message that this sends. The Hunter is innovating and leading in the new energy era. And we think that approving Redbank will show that New South Wales embraces creative solutions to decarbonise whilst actually caring for our workforce and environment.

Thanks for your time. And I do urge the Commission to approve the Redbank Power Station restart. It really is a timely and important opportunity that we can't afford to miss for our region's future. Thanks.

PROF MENZIES: I have once again not a question about what you've just talked about but given your industry orientation. One of the things that we're asked to think about is cumulative impact, and I'm thinking here of the level of activity that's happening in the Hunter with development of a whole set of new energy infrastructure. A lot of extra traffic on the Golden Highway. And this particular proposal puts a lot of additional trucks.

So, are you concerned of the cumulative impact that all of these activities are having?

MR NOVAK: I think any new activity represents risk in whatever we do undertake it. Being aware of that initially helps us actually manage it going … So, I just see it as an issue that we just have to address at some point.

We ran a forum just two weeks ago in Newcastle around the Newcastle Logistics Precinct, which is really more like a staging post at the port, designed to actually look at how to manage the material flow to support the new energy rollout across the region up in the Upper Hunter. And also with Transport for NSW and EnergyCo at that, conducting presentations around how to coordinate all that. This is hard. We admit that. But it's also essential. It's not something we can walk away from and just sort of ignore it for just – in a, I guess, for hope that something else will come along. Thanks.

PROF MENZIES: Thanks, Boris. Okay. Our next speaker is Peter Morrissey from HunterNet Cooperative. Welcome, Peter.

MR PETER MORRISSEY: Thank you. Thank you. Good morning, Commissioners. My name is Peter Morrissey. I am an industry adviser with HunterNet Cooperative, and I'm also speaking from my career background in energy across a variety of disciplines and experience from over the last 50 years.

The HunterNet Cooperative is an industry association that has been operating in the Hunter region for over 30 years. A network of businesses that extend further than the Hunter region but have been directly involved in these existing industries across the region and some of them that have closed.

We are directly involved in the renewables circle economy direction of our state, and I wish to convey my strong support for the restart of Redbank Power Station and the mission of Verdant Earth Technologies.

So, I started in the Electricity Commission and worked across many old and new power stations as well as different energy sources such as coal, steam, hydro and diesel. So, I know the complexity of the assets that form a modern power station like Redbank.

And that the restart of this power station using a circle economy, agricultural, biomass feedstock, supports our New South Wales Government aim for new energy sources to be developed across the state, as we diversify away from coal-fired fossil fuel power stations in the grid. It's to utilise the valuable assets that are sitting idle, should always be our focus.

In the circular economy, to form the restart of Redbank using biomass is a higher recovery of waste materials and efficient energy use. To bring this whole picture into focus, this power station alone and its restart is only a small part of an overall industry that this could become part of in this state.

I also first learned of the term a few years ago, an "invasive weed species". The energy value in this carbon source that currently is wasted using existing processes to combat invasive weeds, we're wasting these valuable resources which form part of this biomass feedstock. So, to build an ecosystem where what was considered a waste is now a valuable fuel and energy reserve, its production is part of the value that is being built on the platform of that circular economy.

When the full cycle of this plant's operation will bring, we have a diverse range of skills, jobs and industries that will be developed from the area of agriculture. Where biomass capture will form part of plantation forest waste, wood waste, and importantly these invasive weeds. To be recovered and reused instead of leaving on the ground or losing valuable agricultural land with soil degradation this brings.

The ash left after combustion may be utilised as a soil enhancement, further completing the cycle – unlike coal-fired power stations where our ash is currently in legacy dams.

So, Redbank is a unique source to bring another energy source and system to our grid. But it's not a new energy source in the mix. We use carbon in a variety of energy ways already. Not far from this location today, carbon is being converted to energy at Baywater Power Station. Whilst coal power stations use carbon that is conservatively millions of years old, Redbank is proposing to use another carbon source that would be of considerable less age.

Converting carbon to energy is not new, but it may appear new in New South Wales. Back in Europe, a report in 2022, 13% of their gross energy across Europe comes from biomass and bioenergy. And that is 55% of the overall renewable grid in Europe. Currently, this biomass comes from wood and forest residues. They state, "Most future growth will be from increased agricultural mass and residues."

Even in New South Wales, we have our own NSW BioSMART Tool to work out a biomass calculator. And the quote, "By planting native woody crops on marginal land, New South Wales landholders have the opportunity to contribute to climate mitigation outcomes. This tool will help underpin the establishment of sustainable biomass supply as demand for biomass increases."

According to the World Bioeconomy Forum, the current value is $4 trillion, and with projections, a rise to over $30 trillion in the 2030s. We in New South Wales need to be part of this bioeconomy.

So, we can choose the higher path in our renewables direction. I urge the Independent Planning Commission to approve this development. The benefits to provide diversity, skills, jobs growth, new direct industry in regional location, that has the stigma of uncertainty due to power station and mine closures, will be a valuable positive decision in the Hunter Valley communities, that change can be good. It can be a win-win for diversity, agriculture, energy production, and to support a company like Verdant Earth Technologies, that it's a passion and mission to make positive change.

Thanks for the opportunity to address you.

PROF MENZIES: Thank you very much, and absolutely magic timing. Our next speaker was going to be [Stuart McClellan 01:14:18] but Stuart can't join us, so Tony Ventura is going to speak on his behalf.

MR TONY VENTURA: Good morning, good morning all. Yes, I don't have anything written down because this has just sort of been thrown in front of me. And I'll just say how it is. Everything's great, planned on paper, it all looks beautiful, but let's see when the reality happens. So, if it does go ahead, let's see what happens.

But how about doing a health check on every – and every one doing a check on people's health in the Hunter, it's not real good as it is already. And if it worsens, because there's a lot of thyroid problems and other things and cancers going around. And I suppose they did a check around and they discovered that.

But the trucks on the road, how are they going to harvest it, it all contributes to this carbon problem. And I just can't see how it's feasible. If you look at, they say coal-fired power stations compared to wood-fired power stations, the wood ones are more carcinogenic, you only have to look at that on the net and you'll find that out yourself.

So, in times of drought and that, yes, actual water to water their biomass to keep it going. And if the river's low, how are they going to do that? And it is hard to get an irrigation licence these days, so where are they getting the water allocation from in the end? And that's how I see it.

So, that's my concern, for the health of the people. And this always has been. And that's all I really have to say, I suppose. I'll probably think of something later, but that's all I've got.

PROF MENZIES: Thanks for stepping in at the last minute, Tony, that's great. Lynn Benn from Knitting Nannas Hunter Loop is our next speaker. Welcome, Lynn.

MS LYNN BENN: Good morning. I'm Lynn Benn from the Knitting Nannas Hunter Loop. We're a group of older women from around the Hunter and we've been concerned for over 10 years now and actively concerned about the degradation of our environment and what we will leave for future generations.

We have a lot of concerns about this project. Firstly, the health grounds. The Hunter Valley has historically suffered an appalling health record compared to the national average, due to its poor air quality from the mines and power stations. We were hoping that with the transition to cleaner technologies, we could finally hope for an improvement.

There is a cavalier statement in the report that I can paraphrase that says that "existing pollution levels are so bad that the additions from this power plant will not need to be taken into account." This is a gut punch really to those living in the area and an end to these hopes.

The feedstock. As people have mentioned, it's highly problematic. Growing energy crops is likely to directly compete with feed crops. If you're talking about moving it to marginal land, it will need a lot of fertiliser and it's really not clear how that will work.

The proposal to grow coppice trees on degraded mine land is also problematic. I mean, that's hardly rehabilitation; that's not what I see as rehabilitation of mine land. And if, as we've heard this morning, that this has a 30-year lifespan, that's, you know, how many cycles of four years that is, at the end of that, what state will that land be in? It'll be totally degraded, even worse than the existing degradation from the mines.

Agricultural waste was mentioned. This agricultural waste is increasingly being valued by farmers as a product they can incorporate into their practice to improve soil condition, drainage, fertility and carbon content. There is a lot of research on this and a lot of active work, and the proposal to create a market to remove it off site to be burnt seems to be a severely retrograde step.

Finally, sourcing fuel from the so-called invasive native species clearing is the worst problem we have. We've been reassured that there will be no habitat loss due to this clearing. But our experience with the current regulation is that the regulations are weak and they're extremely poorly enforced, and that we actually have a clearing rate in New South Wales worse than Indonesia.

The last thing we want to add into that is to create a market to incentivise farmers to further clear valuable habitat that many of our native species … So, taken as a whole, the whole feedstock plan reads as a very flimsy veil to hide the large-scale felling and burning of trees which will be necessary to feed the appetite of this power plant if it goes ahead.

And as for conditions, we were assured that there would be no native forest products burnt, but that's not actually in the conditions as far as I can see. So, to have any credence, that actually needs to be specifically mentioned.

And I'd finally like to say that – oh no, not finally, two things. The value of this burnt biomass, we've been assured that there's no higher order use. I would challenge that; I think it's got a lot of higher order uses for the material they propose to burn. But a standing tree not only provides a carbon sink but a whole host of other benefits, including shade, water retention, erosion prevention, improved air quality, drought prevention, and habitat. The highest order use of all for this material is to leave it as standing trees.

And I'd finally like to mention that this is totally the wrong technology. There's been talk bandied about dispatchable energy and also 24/7 baseload. They are not the same thing. And what we need in a modern grid is dispatchable energy, i.e. something that we can turn on and off. Firing up a 24/7 coal, sorry, incinerator, a wood incinerator, will actually take away from the incentive for other alternative renewable sources, and what we needs is dispatchable power and not something that will run 24/7.

I'd just finally like to say that we were actually delighted to hear about the Hunter-Central – nearly finished – [Ghost? 01:21:49] Renewable Energy Zone with all it promised, and we did not foresee it being used as justification for restarting an old last-century power station as a wood incinerator. Thank you.

PROF MENZIES: Thank you, Lynn. Our next speaker is Wendy Wales from the Denman Aberdeen Muswellbrook Scone Healthy Environment Group, who is joining – oh, in person. Mine has on the telephone, but welcome, Wendy.

MS WENDY WALES: Thank you for the opportunity to speak here this morning. I'm speaking as Wendy Wales, and I'm wanting to express my concerns about the Redbank restart. I share the concerns with the many other environmental groups here, that this project will inevitably fast track vegetation clearing.

Removing woody weeds at scale will have a massive destructive impact on wildlife and native vegetation. However, the location of the fuel source has not been specified by the Proponent, which means the IPC is not in a position to properly assess the environmental impacts on the location.

Also, attempting to grow plants such as bana grass in the quantities required to burn and generate electricity in proximity to Redbank seems pretty unrealistic and raises alarm bells. The unrealistic chances of growing fuel on marginal agricultural land makes one wonder about what this project is really about.

But my main concern is with air quality. As a local and foundation member of the Upper Hunter Air Quality Monitoring Network, now merged into the Hunter Environment Advisory Group, I know the people of the Hunter Valley are most concerned about and already endure frequent health alerts due to poor air quality. This is notably worse in hot, dry times. And biomass is a less energy dense fuel source than coal, so will obviously cause more air pollution. Also, the diesel trucks are a significant contributor to air pollution. Notably, the carcinogenic PM1's, they're very fine particles.

I note the recommended conditions of consent allow, in addition to 40 cumulative days of diesel generated electricity, a provision to exceed this limit if the Australian Energy Market Operator directs it to. And AEMO can extend that direction and Verdant can also use diesel if it takes all practical measures to prevent and minimise air pollution.

The recent testing of the Hunter Power Project at Kurri Plant, part of the Snowy Hydro using diesel, resulted in so many complaints locally that the Federal Member called for it to be shut down immediately. This project seems open to the slippery slope offered by greenwashing using permissible green waste to generate green power, attracting subsidies and tax benefits, but being able to use diesel in any event at times of crisis, and by implication, very high prices.

Burning diesel is burning fossil fuel and is not green energy. Burning wood releases stored carbon while less carbon is part of the carbon cycle, burning so much at once can be expected to have negative social and environmental impacts beyond the Redbank generating site.

I trust the Panel can see we need to fast track renewables and battery storage and find better, more Earth friendly uses for woody weeds and marginal agricultural land. Thank you.

PROF MENZIES: Questions? We're good. Thank you, Wendy. And our final speaker before we take a break is Gregory Hall from the Rainforest Information Centre.

MR GREGORY HALL: Thank you. Commissioners, this latest attempt to salvage the ill-fated Redbank experiment could have signalled the need to examine the proposal very closely. However, the Assessment Report fails to properly respond to the concerns raised by the many submissions and largely accepts the assertions of the Proponent's reports without critical analysis.

The fuel plant is a fantasy designed to cover this trojan horse proposal, recycling and concealing the earlier failed attempt to burn forest wood. The volumes claimed to be available from distant invasive native scrub are most unlikely to be economically deliverable.

The proposal to plant tens of thousands of hectares of the environmental weed, bana grass, producing 50,000 tonnes in the first year, is plainly ridiculous. The environment impact of this is not examined.

The Submissions Report states that the Proponent, quote, "will not and has not requested government approval to use these residues for power generation at Redbank." Whereas the recommended conditions of consent at section B4, under Biomass Fuel Management, allows, quotes, "eligible fuel wastes or standard fuels."

The guidelines and regulation for these fuels specifically allow forestry and saw milling residues. Remarkable that permission to use these residues should be included though not requested. Has anybody in the Department actually read these things for internal consistency or with New South Wales Government policy?

The amount of wood fuel to produce a given amount of energy also rises dramatically with natural moisture content, as any home wood burner knows well. Seventy-five per cent increase in fuel requirement is hidden away in the modelling. Should any processing to reduce these moisture levels be found, this will require the burning of yet more diesel fuel not accounted for in the proposal.

The summary dismissal of the modelled increase in carbon dioxide emissions both fails to account for any of the above and is directly contradictory to New South Wales Greenhouse Gas Emissions Planning.

The greenhouse gas section of this report continues the fiction that the emissions at the point of combustion should not be counted, rather they be balanced against the expectation of the invasive native scrub will regrow properly. This is not the expectation of the graziers from whose land this fuel is to be removed. They do it as only one part of a larger plan, hopeful to return their mismanaged land to profitable grazing.

The air quality assessment by the Proponent tells us that air toxics were established using fuel specification reports provided. As that specification is not tabled, we may

assume that this theoretical modelling does not include the inevitable soil and other foreign matter that will accompany the projected land clearing by bulldozer and chain to the power station.

As the hypothetical processing plants for this contaminated scrub do not yet exist, and planning for them is nowhere detailed, it is difficult to accept predictions for the consequences of their combustion, nor the extra amounts of diesel fuel that will be required in the process.

The Traffic Report trivialises the impact down to a turning lane at the entrance at the Redbank site. No assessment of the thousands of tonnes of microplastics shared into lungs, soils and waterways from the tyres of the thundering 24-hours-a-day, 12 million kilometres a year B-double trucks. Nor of the damage to the roads, necessitating more frequent repairs and re-sheeting, both highly energy intensive and expensive for the rural communities through which this torrent would pass.

Each of the many appendix reports that I have examined bear similar superficial examination and inconsistency. I'll be including comments on those in my written report, but time does not allow it today. Thank you for the opportunity.

MS O'MARA: Can I ask one question about your point around the 75% fuel requirement hidden in the modelling. Oh, can you hear me? Sorry. You made a point about the 75% fuel requirement in the modelling. Yes, you made a point around the 75% fuel requirement.

MR HALL: Yes.

MS O'MARA: And that there might be more diesel.

MR HALL: In the Boiler and Process Modelling Report, which I omitted for time here, but there's a table there in which they make clear that they had modelled the combustion of three samples from one bushfire-damaged log and had not actually run it through any burning but through some sort of mathematical trickery. And that results in that complex table you see in the BBM Report. It would require a 75% increase on the amount of this wood fuel to produce the similar 151 megawatts, when the moisture content is 25–45%.

And so, it really does bear looking at. The very shallow basis on which those projections have been made, and reading into the consequences, but nowhere in the response is it clear that the Department has actually analysed that Combustion Report. They simply seem to have taken the Proponent's summary at face value. Thank you.

MS O'MARA: Thank you.

MR HALL: Okay. We'll take a short break so everyone can stretch their legs and get a cup of coffee etc.

[Morning break/music plays from 01:33:17 to 02:06:41]

PROF MENZIES: Okay, ladies and gentlemen, we're restarting, we're back online. So, our first speaker is Dan Repacholi, who is joining us by telephone. Dan, are you there?

MR DAN REPACHOLI: Good morning, all. Yes, I've got you there. How are you?

PROF MENZIES: Very good, thanks.

MR REPACHOLI: That's the way.

PROF MENZIES: So, fire away, Dan. You have our undivided attention.

MR REPACHOLI: No worries at all, thank you. So, Verdant have reached out to me many times as my role as the Federal Member for Hunter, and we've spoken about this facility. I've toured the facility. It's a $700 million facility that's sitting there doing absolutely nothing right now and can be repurposed and really used into making sure that we can have a facility that is a generator there that can produce power from purpose-grown fuel that will take CO_2 out the atmosphere.

And not only that, it'll also create a whole heap of jobs in the area, and we know our area in the Hunter is changing, there's no doubt about that, so we need to make sure that we have good job security and also be able to make sure that we are looking after the environment as well along the way, which we are definitely doing. And I see that this does support the energy transition along the way.

And I think it would be good to see the thousand indirect and direct jobs that would be created from this facility and making sure that we are continually powering not only the Hunter but also the country along the way. This will power around 220,000 homes which is a lot of homes, and yes, we're looking forward to seeing what can actually be done in this area.

PROF MENZIES: Thank you for a very succinct statement, Dan.

MR REPACHOLI: No worries at all, guys.

PROF MENZIES: Okay. Our next speaker is Bob Doyle, who is also joining us by telephone. Bob, over to you. Maybe. Bob, are you with us?

MR BOB DOYLE: Oh sorry, yes, I am.

PROF MENZIES: Okay, Bob, you have our attention.

MR DOYLE: Okay. So, just get into it?

PROF MENZIES: Yes.

MR DOYLE: Right-o, thank you. So, I'm a farmer over at Vacy on the Paterson River. And I see harvesting trees for bioenergy as an opportunity to contribute to sustaining net carbon sequestration on the farm.

Next slide. Our farm. We're beef producers, sheep, grow industrial hemp. We've grown hemp on our farm that's in 150 houses around Australia. And the target there is to go into carbon neutral housing; we're just starting to get some methodology around that. We're also very much involved in the circular economy. We use very little synthetic fertiliser. We have very little low use of pesticides. And, actually, next month we've got out eighth field day with the LLS on regenerative ag farming practices since 2023.

Native habitat is a really critical part of our farm management. It is significant for all the outcomes of the whole farm, for our agricultural productivity. It contributes to improved pasture production, increased soil carbon, and the net carbon position of our farm. So, we use trees not just as a habitat, we also need trees to be self-sufficient in timber. It does provide biodiversity improvement, but we also use it for shade and shelter for our livestock, for our pastures and for our soil.

In our valley, there are a lot more trees than when I was a kid. And so, there has been a significant improvement in native habitat, and you see that particularly with fauna than when I was a kid. But one of the problems we're heading to now is there is a significant increase in the risk to that habitat, not just because of climate change, but a lack of fire management. In fact, I believe the single biggest risk to our native habitat is poor fire management of our bush, our forests, our national parks, and crown land. So, that's outside the realm for what I'm talking about. Because of where this is all finished up, I see this bioenergy project as creating us an opportunity on our farm.

I see climate change being used as an excuse. We have a landscape that in the agricultural land continues to dehydrate because of poor management. We use climate change as an excuse for hotter, more destructive bushfires, for droughts getting worse, floods getting worse. The actual problem is poor land management at all levels. I'm not saying climate change doesn't contribute, not as much as poor land management.

So, in the time that I've been farming, which is 40 years, there's been a significant increase in minimum and maximum temperatures. But in that same time, our soil carbon has increased. We have more of the farm that has no livestock access. We use less irrigation water. We use less fertiliser and pesticide. We have more land locked up specifically for native habitat. And yet our total farm productivity in the time I've been on the farm, which it goes back to 1980, has actually doubled.

So, we've adapted to these increasing temperatures. And for me, the 2019 drought was not as harsh as my first one in 1980. But I genuinely believe we have a responsibility to reduce our greenhouse gas emissions. And for me, that starts at a personal level, it starts on our farm. So, it's really important that the regrowth of the bush is managed. Indigenous cool burning, I think, is the best thing ever. It should be used around the world. It just does not get used.

Thinning, unless thinning occurs, soil health will decline over time. And so, there is an opportunity to harvest that energy that's in regrowth as opposed to just burning in the paddock.

PROF MENZIES: Bob, you probably can't hear the bells, but we've just reached full time. Was there one last point you needed to make?

MR DOYLE: I see that supplying Redbank has the potential for us to be a sustainable farm enterprise that will help protect our native habitat and it will contribute to reducing our total greenhouse gas emissions.

PROF MENZIES: Thank you very much, Bob.

MR DOYLE: Thank you.

PROF MENZIES: Our next speaker is Ian Donovan from National Parks Association of New South Wales, and Ian is here in person.

MR IAN DONOVAN: Thank you. My name is Ian Donovan and I'm here today representing the National Parks Association of New South Wales, or NPA as it's often known as. I hold the role of Secretary and I'm also Secretary of the Hunter Branch of the Association.

As an organisation, we've been working towards the protection and appreciation of nature for just under 70 years. It was NPA that badgered the New South Wales Government state's basic nature conservation infrastructure, including the New South Wales National Parks and Wildlife Service, and a protected area network that now spans more than 10% of New South Wales.

NPA strongly objects to the Redbank proposal. If approved, it would have substantial off-site impacts on biodiversity conservation, biosecurity, carbon emissions, and certain other matters that NPA's not directly concerned with. Both the Proponent and the Planning Secretary have failed to assess the extent and nature of these off-site impacts.

The application documents do not look beyond the development site itself. They relegate the consideration of direct consequences, such as land clearing, carbon budgets and increased risk of spreading weeds and pathogens, to other decision processes and decision makers. Yet the proposal has a direct causative nexus with each of these matters.

There is substantial uncertainty about the extent and nature of the off-site impacts and risks. The proposal rests on a one-page back of the envelope plan for sourcing various fuel stocks. This is shown in table 2 of the Secretary's Assessment Report.

It remains entirely unclear where most of the fuel stock will come from. This applies both during the initial phase when there will be a strong reliance on so-called, quote, "invasive native species", and during the mature phase when it is claimed that most of

the fuel will be obtained from purpose-grown fuel crops. However, we simply just don't know where, what or how this is all going to happen. Although there is the term "native invasive species" suggests a source region in the western division well over 400 kilometres away.

We're particularly concerned that the proposal will accelerate habitat loss. The proposal effectively creates an economic incentive to clear native vegetation that in all likelihood would not otherwise be cleared or would be allowed to regenerate. For example, Upper Hunter mine buffer and rehabilitation areas or native woodlands in western New South Wales.

The best use of these habitats will be to maximise their role for carbon storage and biodiversity conservation. Not to feed them into a furnace. I'd particularly like to draw the Commissioners' attention to the New South Wales 2024 State of the Environment Report, which was released by the EPA just over a month ago. It includes a native vegetation scorecard. Across five native vegetation indicators, current status was rated as "poor", while the overall trend was rated as "getting worse".

In simple terms, loss of native vegetation and degradation of its diversity and ecological integrity is up there with carbon pollution and climate change as the state's most pressing and urgent environmental problems. The Redbank proposal will only make things worse.

The Planning Secretary's report makes the bizarre statement that the project would not result in any additional disturbance to biodiversity values outside of the approved operations. On that basis, no further assessment is required. It also notes that land clearing of native invasive species is permitted under the Land Management Native Vegetation Code and regulated under the Local Land Services Act. Well, that's certainly true, but that in no way lessens the statutory obligations of a consent authority to consider the impacts of a proposal under the EP&A Act.

There's a direct nexus between operating Redbank and clearing native vegetation. In the same way, the New South Wales Court of Appeal recognised there is a direct nexus between mining coal at Muswellbrook, emissions from Japanese power stations, and climate change impacts in the Hunter region.

As the consent authority, the Commission remains solely responsible for evaluating the proposal under Section 415 of the Act. Having regard to what's seen to be significant emissions from the Planning Secretary's report, we suggest that it isn't possible for the Commission to consider all the matters that it is required to consider under the Act.

In conclusion, I'd just like to say that we urge the Commission to refuse the proposal There is substantial change in circumstances since the 1990s and that the current proposal is completely out of step with current community expectations. Thank you.

PROF MENZIES: Ian, we don't have a written submission from you at this point. Will you be making a submission to us?

MR DONOVAN: Yes, a submission will follow with further detail on those points. Thank you.

PROF MENZIES: Our next speaker is Jane Watson. Thank you, Jane.

MS JANE WATSON: How's that, that's pretty good. Thank you. I'm here today to represent Rem, 21 years old, Shilo, 15, Phoebe, 12, Ray, 10, Alonn, 9, Goldie, 8, and Sabine, 6 months. They are my grandchildren. In fact, I'm probably here to try and represent everybody's grandchildren.

My name is Jane Watson, and I have been involved in forest protection for 40 years or so. Most recently, I have been involved with No Electricity from Forests, a group formed to stop or to try and stop the consideration of burning wood as a biomass fuel.

Nearly 18 months ago, I wrote a submission on this idea for Verdant Earth Technologies' EIS, and I titled it, "Tell them they're dreaming." Because basically, this is a really stupid idea of how to make electricity and is not renewable, clean or green in any way. It will only benefit the owners of the power plant for a short time and cost the taxpayers of today and tomorrow a lot of money, and give us an irreparable environment for our grandchildren to try and survive in.

Burning biomass to make electricity has been scientifically shown to be not renewable. Something that takes 30 or 40 years to replace is not renewable. I know that everybody can say, "Oh, it's been …"

[Audio glitch/silence 02:22:58 to 02:24:50]

… in the northern hemisphere. It's pretty frightening and, you know, they can say it applies to the northern hemisphere and not Australia, but, you know, really that's a load of bullocks because economy is economy everywhere.

All the truck trips, 56 a day, 7 days a week, all the emissions from keeping the road in some sort of good order. And I know about this because I live on a log truck route. The native invasive species clearing. What does that actually mean? It's not stated. There's no indication of taking into account all the emissions from the logging and the actual transportation.

And in my previous submission, I implored the Planning Department to be mindful of the real scientific evidence and the bleeding obvious examples of the environmental crisis that we are at the start of. Well, I was wrong. We are not at the start; we are headlong into a crisis, and we need to do all that we can to ensure a brighter future for our grandchildren.

Remember our grandchildren. They will have to live in this mega depleted changing climate, affected environment. We have had it so good. And they deserve a chance at good as well. So, I implore you to reject this approval and just be real. Thank you.

PROF MENZIES: Thanks, Jane. Thanks for the recommendation to watch *Burned* as well – I'll do that. Our next presentation is Fabiano Ximenes from New South Wales Department of, I don't know, DPIRD, the Department of Primary Industries and … Help me out here. Regional Development. I'm a Queenslander, guys, so I don't know the New South Wales departments. Fabiano, you're on now.

MR FABIANO XIMENES: Thank you Commissioner and good afternoon, all. My name is Fabiano Ximenes and I'm a senior research scientist and I lead the Forest Carbon and Biomass Group within the New South Wales Department of Primary Industries and Regional Development, as you've heard.

Today, I'll focus on the benefits of short rotation wood crops as a feedstock source. Firstly, I'd just like to briefly talk about how the use of sustainable biomass for bioenergy plays an important role for climate outcomes. As depicted in this diagram shown on this slide, the key principle to understand is that even though the carbon is released when biomass is used to produce bioenergy, if it is part of a sustainable system, that carbon dioxide that's released will be absorbed by new vegetation that is growing on the landscape.

So, this is fundamentally different from the burning of fossil fuels, which releases carbon that was stored over geological timeframes. So, this principle is fully acknowledged by the Intergovernmental Panel on Climate Change (or IPCC), which relies strongly on a significant increase in the generation of bioenergy in all scenarios to limit global warming in the long term.

Next slide please. Now, I'd like to talk about the significant opportunity associated with the use of biomass crops for energy generation. At DPIRD, we have a network of trial sites across New South Wales where we are studying the potential for native woody species for biomass production in marginal less productive land. We are growing over 60,000 trees in these trials, in collaboration with the CSIRO.

The idea is to grow these trees on a very short rotation basis, typically three to five years, providing rapid biomass growth. Some of these species that we have been testing include a range of fast-growing eucalypts, such as sugar gum, river red gums, blue gum. A range of mallee trees, such as blue mallee, [duraco 02:28:47] mallee, and also some acacias.

The idea is that most of the species that we're working with are able to coppice or regrow naturally following harvest, to avoid the need for re-planting. These plantations not only provide landholders with an opportunity for income diversification when times are tough, but also significant carbon sequestration and many other ecosystem benefits, including land rehabilitation, provision of shelter for livestock, prevention of soil erosion, to name a few.

Next slide please. Now, we have been running these trials for a few years now and have a pretty good understanding of what species are a good match for different climatic regions in New South Wales. We also have a lot of data to support

productivity estimates. And just to address an earlier question. We have not used fertilisers in our trials.

So, based on our harvest data, we can conservatively estimate that between 45 to 70 tonnes of biomass can be produced after each growth cycle. This information can then be used to inform the development for planting program, to provide constant amounts of biomass or bioenergy in a similar way to traditional plantation forestry.

So, that means that a certain area of land would need to be planted or coppiced each year to ensure ongoing biomass availability. So, in practice, even though you are regularly harvesting some areas of land, there are always large areas of trees growing in the landscape. One of the advantages of such a system is that it provides ongoing meaningful employment to regional areas of New South Wales.

Next slide please. So, if we apply this concept to the biomass needs for Redbank. We can then calculate what carbon abatement may be achieved with the short rotation plantings established in marginal less productive land. So, the carbon estimate needs to take into account the carbon sequestration of the trees, but also the fossil fuel/greenhouse gas emissions associated with the activities needed to manage those plantations.

As I mentioned before, because you would have large areas of plantations of various ages growing in the landscape at the same time, you will always have meaningful carbon sequestration.

We can also estimate the carbon abatement benefits associated with the bioenergy versus coal or natural gas. Which, as I mentioned before, according to the IPCC, is one of the key pathways for us to limit global warming. So, when we combine all those factors, our initial analysis suggests that an abatement of approximately 10 million tonnes of carbon dioxide equivalent can be achieved in the first seven years of operations.

Next slide please. This is my final slide. So, just to finish it off. Some people argue that the use of biomass for electricity generation is not a true renewable energy and that it displaces solar or wind energy. This misses the main benefit of the use of sustainable biomass for electricity generation. And that is, that unlike intermittent renewables, bioenergy has the ability to provide grid stability and load balancing.

We do not need to rely on natural gas, which is a fossil fuel, to provide that service. Some recent work we have done with colleagues from the University of Sydney clearly show that biomass power plants can be well suited for operating [gaps in the mode 02:31:42] to provide flexible power generation and to facilitate grid stability in load balancing, especially in those times of the year with limited solar and wind generation.

If you're interested in more details, please have a look at our publication on this, which is listed below. Thank you for your attention.

PROF MENZIES: Thank you, Fabiano. We would like to ask you a couple of questions if we could.

MR XIMENES: Sure.

PROF MENZIES: So, my first question, the cycle time, you indicate three to four years, I'm wondering whether the first cycle is that fast? So, the coppice cycles will be faster than planting through to your first harvest. How long is that first from planting to your first harvest?

MR XIMENES: That's a very good question. So, it is entirely dependent on the species selection as well and where you grow those trees, as you probably know. So, if you're talking about the faster growing eucalypts, so you'd be growing those species in higher rainfall areas and therefore you'll be able to harvest them more quickly. Whereas in the drier areas of New South Wales, you'd probably be favouring the mallee species which are more slower growing and therefore you'll sort of be – you're probably going for four-to-five-year cycles rather than three to four.

So, I think it's very site-dependent and species-dependent, but typically, and if you look at experience overseas as well, three to five years is what people normally do.

PROF MENZIES: Okay. And my next question, just relating to fertilisation. If we were to assume that a lot of this would be – that this particular context, we'd be planting trees on rehabilitated mine sites, so fairly degraded land. What would your expectations of what fertiliser you would need to get the system going and keep it running would be? And I know I'm asking you to speculate.

MR XIMENES: Sure. Again, I think the first step would be to obviously do a soil analysis to understand what the deficiencies are, and that would inform what sort of fertiliser will be required, if any. But I think one of the advantages of working with native trees which are [unintelligible 02:34:01] climatic, different climatic regions, is that they are by default already very efficient at using limited resources.

And I think that's where this concept is quite advantageous compared to working with introduced species or species that are not really well-adapted to the local environment, which tend to be more – deplete the nutrients more quickly. So, I think part of it is understanding the species selection and climatic region needs, and then sort of adapting your strategy to that.

But from a mining land perspective, because different mine sites have had different activities happen over time, I think really has to be informed by a proper soil analysis first.

PROF MENZIES: Yes.

MS O'MARA: Can I ask where the test sites – did you say there's four sites where you've done tests?

MR XIMENES: No, we've got more sites, Commissioner. So, we've got about eight sites in New South Wales. Most of them are located in DPIRD's research stations across New South Wales. We do have some other sites, so there's one in collaboration with MACH Energy in Muswellbrook, which has been going now for five years. And also, we've got another site, which is of relevance to the Hunter Valley, at Scone, in collaboration with Soil Conservation Services.

PROF MENZIES: Thank you, Fabiano. Oh no, we still have more questions.

MS O'MARA: Oh, I had another question about water and the amount of water required to grow the different species you've referred to. Are you able to speak to that at all?

MR XIMENES: Yes. From my experience, and I think these research trials have been running and the first round of trials, we put them on in the middle of the worst drought in a hundred years' time, which wasn't great timing. But even then, we only required three or four cycles of watering, and then we really didn't need to do anymore. And it's partly because of, again, the ability of those trees to grow and to sustain themselves with very limited resources available to them, because they are quite adapted to those local environments.

So, our expectation is that under normal conditions, watering needs, especially if you plant/establish the trees in times when obviously, days of rainfall coming and if you can pick and choose the time, the watering needs for those crops would be very, very limited over time.

MS O'MARA: Thank you.

PROF MENZIES: One last question from me, Fabiano. Cost to establishing a hectare of plantation?

MR XIMENES: Yes, that's a difficult one, Neal. Because it's, again, entirely site-specific, and I wouldn't really want to speculate on particular values now, because, you know, there's such a range potential. And also, one of the drivers for that range is the fact that if you're talking about establishing those crops in marginal or less productive land with farmers, the expectation is that a lot of the requirements for the establishment in terms of the soil ripping and the weed management and the fencing, the farmers himself or herself would be able to cover.

So, you know, instead of getting contractors in to do some of that work, the landholder themselves would be able to do it, so therefore bringing the cost down significantly as well. So, I think because of those variables, it's very hard to put a figure on it at this point.

PROF MENZIES: Yes, okay. I accept that dodging of the question, thank you …

MR XIMENES: No problems.

PROF MENZIES: Thank you, Fabiano.

MR XIMENES: Thank you. Bye-bye.

PROF MENZIES: Our next presenter is Louise Stokes, who is here. Welcome, Louise.

MS LOUISE STOKES: Thank you. Good afternoon. My name is Louise Stokes. And along with my husband, Brian Chapman, who is sitting up the back, we are local farmers, and we are not happy about the proposed restart of Redbank.

So, I thought I would take you all on a little road trip this afternoon. And if you'd humour me by looking up at the slides, you're going to drive home with me this afternoon. So, we start here in Singleton, and you can see Singleton on the map. And if you follow to where our son, Jonathon, will be this afternoon, our 16-year-old son, who is fifth generation descendant on the land of the Chapman's, and Ray Chapman, you'll be driving past Chapman & Slattery this afternoon to get home, or to go back to Sydney.

We are – it was raised … Dad grew up on the farm that we now are the guardians, of which I'd also like to acknowledge the guardians, the Wanaruah people of this land that we're on at the moment as well.

Thanks, Stuart. So, we're going to drive, first of all, 12 minutes along the Putty Road and then (thanks, Stuart) we'll look back at the sunset over Singleton, which has hues of pink and blue and pollution. Thanks, Stuart. We'll then turn right from the Putty onto the Golden Highway, where (thank you, next slide) immediately on our left we'll have the rolling hills of Warkworth. Not the black hills of Dakota, but (thank you, Stuart) the black hills of coal stockpiles of Warkworth.

Thanks, Stuart. We'll drive for another 3 minutes along the Golden Highway. And then (thank you, next slide) on our right, we get to gaze upon the wonder that is the Redbank roller coaster. Thank you, Stuart. A little bit further north, 3 minutes north, and we'll arrive at Warkworth.

Thank you, next slide. And we'll arrive at the Warkworth Cricket Club where (thank you, next slide) community cricket was killed by the coal mines. And so, when they write in their submissions and their reports about community consultation and no one consulted, there is no one left in the community to consult with.

Thank you, Stuart. But that's just as well, because now the community cricket oval is home sweet home for families who have been forced out of the rental market. And these families, their parents have jobs, they work as cleaners or retail here in Singleton, but they can't afford the rents here in Singleton. So, they have set up permanent living quarters at the Warkworth Cricket Club where their families, and there are young families, there are children sleeping in cars in Warkworth and Singleton, and breathing in goodness knows what.

Thank you, Stuart. We'll drive just north of Warkworth and (thank you, next slide) we can stop for sundowners near an early settler's hut and admire the sunset. Thank you, Stuart. Another couple of kilometres west and Yancoal and Glencore's Hunter Valley operations will be on our right, and (next slide) with beautiful Bayswater in the background.

Thank you, next slide. What are these children breathing in? What is our son, Jonathon, breathing in right now as we speak? Thank you, next slide. Six minutes further north and (thank you) we'll be at Jerrys Plains Public School, and it will just be one block to our left and (thank you, next slide) but hopefully the students didn't play outside last week. If you look at the blasting schedule (thank you, next slide) and hopefully they didn't breathe at all for a whole week in May. And that was term 2, week 5, I'm a teacher, that was a whole week they shouldn't have stepped outside to play at all. That is the Jerry Plains monitor.

Thank you, Stuart. And –

PROF MENZIES: Louise …

MS STOKES: I know, you finish, but I live here, and every other speaker, thank you, does not nearly – I'm one of the few locals that are speaking today.

PROF MENZIES: So, I wonder if you could succinctly bring your …

MS STOKES: Three slides left.

PROF MENZIES: … to your point. Okay.

MS STOKES: I've got three slides left. So, maybe Warkworth and Jerrys Plains children shouldn't breathe at all between 9 a.m. and 5 p.m. because that's when the blasting takes place. And the monitors tell you afterwards when the air has been dangerous to breathe, not while it's dangerous to breathe, afterwards.

Next slide thanks, Stuart. So, we'll arrive 9 minutes later at home (thank you, Stuart) where Appletree Creek floods have destroyed access, our access road, Chapman's Lane – because my husband's family has lived there since 1913 – three times in five years. These are floods that are supposed to be once every 50 years. Three times in five years. Climate change, generations to come will say, "So, you had this opportunity to plant trees, great, let's plant trees, absolutely. Oh, but then you chop them done to burn them?" We're already at the climate crisis, and our farm is testament to that.

Thank you, Stuart. And if Redbank is allowed to restart, hopefully the wind never blows east as the crow flies, because (last slide) maybe the children in Singleton shouldn't breathe either. It is less than 6 kilometres as the crow flies, and there are only four monitors in the Hunter Valley that actually measure PM2.5's. What the EPA has done already is completely inadequate.

Thank you.

PROF MENZIES: Okay. Our next speaker is Susie Russell from the North Coast Environment Council.

MS SUSIE RUSSELL: Thank you. The North Coast Environment Council is a voluntary conservation organisation formed in 1976. We have a long-time interest in forests and biodiversity, in particular.

In 1999, I wrote our submission on the proposal to convert two north coast sugar mills into electricity generators. They proposed to burn weeds, specifically camphor laurel, to augment the seasonal sugar cane waste. In our submission, I pointed out that this was not possible to do economically, and that, like nearly all of the global biomass burning electricity in the world, these power plants, small by comparison to Redbank (they're only 30 megawatts), would turn to burning wood and clearing trees for burning.

This is what has happened with many of the trees that were managed investment scheme plantations, supposed to supplement or replace logging native forest, having now been cleared and chipped and burnt in these power stations. On their website, they refer to these as "purpose-grown energy crops". The first iterations of Redbank proposed to burn wood from native forests. And in this one, they do too. It's just hidden in the fine print.

Despite the document having in the title the phrase that "the feedstock will exclude native forestry residues from logging," table A111 of their fuel supply characterisation study says, "A key fuel" – their words not mine – "is wood waste from forestry operations including tree heads, thinnings and woodchip and bark." This is the same old claim made by the global biomass industry that they just use waste. This is what the Proponents of the Eden Woodchip Mill say too.

Where some see waste, others see habitat for endangered gliders, koalas and numerous other species. And this is not specifically ruled out in the conditions. Native forest residue should not be allowed to be used, because it has been abused and misused as a way for clearing of forests all around the world.

The largest single greenhouse gas emitter in the United Kingdom is the Drax Power Station, a converted coal plant. It burns more than 8 million tonnes of wood a year, and in 2024 got 1,869 million pounds of public subsidies, more than 2 million pounds a day, as a green energy provider. And it's burning forests, being clear cut in the United States and Canada, trucked, ground up, pelletised and shipped halfway around the world.

I also recommend that you watch the film *Burned*. Are trees the new coal? Redbank is Australia's Drax. The plan to get one-and-a-half million tonnes of dry weight biomass from invasive native species, and I note they're not weeds, they're native species including eucalypts and nitrogen-fixing acacias. The plan to get 1.5 million tonnes in the first five years has received little scrutiny. There are no studies on what will be the environmental impact of a dramatic increase in land clearing or the impact of tens of

thousands of B-double truck movements travelling the 1,200-kilometre round trip from near Cobar, as has been proposed.

Recent land clearing figures show that more than 6,000 hectares were cleared under the Local Land Services Act in 2023 for the management of invasive native species. If all of that had been cleared, bulldozed, chained, windrowed, chipped, loaded and trucked the 600 kilometres from Cobar to Redbank, it would still be less than half of what the Proponent says they're going to use.

A 2019 New South Wales Auditor General report found, quote, "The clearing of native vegetation on rural land is not effectively regulated and managed. The processes supporting the regulatory framework are weak, and there's no evidence-based assurance that clearing of native vegetation is carried out in accordance with approvals."

This proposal incentivises land clearing. The fuel supply is a house of cards that hinges on the fiction that the extraction, transport and burning of biomass is carbon neutral. The scientists involved in the early discussions about energy accounting at a global level thought that biomass would come from agricultural residues like rice husks and the carbon emitted from burning them would be drawn down the following season. Burning wood from trees and shrubs that take decades to grow, or from land clearing when it doesn't regrow, wasn't intended at all, and so say the architects of the scheme.

In 2021, more than 500 scientists and economists wrote to world leaders about this issue. In part, the letter read: "We, the undersigned scientists and economists commend each of you to be ambitious goals you have announced to achieve carbon neutrality by 2050. Forest preservation and restoration should be key tools for achieving this goal in simultaneously helping to address our global biodiversity crisis. We urge you not to undermine both climate goals and the world's biodiversity by shifting from burning fossil fuels to burning trees to generate energy."

This is not a renewable energy project, it is really not part of our future. Thank you.

PROF MENZIES: Susie, I was interested in your calculation as to the amount of material that would have come off invasive native species clearing over recent years. That wasn't in your written submission, I wonder –

MS RUSSELL: No, because the figures were only released, it was in a *Sydney Morning Herald* article on the 29th of July this year.

PROF MENZIES: Okay. I wonder whether you might be going to make another submission, in which case that rough calculation would be instructive for us.

MS RUSSELL: Yes, I'll definitely include the reference. I didn't want to get into the nitty gritty during my presentation.

PROF MENZIES: No, no, not good for a presentation, and I'm not going to ask you to rehearse the numbers here on the spot. But it's an interesting thought, so if you could do that for us.

Other questions, Commissioners? No? Thank you very much. Our next speaker is Mark Brown from IEA Bioenergy, who's joining us on the telephone, I think. Mark, are you with us?

MR MARK BROWN: Yes, I'm here.

PROF MENZIES: Over to you.

MR BROWN: Thank you, Commissioner. As noted, my name is Mark Brown, I head up the Forest Research Institute at the University of the Sunshine Coast in southeast Queensland, and currently act as the Chair of IEA Bioenergy Technology Collaboration Program which is countries collaborating around the development of knowledge, best practice and science in the area of bioenergy, particularly with the interest of contributing to the net zero 2050 transition.

I'd just like to highlight, and it's been mentioned already, of the global strategies towards net zero 2050, speak to an integral role for a biomass and bioenergy to play in that transition. Particularly, the International Energy Agency and the IPCC, which have both been mentioned earlier, sees nearly a doubling of bioenergy's contribution to get to that net zero outcome.

What I will point out is that bioenergy being part of the net zero solution requires sustainable supply. And that concept of net zero emissions was really well explained by Fabiano earlier. But the whole premise is that the area being managed is a portion of land that has a biomass of harvested or recovered, which is a small portion of the total management area, and the growth on that total management area either matches or exceeds that annual extraction.

The use of residues in all of those modelling I mentioned from IEA and IPCC is fundamental to the success. And in the case of the IEA modelling, their view is that residues from existing bioeconomy is where most if not all of that material will come from.

Looking at the solution being proposed at Redbank, bridges or speaks quite closely to much of the work that's been done in the Technology Collaboration Program around biomass supply and sustainable supply. There is research that was done here in Australia and overseas that shows that supply chains can be managed with natural or passive drawing of the material to consistently meet a moisture content below 25%. And that can be done through supply chains to what is being often referred to as a "bio harbour or a pre-processing facility" at the power plant. And therefore it allows you to bring in crops from residues of different sources, ensuring they're adequately sorted for quality. [Unintelligible 02:55:25], that again Fabiano talked about quite well earlier.

The supply of those against sustainability is the cornerstone and I'll keep repeating that – apologies if it's over-repeated. It's core critical to that element. If we talk about the dedicated crops being proposed for degraded mine sites and/or marginal agricultural landscapes, these on their own at initiation will introduce a new carbon storage [audio glitch 02:55:47] improvements to the biodiversity on their sites. And once the [unintelligible 02:56:01] integrated sustainable supply will represent an ongoing contribution to both of those areas.

What we're seeing in the research we're doing both in New South Wales and Queensland around agroforestry and so the pastural systems, if when you integrate those multiple land use strategies, not only do you improve the biodiversity of the carbon and the quality of those sites, but you also improve the agricultural systems and production.

The last point I'll just touch on is the case of the Redbank. What we've seen in the work we've done internationally and with IEA Bioenergy is the opportunity to repurpose and reinvigorate existing infrastructure and technology, is quite fundamental to successful projects in that it's an effective way to bridge that existing investment into what almost turns into a huge socio-economic benefit for that region, in terms of jobs, [unintelligible 02:57:02] community. And when compared to other renewable energies, it quite effectively does that better than most other in local jobs and local return to the local economy.

So, on that basis, all of the topics and research that I've touched on across the IEA Bioenergy Technology Collaboration Program, the best practices, case studies from around the world that touch on this topic, are all publicly available on the IEA Bioenergy website. I'm happy to take any questions at this point.

PROF MENZIES: Thank you, Mark, that was almost perfect timing for your 5-minute presentation. Questions?

PROF TAYLOR: How mature do you think that your modelling is from the research regarding the management of the supply chain, given the variables that naturally would stem from where and how and why you are sourcing the biomass materials? So, you talked about the supply chain being managed by natural residue, so what parameters did you put on the research to come up with that model? Or is there a lot more work to go in that area?

MR BROWN: Sorry. The research we've done is not specifically on the Redbank location. We have done case studies in other areas of Australia. And we often will leverage off experience in Canada, US, South America, and in many cases, the Scandinavian countries that have advanced.

The residue streams are contingent on sustainable forest management from the plantations. And they consistently are a very predictable volume that can come from that as part of the timber harvest that goes in those plantations. And the changing decision process at harvest, but consistently there's a volume of timber there that goes beyond what should be left or needs to be left on site for soil sustainability and is not

suitable for any existing timber markets. So, we talk about that higher value, it's not about diverting from existing uses.

And there's a very predictable volume. In most cases it sits in the 10 to 20 tonnes per hectare. Again, very contingent on what local markets look like for those timber materials. So, what exactly is in the Redbank, there would be a number of existing trials that could be leveraged or examined to bring into that local context without too much [unintelligible 02:59:54].

PROF TAYLOR: Thank you.

PROF MENZIES: Thank you, Mark. Our next speaker is Dailan Pugh, who is representing the North East Forest Alliance. Dailan is also joining us by telephone. Dailan, are you there?

MR DAILAN PUGH: Hello.

PROF MENZIES: We're all ears, Dailan, you have our undivided attention.

MR PUGH: Okay. I'm President of the North East Forest Alliance, and we've been dealing with forests throughout northeast New South Wales since 1989.

This proposal is contrary to the New South Wales Government policy to prohibit the burning of any forest and cleared vegetation for electricity, because it is not carbon neutral and is neither clean or renewable energy.

So-called invasive native species are naturally occurring species that are considered to impede pasture growth. They provide essential habitat for a plethora of native species, and therefore their removal has a significant environmental impact. There has been no consideration of these impacts.

Invasive native species are inadequately defined and their removal inadequately regulated. When combined with landholders' poor understanding of requirements, this means that even where it is allowable, there is a high risk of illegally obtained material.

The Proponent's claim that there are abundant volumes of invasive native species available, the reality is that most are not being cleared because it is too expensive. In 2023, 6,219 hectares of authorised invasive native species were cleared across the whole of New South Wales.

Another company, Renewed Carbon, is proposing clearing 7,000 hectares of invasive native species per year around Cobar to make high-grade charcoal and specialty timber products. A higher value use than proposed by Verdant.

Based on Renewed Carbon's data, Verdant would need to clear an additional 17,000 hectares per year to satisfy its requirements. This should be considered additional clearing, most of which would not otherwise occur. Increased land clearing will result

in increased environmental impacts and increased emissions of carbon dioxide. This has not been considered in the EIS or Assessment Report. It should have been.

The claimed intent is to eventually provide 70% of biomass from crops are vague and ill-formed and thus can have little credibility. The EIS maintains that Verdant has determined that it will not seek to use native biomaterial sourced from native forestry operations. The proposed consent conditions provide no requirements as to where the biomass can be obtained.

The concern is that if the volumes cannot be economically achieved from land clearing, which seems likely, that they will seek the volumes from logging. Should this proposal be approved? It is essential that the consent specify the source and volumes of biomass. It should prohibit the use of biomass from native forestry operations and require that the operations cannot commence until sufficient purpose-grown crops have been grown to provide 70% of the input.

The claim is being made that burning 700,000 tonnes dry waste of biomass to generate electricity will result in no carbon dioxide emissions whatsoever at the site. This is a nonsense and intentionally misleading. Half the dry wood is comprised of carbon, resulting in some 350,000 tonnes of carbon being released by the burning each year. This is multiplied by 3.67 to identify the amount of carbon dioxide released, which equates to a release of some 1.3 million tonnes of carbon dioxide each year through the chimney stacks at the site.

There will be additional emissions from debris and soils at the clearing sites and from processing and transporting woodchips or pellets. For honesty and transparency, the emissions of the plant need to be admitted. Claims that these emissions are counted under the Land Use Change and Forestry category need to be separately identified and justified.

Usually when claims are made that burning biomass will result in no net emissions, they are based on regeneration taking up released carbon over time. In this case, it's apparent that most of the vegetation from which the biomass is to be obtained, will not otherwise be cleared, and if left growing, would continue to sequester ever-increasing volumes of carbon in wood and soils as it matures.

Given the intent is to stop regeneration of woody vegetation that reabsorbs the carbon, then the outcome is a gross release of carbon to the atmosphere. If this proceeds, it would rapidly burn through New South Wales remaining carbon budget. I consider this proposal to be a massive threat to the future of New South Wales forests and biodiversity, that will significantly decrease New South Wales ability to reign in carbon emissions. And I plead with you to reject it outright. Thank you.

PROF MENZIES: Thank you, Dailan. Do we have questions? No. Okay. Thank you very much.

MR PUGH: Okay, thank you.

PROF MENZIES: And our final speaker before we take a break for lunch will be Peg Pugh from the Biomass Action Network of EPN International. Peg, we're on for you now.

MS PEG PUTT: Oh, hello. Thank you very much. So, I'm Peg Putt, I am a representative of the Biomass Action Network, which is part of the Environmental Paper Network International. I'm based in Australia but work internationally on the issues of biomass burning.

Here, I'm going to address feedstock and carbon accounting issues specifically, with emphasis on the flawed approach and erroneous claims to climate benefits made in support of the Redbank restart proposal. Recognising that a 5-minute spoken presentation won't cover everything, I will also make a written submission on behalf of the Biomass Action Network.

At the outset I also want to note that utilising wood or woody vegetation also has unacceptable impacts on air quality and raises serious safety concerns for the plant operations. The latter, an increased risk of explosions and fire due to fine particulate dust, seems not to be addressed. Increased air pollution with fine particulates is serious and should be addressed. Not dismissed because ambient air quality already exceeds standards. We need improvements, not a slippery slope to more pollution.

Now, the carbon footprint. Burning woody biomass increases atmospheric carbon dioxide concentrations immediately. Land sector reporting obscures the impacts of logging and clearing on ecosystem carbon stocks, and biomass energy will most likely displace other renewable energy rather than fossil fuels.

It is admitted by the Proponents and the EPA that the immediate greenhouse gas emissions of combustion of the woody feedstock are large and comprise the vast majority of such emissions. Those are not accounted for in the energy sector, unlike fossil fuel emissions which are, but in the Land Use Change and Forestry sector.

The claim is made that the emissions are carbon neutral because vegetation growing somewhere else will re-sequester the carbon. There are several problems with this assertion. The initial feedstock will be from land clearing, not from forestry rotations about which the claim of carbon neutrality is usually made. Land clearing is defined as deforestation and as such, is a separate activity to ongoing logging and regrowth in a commercial system. It is not a forest management activity.

And seeking to misuse the [luelacy 03:08:40] of rules to make it seem as if it is, is just plain wrong. Proponents must quantify the carbon loss and the re-sequestration, where it will occur, at what rate, and at what quantum, and within which timeframe.

The IPCC has made it abundantly clear, and I can supply the reference, that vegetation growing elsewhere would be doing that whether or not logging happened for biomass. Therefore, to make a claim of carbon neutrality, there needs to be additional sequestration over and above the normal growth rates of vegetation wherever it is, to make up for the losses.

For carbon neutrality, Proponents must prove additional carbon uptake as a result of their activities. This cannot be done, it never has been done, the IPCC is very clear that this is an impossibility and a wrong claim.

The timescale is also important in addressing carbon climate change. It's a long payback period to grow vegetation, while it's very quick to burn it. And all the while, those immediate emissions from combustion are in the atmosphere, causing climate change.

Thank you. I can hear that – I'll just finish the sentence. So, there are Paris timeframes for action, and that payback period is way outside of that and being added to by daily burning. I'll submit the rest of my material on the serious issue of carbon emissions and the misuse of [luelacy 03:10:27] for accounting, the responsibility the Proponent to provide information about their particular activities and not just mash it into Australia's national accounts. Thank you.

PROF MENZIES: Thanks, Peg. We certainly look forward to a written submission from you.

MS PUTT: Thank you.

PROF MENZIES: Okay. At this point, we'll take a break for lunch. Looking to return at 1:53 … 1:50. We're looking to return at 1:50. Thank you.

[Lunch break/music plays from 03:11:11 to 04:05:00]

PROF MENZIES: Okay, let's restart. Our first speaker for the afternoon is Jane McIntyre. And Jane is here in person. Welcome, Jane.

MS JANE MCINTYRE: Hello. I'm part of a group called No Electricity from Forests, who's been following this proposal for a number of years. I want to talk about the impacts of this project on the biodiversity around the proposed feedstock sources.

Firstly, New South Wales is in a biodiversity crisis, and the main reason is land clearing, much of it unexplained. Figures released only days ago reveal a 40% surge in land clearing across New South Wales in the 2022-23 period. The Department of Climate Change, Energy, Environment and Water said two-thirds of the land cleared under the Local Land Services Act was for, quote, "management of invasive native species," which I'll refer to as INS.

The land clearing will supposedly be regulated by the Local Land Services and the landholder. But land clearing in New South Wales has been in overdrive since the disastrous loosening of the laws in 2016, and regulation is notoriously poor. Large areas have been inappropriately cleared. The *Sydney Morning Herald* reports only in July, July 29th this year, that, quote, "more than half of it is unallocated to any law." In other words, more than half flies under the radar.

The June 2019 Auditor-General report on managing native vegetation found that, quote, “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.”

The 2025 State of Environment Report has confirmed that the extent of native vegetation, the condition of wildlife habitats and the number of threatened species is worsening. The top clearing areas in 2023, by a long shot, are those around the Cobar, Bogan shires. They account for over two-thirds of the land clearing in New South Wales, and this is the area from which Verdant proposes to get much of its feedstock. There’s a direct dotted line between the New South Wales biodiversity crisis and land clearing, the majority of which is clearing INS.

Secondly, Ecology Professor at Charles Sturt Uni, Professor Watson, referring specifically to INS clearing in western New South Wales writes, quote, “These shrubs have huge value for wildlife, for soil stabilisation and erosion mitigation. Clearing them for biomass energy production would be devastating for wildlife, including many threatened species found nowhere else.” The INS harvesting rules say that trees up to 30 centimetres diameter at breast height can be cut down. Trees this large will be sheltering wildlife and providing food and breeding sites. Up to 90% of each 1,000 hectare lot can be cleared. There’s been no assessment of the impact of this wholesale clearing on either the biodiversity or the existence of wildlife corridors.

Thirdly, Professor Watson refers to soil disturbance. That is, the wholesale clearing of land that exposes soil to wind and water erosion, kills micro fauna, flora and fungi critical for soil health, causes huge loss of soil carbon and risks runoff during heavy rains into watercourses. According to the IPCC, Australia is increasingly exposed to extreme droughts and floods due to climate change, and this trend will damage exposed soils.

Fourthly, Verdant will need constant supply of feedstock. Biomass burning for electricity will create an economic incentive for faster, more widespread land clearing. In a climate crisis, INS harvesting will remove carbon from the biosphere, burn it to release carbon dioxide, and that carbon will not be replaced, a net loss for New South Wales for carbon sequestration.

And lastly, there’s a good chance that creating a market for biomass-generated energy will displace investment from the true renewables that are proven to lower our carbon emissions, such as solar, wind and pumped hydro. Verdant claims this project will only have, quote, “a small net negative impact regarding its carbon budget,” but why even start down a path that will open the door to biomass burning at other decommissioned power stations, when genuine renewables are a proven technology to lower emissions and biomass burning has been so discredited globally?

To end, to coin a good old Aussie phrase, biomass burning for electricity doesn’t pass the pub test. The touted advantages of this project are so debatable that it would seem to be wise to apply the precautionary principle. Thank you.

PROF MENZIES: Thanks, Jane, and thanks for the submission that you put into the Department. You predominantly, within that, addressed the invasive native species question. I wondered if you had a view on producing biomass locally, for example, plantations on rehabilitated mine site areas, etc., how your group would view that?

MS MCINTYRE: Well, I think that the carbon accounting needs a lot more careful looking over as to what, exactly what would go into that sort of project. Also, too, just listening to Fabiano Ximenes, there are a lot of variables going on here. It's very hard to project.

And I'm also in agreement that I think it is the slippery slope, that if other decommissioned power stations are opened and they do start to burn biomass, and the idea of forest so-called waste has not been ruled out, that includes – and the DPI, I mean, we've been following this for about eight years, so the DPI has been putting out press releases saying that pulp logs, which are logs unsuitable for higher end use, can be burned for electricity, and it will supply this many houses in the future, etc., etc. So, I think it's a slippery slope that we don't need to go down, because we have genuine renewables that offer employment, good employment.

PROF MENZIES: Thank you, Jane.

MS MCINTYRE: Thank you.

PROF MENZIES: Our next speaker is Tom Ferrier, and Tom is also here in person. Welcome, Tom.

MR TOM FERRIER: Thank you. I first became aware or first became concerned about the burning of biomass when Verdant Energy Technologies, Hunter Energy as they were then known, was proposing to burn so-called forest wastes and residues from my local mid-north coast forests. Once I started to research the biomass burning industry, I became alarmed by the spurious claims of this industry being a solution to climate change.

We're in a climate emergency with less than a decade to restrict global temperature increases to less than 1.5 degrees centigrade. According to most climate scientists, we must stop burning carbon and clearing land for agriculture. Despite convoluted modelling in its submission, Verdant plans to do the opposite, that is burn carbon in the form of biomass, predominantly supplied by so-called woody weeds from western New South Wales. This will not be clean, green, renewable energy as claimed by Verdant.

It is puzzling that this proposed industry has even been considered as state significant, when in 2020 the New South Wales Parliamentary Inquiry into Sustainability of Energy Supply and Resources in New South Wales found that the burning of biomass for power generation is not, I quote, "economically or environmentally sustainable, and it generates significant carbon emissions." Yet ARUP in its final report concluded, concludes that Verdant's operation will only have a small negative environmental

impact, that's a quote, "a small negative environmental impact."

They accept Verdant's claim that biogenic uptake will reabsorb most of the smokestack emissions from the burning of woody weeds. They ignore the reality that the woody weeds will not be allowed to regrow, to reabsorb the carbon released upon burning, because one of the stated purposes of the land clearing is to open up agricultural land in the Cobar and Bogan shires. Even if the woody weeds were allowed to regrow, there is no acknowledgement of the time lag needed for regrowth to absorb the carbon dioxide emitted at smokestack, nor the loss of carbon from the soils at harvest sites. In other words, the greenhouse gases would not be reabsorbed within the decade we have to rapidly transition away from burning carbon.

Burning biomass is worse than burning coal. While biomass is not a fossil fuel, burning it is still burning carbon and releasing carbon dioxide. In fact, burning 850,000 tonnes of biomass will release over one million tonnes of carbon dioxide from the smokestack at Redbank annually. There will be additional emissions from fossil fuels used in harvesting, processing and transporting of the biomass, and emissions from the 1,200-kilometre return B-double trips from Cobar to Redbank will be major. The whole operation will not have a small negative environmental impact, as promised in the report.

In general, burning biomass emits more carbon dioxide than burning coal per unit of electricity produced, due to the lower energy density and higher moisture content of biomass. Leading Australian forest ecologists Mackey, Lindenmayer, Keith and [De Vries 04:15:52] have just published the findings of their investigation into the emissions from burning native hardwood biomass for energy. I quote from their concluding remarks, "While eliminating fossil fuels is critically important to meet global climate targets, we contend that there is sufficient evidence to reliably conclude that replacing fossil fuels with forest biomass for energy generation results in an increase in carbon dioxide emissions and atmospheric concentrations of carbon dioxide over climate relevant timescales."

Burning biomass for electricity is increasingly discredited overseas. In 2021, more than 500 top scientists and economists sent a letter to leaders of the US, EU, Japan, South Korea and the UK, urging them to stop burning biomass to make electricity in converted coal burning power plants. They emphasised the false carbon accounting used in calling biomass burning carbon neutral.

Verdant's proposal, if approved, will see Australia beginning to go down this highly discredited path. Surely, we owe present and future generations genuine, proven, cheaper, cleaner, renewable energy such as solar, wind, battery store and pumped hydro, not an industry that increases emissions. Thank you.

PROF MENZIES: Next speaker is Lis Ashby from the Biodiversity Council and Lis is joining us by telephone. Lis, over to you.

MS LIS ASHBY: Hello. I'm the policy innovation lead at the Biodiversity Council. I wanted to focus on the invasive native species element. Redbank is expecting to source

a significant amount of biomass from invasive native species. Invasive native species are native woody plants that regenerate after disturbance or grow in areas where they previously occur. The intent is to clear those species that have reached unnatural densities and dominated an area to achieve better land management goals.

Clearing of invasive native species can be done without formal assessment or approval under the Native Veg Code by Local Land Services, so it's not subject to significant amount of scrutiny. Clearing of invasive native species in 2023, which is the last reporting period, made up the largest component of authorised clearing in New South Wales at 65%. But the assessment report for the first stage of Redbank states that they require 500,000 dry tonnes of biomass from invasive native species, and Redbank's own study says 25 tonnes of biomass are sourced per hectare. That would necessitate clearing of 20,000 hectares.

So, in 2023, when invasive native species made up the largest component of authorised clearing in New South Wales at 65%, it was still only 6,219 hectares of clearing. So, the clearing of invasive native species will need to increase by at least three times to provide enough biomass to reach their goal of 500,000 dry tonnes of biomass. And the area cleared is likely to be much greater than three times, because that assumes that all invasive native species cleared would end up being burnt, which is unlikely given issues related to logistics of getting that material from different properties to the power station.

As I said before, there's insufficient oversight to ensure the system is not abused. And there is a precedent for waste products from land management, leading to more harvesting of a natural resource. This may seem unrelated, but it actually talks to the incentive that you provide in the system by providing profit for a waste product.

So, Victoria's kangaroo pet food trial was established to reduce the waste of kangaroo carcasses controlled by farmers to reduce grazing pressure. The evaluation of that trial found that the average number of kangaroos controlled was at least two times larger than the areas outside the trial areas, and two and a half times larger than the long-term average. 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.

So, it's highly likely, given the amount of biomass they need is three times the amount that the invasive native species right now could provide, and that we have this precedent related to the kangaroo pet food trial, that we're going to incentivise additional land clearing by farmers.

This all assumes, of course, as well, that invasive native species are some kind of waste from a biodiversity perspective. But keep in mind that an understanding of whether these species are reaching unnatural densities and dominating an area would actually require someone to undertake an inspection and have an understanding of the ecology of an area. And we know that because there isn't formal assessment under the Native Vegetation Code, that this isn't happening. It's at the discretion essentially of the farmer to make those judgements.

And given that there are 45 species listed as invasive native species, it seems unlikely that you can apply these blanket rules and be confident that you're not having a negative biodiversity impact. So, I want to re-state that if Redbank is approved, there is a significant risk that native vegetation clearing will substantially increase to meet the demand for biomass, leading to very poor outcomes for biodiversity. Thank you.

PROF MENZIES: Thank you very much, Lis. Okay, our next speaker is Professor Hugh Possingham. I want to just disclose that I have worked at the same institution for a long period of time, so know Professor Possingham well. Hugh, over to you.

MR HUGH POSSINGHAM: Thanks a lot. Yes, I should be reasonably brief. I'm really going to talk about the issue of provision of fuel stock from the four main sources for the power station, invasive native species mainly, but also plantations, crop residue and legal land clearing. And I want to talk about some of the major assumptions that I think are implicit in this document or the documents that I read, and the fact that I think a lot of those assumptions are contestable and need to be actually provided. We need some more scientific evidence around those assumptions.

One of the assumptions, and that's implicit in some of what I read and one of the videos, is that for invasive native species, those woody lots have no biodiversity value. That assumption is false. That's categorically false. There are many, many species that favour dense shrublands. For example, spotted bowerbirds, a whole heap of small bushland birds. So, to say that they are of very low value is false. And we would need evidence that they are of no value, when most of my understanding is that they have them.

Now, open woodlands, which are when you clear and manage those invasive native species, are also important habitat. I'm not saying they're not possibly equally important, but if they're very open woodlands with, say, a tree every hectare, they're probably not as useful to biodiversity. So, this leads to the next point. So, first of all, one, they are not of no value. They have actually some substantial biodiversity values.

The second one is then that they are natural. So, the narrative is, and this has been a common narrative around thickening in Queensland and New South Wales, that they're unnatural. Well, I agree that if you overgraze and you do poor fire management, which has happened in many of those systems, so it is something that we as western agriculturists created, does change the vegetation and can tend to cause dense woody shrublands because of that poor management. But dense woody shrublands were certainly part of all those ecosystems in the past across central and western New South Wales. There were patches of natural woody shrublands everywhere and could be quite extensive areas. So, they're not an unnatural ecosystem.

They may have expanded in abundance in certain places. And the narrative that the early settlers said, oh, they drove their horses and carts through these lovely grassy woodlands, they were almost certainly – we have very scattered evidence, of course – they were almost certainly following Aboriginal songlines, which now become stock routes, which are the most productive parts of the ecosystems, which are heavily

managed by the First Nations people using fire, and that maintained those open grassy woodlands. So that's an important point.

So that's all the invasive native species stuff. When we're talking about the issue of plantations for producing fuel stock and crop residue, the first thing we really need to think about is, is that possible forever without degrading soil properties and removing nutrients? And that to me seems quite unlikely. So, you need to prove that you continually take off this biomass and not actually degrade the soils. Because if it wasn't taken off, it would go into those soils, and you would have carbon and nutrients recycled into the soils.

And on the biofuel side, and I have written papers on biofuels, various kinds, it is almost never an efficient land use. It is extremely unlikely to be profitable. So, I'm very sceptical that biofuel plantations are ever going to create a consistent supply, because they're just so unprofitable when you include all the costs of haulage and all those other things, and management. And that's true for biofuels around the world. I mean, I think they've played an important role in the transition, but in the end, I think they're not a great use of land. And of course, definitely not a great use of land relative to other agricultural uses.

And then finally, the other assumption is that these things, that creating a demand for biofuels wouldn't affect legal and illegal land clearing. And there's a real worry that in fact having these markets, and markets are very difficult to control when you create them, you won't have these perverse outcomes in terms of legal and illegal clearing.

So, there's still six major assumptions, I think, implicit in these documents. And I think all of them need an evidence base, and they need to be supported by scientific evidence for this sort of project to proceed. That's me.

PROF MENZIES: Thanks, Hugh. Any questions, Commissioners? No. Okay, thank you, Hugh. Our next speaker is Hannah Thomas. Hannah, over to you.

MS HANNAH THOMAS: Hello. My name is Hannah Thomas, and I am a –

PROF MENZIES: Yes.

MS THOMAS: Oh, hello?

PROF MENZIES: Yep. Hannah, you're on. Sorry.

MS THOMAS: Thank you. My name is Hannah Thomas, and I am a PhD researcher at the University of Queensland's School of the Environment and the Centre for Biodiversity and Conservation Science. My PhD research has focused on vegetation management and policy in Australia.

Today, I'd like to chat for a few minutes about one piece of research in particular, where I looked at the value that regrowing forest and woodland ecosystems, which I will refer to as regrowth vegetation, often referred to as INS in relation to Redbank

Power Station, provides for threatened species. My research occurred in Queensland, but many of the species I looked at also occur in New South Wales, and thus the results are still applicable.

The most important takeaway from my research is that many threatened species can use regrowth vegetation as habitat, even when the regrowth is quite young. And here I will dive into a couple of the most important details. So first, we questioned 50 experts on the minimum age at which threatened species could use regrowth vegetation. The average age for older threatened species that I examined was 15 years. The youngest, for a bird called the squatter pigeon, was just 3 years of age. Iconic species like the koala, who everyone is familiar with, could benefit from regrowth as young as 9 years of age. The age at which species can use regrowth depends on what they eat, how they move through the landscape, and the requirements for breeding and shelter.

Of course, some species, such as the greater glider, need much older forests. This is because they require large tree hollows to shelter in during the day, and large trees to feed on and move between at night. So young regrowth shouldn't be seen as an alternative to protecting older remnant forests; we need both.

Second, we also estimated the proportion of each species' current habitat that comprises regrowth using satellite data and publicly available data. On average, it was 18%. But for some species, so the swift parrot and the regent honeyeater, regrowth actually made up about a third of their potential habitat in Queensland. Both of these species are listed as critically endangered and also occur in New South Wales.

So, what this means is that for threatened species living in landscapes where much of the remnant vegetation has already been cleared, regrowth is providing valuable habitat, resources such as food, and allowing easier movement between remnant patches of bushland.

Finally, we looked at habitat loss. So around three quarters of threatened species' habitat loss in Queensland since 2018 was regrowth forests and woodlands. So, while the loss of older remnant vegetation is more damaging per unit area, regrowth habitat is being lost on a much bigger scale.

To summarise, our results show the importance of retaining as much regrowth vegetation as possible to benefit threatened species. The important context here is that so much of our original remnant forests have been lost for agriculture, housing, mining, renewable energy, etc., and populations of threatened species have been declining for many decades. We already have research in Australia that has shown that habitat loss is the number one threat affecting threatened species, and the most important conservation action. We should therefore be focusing on avoiding and minimising all further threatened species' habitat loss.

The scoping report of the Redbank Power Station states in the introduction that Redbank will be fuelled by ecologically sustainable biomass. I think there's very little evidence from my research and many others that clearing of regrowth is currently ecologically sustainable for threatened species. Thank you.

PROF MENZIES: Thanks Hannah. Just to put your work in context, where in Queensland were you working – was that Mulga zone area, Mulga bioregion?

MS THOMAS: So, we looked at threatened species across the whole of Queensland, but the focus was the Brigalow Belt, the Mulga Lands and southeast Queensland.

PROF MENZIES: Great, thank you very much Hannah.

MS THOMAS: Thank you.

PROF MENZIES: Okay, our next speaker is Professor Brendan Mackey, and once again I wanted to disclose that Brendan is a colleague of mine at the moment. Brendan, over to you.

No, they've sent me a message which said we have had to swap the next speaker to later. If only I read the screen before I spoke, it would be good. So, next speaker is Professor Donald Butler. Donald, if you are with us, you're now up.

MR DONALD BUTLER: Okay, thanks. Hope you can hear me okay.

PROF MENZIES: We can hear you perfectly.

MR BUTLER: Yes, thanks. My apologies for not having any visuals to go with my voice. I'm speaking to you today because I've been briefed to provide advice as an independent expert. I've been briefed by the Environmental Defender's Office on behalf of the Nature Conservation Council, and I'll also be providing a written expert report.

My expertise is in native vegetation management and biodiversity, including carbon stocks in native vegetation and greenhouse gas emissions from native veg clearing. The key points I wish to address here are really around the sourcing of fuel from invasive native species clearing, invasive native scrub clearing, which the Proponent's indicated they intend to use to source up to 500,000 tonnes of biomass salvaged from areas that have been cleared for invasive native scrub, so-called INS clearing, and that this biomass would be salvaged from INS clearing areas in the western and central west Local Land Service, or LLS regions.

First of all, a few comments on the practice of INS clearing. It's sometimes described as a restorative practice, especially when you read through the New South Wales government's justification for its presence in their Veg Codes, with the sense that INS clearing might be an effort to rebalance native ecosystems.

My view is that that gives a bit of a biased and misleading sense of what INS clearing represents, especially from a biodiversity point of view. INS clearing might help restore or increase and enhance agricultural productivity in some places, especially in western New South Wales, but there's no sense in which I see INS clearing as a general restoration practice for native vegetation structure, and certainly not for the

biota that depend on native vegetation.

Part of that is because native vegetation in semi-arid and arid regions changes over very long timespans. So, for example, in western New South Wales there was a very severe drought at the turn of the 20th century, the beginning of the 20th century, the Federation Drought, which cleaned a lot of woody timber out of the western division, and led to a Royal Commission. And that drought, the recovery from that drought in terms of stocks of woody vegetation really only took hold in the 1950s after back-to-back La Niñas, and we've seen episodes of regeneration of native woody species in that landscape in response to back-to-back La Niñas in a couple of other points in the late 20th century, and also into this century.

And that regeneration I see as part of a natural kind of dynamic in those regions in the native vegetation, so that the idea of clearing those cohorts of regenerating woody native plants in order to rebalance is a bit like taking out all of the juveniles of any population. It's not really good for the species, and it's certainly not good for the native animals that rely on dense patches of woody vegetation to persist in western New South Wales, and it shouldn't be seen as a restorative practice from the point of view of biodiversity. And that's especially true where INS clearing involves subsequent cropping, which might only be for a year or two, but that can really delay the recovery of that habitat.

Most importantly, the level of clearing that will be required to yield 500,000 tonnes of salvaged biomass is likely to see a large, or drive, require a large increase in the rate of INS clearing in the western and central west LLS regions, which currently sits at around 8,500 hectares a year. Whereas 500,000 tonnes of salvaged biomass, even at the Proponent's optimistic estimate of a yield of 25 tonnes per hectare cleared, would require 20,000 hectares of clearing to yield 500,000 tonnes, which is a substantial increase, more than double the current rate, and therefore represents a threat to biodiversity in those regions.

So, I'll stop there. I did hear a bell, was that?

PROF MENZIES: Yes, we just heard the double bell, so perfect timing, Don.

MR BUTLER: Excellent, good.

PROF MENZIES: We do have questions for you though.

MR BUTLER: Sure.

MS O'MARA: I just wondered if you have any comments about purpose-grown fuels?

MR BUTLER: I think that's a case-by-case matter. My sort of main concern with purpose-grown fuels would be about their weed potential and their potential to displace other land covers, especially native vegetation.

MS O'MARA: Thank you.

PROF MENZIES: Okay, thank you, Don. Okay, so we're returning to Brendan Mackey as our next speaker. Brendan, over to you.

MR BRENDAN MACKEY: Yes, good afternoon. Can you hear me okay?

PROF MENZIES: Yes, we can hear you perfectly.

MR MACKEY: Okay, so you would just like me to speak now?

PROF MENZIES: Yes, yes, Brendan. I've already disclosed that you and I are colleagues, so you're right to speak at this point.

MR MACKEY: Okay, thank you. Yes, I was going to ask about that. Okay, well, as I understand it from reading the documentation, the Proponent proposes to re-establish the Redlands Power Station by using up to 700,000 dry tonne per year of biomass as fuel, and the accompanying Greenhouse Gas Report said it used an operational scenario whereby emissions were estimated based on a planned maximum throughput of biomass fuel of 850,000 tpa with a 25% moisture content. And the Proponent's Greenhouse Gas Report goes on to state that the total Scope 1 emissions for the proposal at capacity is calculated to be 21,241 tonnes of CO_2 equivalent per year.

Well, I would put it to you that this actually underestimates the Scope 1 emissions by not one but two orders of magnitude. The actual emissions from burning 850,000 tpa at 25% moisture content would be actually around 1,169,813 tonnes of CO_2 per year, every year. This is calculated as followed.

At 25%, we would have about 637,500 tonnes of dry biomass, and about 50% of dry biomass is carbon. This would give us about 318,750 tonnes of carbon. And to go from carbon to carbon dioxide, when you oxidise it and add the oxygen, the conversion factor is multiplied by 3.67. The document says that the proposal is to use 700,000 dry tonnes of biomass per year. Well, that would generate up the stack annual of emissions of 1,284,500 tonnes of CO_2.

Now, people listening might wonder how can there be two orders of magnitude difference between the Proponent's greenhouse gas reported figure and what I'm suggesting the actual CO_2 emissions would be. Well, the explanation, as far as I can understand it, is that their analysis is simply based on the assumption that burning woody biomass for energy is carbon neutral.

Now, a model based on this assumption, therefore, is designed not to see or represent the power plant's CO_2 emissions from burning the woody biomass. Rather, the emissions are simply ignored and not reported. We addressed this issue in a peer-reviewed scientific paper which was published recently in the British Royal Meteorological Society's Journal for Climate Resilience and Sustainability.

Actually assuming this assumption that the emissions up the stack from burning woody

biomass are carbon neutral, is a scientifically false assumption which, unfortunately, is all too commonly used in models to support the claim that burning woody biomass as a feedstock for generating bioenergy is carbon neutral. So, this is actually where it's found to be quite commonly done, that the CO_2 emissions up the stack are ignored simply because that assumption is made right at the beginning of the model.

So, the key point to understand is, whilst the emissions from burning biomass are instantaneous, their net removals from the atmosphere by any regrowth are not. This means there's always a significant time lag between when the carbon is emitted and when an equivalent amount could be removed and stored. This theoretical removal of atmospheric carbon through regrowth can take decades and centuries. Actually, if you think about it, the intention is for the land clearing to be ongoing and for the purposes of the changed land use, there will always be more carbon in the atmosphere than in the ecosystem if it were to be left alone and to continue maturing.

So, finally, this lag between emissions and removals, if they ever would occur, is critical because steep and sustained emission reductions are needed now to limit global warming to the 1.5 Paris Agreement target; therefore, delaying carbon removal until beyond 2030, 2050 is simply not a climate solution. So, that's – thank you.

PROF MENZIES: Brendan, you're right at time, but I wanted to ask you for a viewpoint on the use of short rotation biomass crops as fuel.

MR MACKEY: Well, that would require you to do a whole of lifecycle analysis and look at various counterfactuals, including alternative land uses, would be my short answer to that question.

PROF MENZIES: Yes. Commissioners, other questions?

MS O'MARA: I just wondered whether you are intending to make a submission, and it would just be useful to have the details of the paper you referred to?

MR MACKEY: Yes, I'm very happy to make a written submission.

PROF MENZIES: Thank you, Brendan.

MR MACKEY: Okay, thank you.

PROF MENZIES: Our next speaker is Professor Andrew Macintosh. Andrew, over to you.

I don't think we have Andrew up yet.

MR ANDREW MACINTOSH: I can now hear you. Can you hear me?

PROF MENZIES: Okay, excellent, Andrew. Yes, we can hear you. So, you now have the floor.

MR MACINTOSH: Brilliant, thanks. So, just to start off with, I've been engaged by the Environmental Defender's Office in New South Wales to provide an expert report, and they're acting on behalf of the NCC, Nature Conservation Council of New South Wales. Myself and my colleague, Don Butler, will be submitting an expert report on what I want to talk about. So, I just want to focus here right now on the greenhouse gas emissions implications of the proposal. It's one of the things we've been asked to provide expert opinion on. And what I'm instructed is the EIS is supposed to provide an assessment of the impact of the proposal on the environment, which for these purposes includes climate impacts or the greenhouse gas impacts.

So in assessing these impacts, the Proponent seems to have applied a quasi-attributional lifecycle assessment approach that has effectively discarded the emissions associated with the harvesting of biomass from native plants, what they refer to here as INS, invasive native species. This appears to be the reason why the assessed emissions are so low. So, there are about 38,500 tonnes of CO_2e per year, comprised of about 18,000 tonnes in Scope 1 and about 21,000 tonnes for Scope 3. It also explains the use of a zero emissions factor for emissions from biomass, so CO_2 only from biomass. Most of the emissions there that are accounted for are – well, they are – methane and nitrous oxide.

Standard practice, though, when you're going to assess the greenhouse gas impacts in a development of this nature should involve the use of consequential, not attributional, lifecycle analysis. And what that really boils down to is that you're supposed to evaluate the impacts by comparing the emission outcomes from two scenarios; a reference scenario where the proposal doesn't occur, and the project scenario where the proposal does occur.

Now, if you apply this approach, it becomes clear very quickly that the greenhouse gas, or the net greenhouse gas impacts of this proposal, largely turn on the assumed level of clearing in the reference scenario. In other words, in the absence of the project, would the vegetation be cleared? Or probably more accurately, how much of the vegetation would be cleared?

Now, the Proponent proposes to source up to about half a million tonnes of dry biomass from INS clearing in the western and central west Local Land Service regions, based on assumed yield of about 25 tonnes of dry matter per hectare. Now, based on this, this would require about 20,000 hectares a year of clearing, assuming 100% recovery rate, which is not plausible.

So, just to put that in context, over the period 2018 to 2023, total average annual agriculture-related clearing under the LLS Act, Local Land Services Act, and the Native Vegetation Act, across these two regions, the western and central west, was about 8,500 hectares a year. So, 8,500 hectares a year, that's total average annual agricultural clearing. So, obviously not all of this was INS clearing. And also, it's not possible that all of this biomass will be directed to the power plants.

But if we base these numbers and we take them at face value, it suggests that supplying the required biomass would require about a 235% increase in clearing in these regions.

So, a very large increase in clearing across the two relevant regions.

Now, let's go to a more plausible scenario. So, a more plausible estimate of the amount of aboveground biomass that is impacted by INS clearings, probably around 21.5 tonnes of dry matter per hectare, with a recovery rate of about 90%.

So, this provides a yield of about 19.35 tonnes of dry matter per hectare. And based on this, the required rate of clearing to supply the required half a million tonnes is about almost 26,000 hectares. It's not plausible that all INS clearing will be directed to the power plant. So, in order to get this biomass that they need, their clearing rate across the western and central regions would need to exceed at least 30,000 hectares a year. So, go back to that historic rate of about 8,500 hectares. What they're calling on is basically an increase to more than 30,000 hectares in order to supply the 500,000 tonnes.

Now, this level hasn't been reported in this region over the period since 1988, since clearing was tracked by satellites. But also, I should note the Proponent's suggest that the use of INS biomass would decrease over the first five years. But even at that rate, it still requires clearing of about 5,500 hectares.

So, what this all suggests is that the project will necessitate a substantial increase in clearing. And as a consequence, they appear to have substantially underestimated the greenhouse gas implications of the project based on the available data, just that we conservatively assume that clearing will need to double. That will lead to a net emissions increase of about 440,000 tonnes of CO_2 a year. And you add the other relevant greenhouse gas emissions, so it equates to a total increase of about 465,000 tonnes of CO_2 a year.

And put that in context; so total New South Wales emissions are about 115 million tonnes. So, it's about almost half a percent of state emissions, or line it up against total emissions from cars in New South Wales and it's about 4% of emissions from vehicles. So, it's quite a substantial increase. That's all I have to say.

PROF MENZIES: Thank you, Andrew. That was a very clear presentation. You indicated that you would put in a written submission, and we're certainly looking forward to that. Commissioners, questions before we let Andrew go? No, we're good. Okay. Thank you, Andrew.

MR MACINTOSH: Thank you.

PROF MENZIES: Our next speaker is Brad Smith from the New South Wales Nature Conservation Council, who is here in person. Welcome, Brad.

MR BRAD SMITH: Thank you, Commissioners. I'm the Policy Director at the Nature Conservation Council of New South Wales. NCC is the state's peak environment organisation. We represent over 200 member groups across the state. Personally, I have a Bachelor's Degree in Electrical Engineering and a PhD in physics, and for the last eight years, I've led NCC's climate and energy program with the goal

of accelerating New South Wales transition to clean energy.

To achieve our Paris Agreement goals of limiting warming to below 2 degrees and giving future generations and nature a chance to thrive in a safe climate, it's critical that New South Wales builds clean energy sources, including firm dispatchable sources. However, restarting the Redbank Power Station with biomass fuel is a harmful distraction from this transition to a clean energy future, and NCC opposes the project and recommends rejection on several grounds.

Firstly, as you've heard over and over again today, this project would create a huge demand for biomass. This will drive, inevitably drive, an increasing clearing of native vegetation, including under the so-called Invasive Native Species Code. The recent 2024 State of the Environment Report identified land clearing as the greatest threat to biodiversity in New South Wales. This project would become the largest driver of land clearing in New South Wales.

Secondly, the project will generate over a million tonnes of carbon dioxide from its smokestacks, also from the diesel trucks and the bulldozers used to clear land, and by interrupting the sequestration of carbon into the soils and plants in the Central West and Western divisions.

The Proponent claims that CO_2 emitted would ultimately be reabsorbed when vegetation is replanted, but Verdant's own video submitted to the IPC shows woodlands and shrublands being permanently cleared for pasture. This is not a closed carbon loop. This is a one-way conveyor belt of native vegetation being put into the atmosphere.

The Proponent has cited the IPCC's Sixth Assessment Report on the need for or the usefulness of biomass, but this report is clear. Biomass burning is only acceptable if it's done in conjunction with reafforestation, and better yet, in conjunction with carbon capture and storage. But Verdant's project doesn't have the economic or the regulatory incentive to grow its own biomass, so existing at-risk native vegetation is the likely feedstock.

Thirdly, the project will worsen local air quality, including PM10 and PM2.5 ambient air pollution, which already exceeds the national standards. It's a small contributor, but so are most sources of air pollution. EPA regulation of individual facilities has failed to achieve air quality that meets the national standards, and so ultimately, assessment decisions, not regulation by the EPA, is needed to reject polluting projects and give effect to the national air quality standards. Once the project is up and running, it's very difficult for the EPA to achieve a reduction in air pollution.

So weighed up against these costs to society and nature, the benefits of this project do not stack up. Verdant commissioned Marsden Jacob to assess the benefits of the Redbank Power Station to the grid, but this report presented a skewed picture. The consultant correctly identified an energy security gap when Eraring is scheduled to close in 2027 yet incorrectly stated that Redbank would help.

Actually, the gap is caused by a transmission bottleneck between Muswellbrook and Lake Macquarie. That will ultimately be resolved by the Hunter Transmission Project, which is underway. In the meantime, the New South Wales government is seeking projects, firming projects, on the south side of this bottleneck through a 500-megawatt firming tender. Dispatchable energy sources on the north and west side of that bottleneck will not help with that energy security gap.

Dispatchable energy sources are required. However, this project is poorly suited to the needs of our modern energy grid, because it's relatively inflexible, because it has high fixed operating costs, and because it isn't located close enough to Sydney to overcome transmission delivery constraints.

Furthermore, workforce shortages are a key challenge our state is facing in the clean energy transition, enough people to build all the clean energy projects we need. If approved, this project will delay other genuine clean energy projects by worsening those labour shortages.

Projects like batteries and pumped hydro are in plentiful supply, so there's no need to approve an environmentally harmful project like the Redbank Power Station. We would recommend that Verdant consider reusing this site as a battery, as other old coal-fired power station sites have been used, or as a synchronous condenser, and New South Wales requires several synchronous condensers. NCC would heartily support those projects as consistent with New South Wales biodiversity and climate laws and goals. However, this project fails on both of those fronts.

Finally, I'd like to draw the Commission's attention to one particular error with the Proponent's emissions calculations. In their transport emission calculation, Verdant assumes biomass is sourced from 300 kilometres from Redbank. However, in the video submitted to the IPC, Verdant interviews three landholders and one Mayor. The farms are located 723 kilometres from Redbank Power Station, 579 kilometres from the station, and 590 kilometres away from Redbank. Sourcing fuel from those locations would double the transport emissions from the revised 17,000 tonnes up to over 34,000 tonnes.

The Proponent should either double its transport emissions to account for this 600-kilometre distance, or the IPC should condition the project to only accept biomass from the local area. Thank you.

PROF MENZIES: Brad, the same question as I've asked a few people; what do you think of purpose-grown short rotation crops as an alternative here?

MR SMITH: Yes, from a nature point of view, it would be a vastly better option than clearing native vegetation. For this power station, the Proponent first suggested cutting down trees in state forests, and then moved away from that, and now is suggesting cutting down trees in even more risky areas where most of the vegetation's already been cut down. So, certainly moving to purpose-grown fuels would alleviate those nature concerns.

Like others have pointed out, it becomes a land use question. The idea of planting crops on, for example, rehabilitated mine sites; well, those rehabilitated mine sites have agreements that say they should be rehabilitated to their previous use, so they should be able to be used for other agricultural purposes.

And then it becomes a decision for the Proponent and the state whether we want to be growing crops to burn or growing crops for other purposes. And I think that comes back to the need for an overarching biomass strategy. If the state decides it wants to go down this route of using biomass for energy, then we should have a strategy that does address some of those concerns around land use conflicts, so that we can make sure that projects are sited in actually the best locations.

And a good example of that problem is the two existing biomass power stations in New South Wales up in the Northern Rivers, Condong and Broadwater, which are built among sugar fields and were designed to burn sugarcane trash, but found that it was more economic to bring in logs from forestry operations and so has moved in that direction.

So, I think it's an idea that would resolve a lot of the problems, also a lot of the climate problems. If you want to cut down a tree, you should plant it first. It's a good principle. But yes, I think it should be as part of a bit more of a plan. Thank you.

PROF MENZIES: Thank you. Our next speaker is Candice Bartlett, also from the New South Wales Conservation Council.

MS CANDICE BARTLETT: Thank you. I'm a Conservation Officer for the New South Wales Nature Conservation Council, working across the habitat and biodiversity space. I have a background in environmental science, and I'm particularly concerned about the biodiversity in some of the regions that will be affected based on my background. I've worked as an ecologist in the Liverpool Plains region for several years, working with landowners across 18 different properties on koala monitoring. So, lots of time spent tracking through paddocks, but also to reach those stands of Callitris or native pine woodlands, and to track wildlife. And that's one of the species that's considered invasive native species.

So, the information presented in the available documentation and the response presented by Dr Mark Jackson today show that the off-site environmental impacts haven't been critically evaluated by the Proponent or the Department. The Department states that no conditions are required for biodiversity management. They state the project would not result in off-site impacts to other native vegetation. And as heard today in their response to public submissions, the fuel supply strategy is considered to have no effect on biodiversity by the Proponent. I'm going to demonstrate that this is a dismissive approach to concerns already raised, that needs to be investigated further.

The value chains that the Proponent seeks to establish would drive off-site biodiversity impacts for the two main fuel sources that have been proposed; invasive native species and energy crops. So, regarding invasive native species, there are three interlinked concepts that need to be understood together, and lots of this has been discussed today.

So that, one, invasive native species provides habitat and biodiversity values. Two, that the clearing of invasive native species will occur under the existing legislative frameworks that do not protect biodiversity values. And three, that establishing a value chain would increase invasive species removal beyond the current rates.

Information presented by the other speakers has already addressed the biodiversity values, so I won't expand on this too much further. But regarding the existing legal framework, in response to public submissions, the Proponent repeats that they'll only use invasive native species cleared in accordance with approval from Local Land Service. This justification is being used to negate responsibility for any environmental consequences of such clearing that would be driven by the value chains that are going to be created in this system.

The panel will be aware that reforms to the existing land management framework are being considered because an independent review has identified that they weren't serving the purpose of protecting nature. The Proponent has implied that this process is strict. Clearing under the Codes occurs without any biodiversity assessments. This project is creating a market for harvesting native vegetation without any independent ecological monitoring or protocols, and this is a bare minimum you'd see in any other native vegetation harvest operations like forest management. Because the Codes are designed around farm management, biodiversity considerations are overlooked.

One way this surfaces is that many people incorrectly assume that a state approval, such as a certificate from Local Land Services, eliminates the need for a federal approval. In May, the Australian Conservation Foundation published an investigations report that identified 62 New South Wales properties that are cleared habitat within areas for nationally listed threatened species, and that in none of these instances had they sought approval under the national environmental laws. And this issue has not been raised in any of the documentation provided as part of this project.

And to three, that invasive native species clearing would be accelerated under this inadequate framework and thus having off-site biodiversity impacts. The Proponent claims that the project would in turn incentivise land clearing that would have otherwise not occurred. A couple of other people have spoken about the recent land clearing data from New South Wales show that 6,000 hectares of approved invasive native species was cleared in 2023, but based on the independent market study, the project needs to source around 20,000 hectares of invasive native species for the power station's first year. And so, this is three times more than what's currently being reported and provides a clear link that to seek the required yield, the Proponent will be responsible for driving and increasing clearing rates. So, I believe this is cause for further revision of the proposed biomass sources and rejecting the levels sought.

And just lastly, I'd like to touch on the establishment of energy crops, which is going to be the main source of fuel for the lifetime of the project. In the land use conflict assessment, the Proponent indicates that around 72,000 hectares would need to be converted to energy crops for the project. Verdant indicates it would prepare studies to ensure that it only uses areas that currently have no alternate economic value to farmers and landowners. For example, targeting rehabilitated mining lands and semi-

arable land parcels.

The red flag here is that the criteria for crop establishment doesn't have an environmental remit. One document indicates mostly grasslands, potentially native, will be converted into crop country. There's a need to get the criteria right for biomass establishment, but focus on parameters that maximise environmental benefits, such as no new clearing, protecting native vegetation, avoiding areas that have already been set aside for remediation and low carbon soils.

So, if biomass is to be part of New South Wales energy future, further examination is required to establish criteria that's going to have a net benefit for the environment, utilise true waste, and not destroy native habitats.

PROF MENZIES: Thank you. Our final speaker before our afternoon break is Frances Pike, who's representing Australian Forests and Climate Alliance. Frances is joining us on the telephone. Frances, you have our attention.

MS FRANCES PIKE: Thank you. I have a presentation.

PROF MENZIES: Yes, it's on our screen.

MS PIKE: The Inquiry into Sustainability of New South Wales Energy Sources 2020, a Liberal instigated inquiry, forest biomass is not a renewable sustainable source of energy. Next slide, please.

Next slide, please. Labor agreed 2024 recognised burning timber include – back to two, please. Excuse me. Could you please go back to the other slide?

PROF MENZIES: Yes, I think we're on the correct slide now.

MS PIKE: Thank you. Recognised burning timber and clear vegetation, not carbon neutral, not clean, not renewable, not part of a credible strategy for reducing greenhouse emission, greenhouse gas emission, and that Labor would introduce legislation prohibiting the burning of any forest and said vegetation. Next slide, please.

PROF MENZIES: Frances, there's a delay. Assume that we're seeing the slide as soon as you ask for it, because that is what's happening.

MS PIKE: Thank you. All right. Thank you very much. 2025, the New South Wales Department of Planning now recommends that we can burn native forest wood with all the impacts that ensue. Verdant CIS models greenhouse gas and air pollution impact. The assessment report using Department modelling accepts verdant modelling. Next slide, please.

PROF MENZIES: We're seeing the slides as soon as you ask for them, Frances.

MS PIKE: Thank you. I just can't see them.

PROF MENZIES: No, you can't see them.

MS PIKE: But how many tonnes of CO_2 will really go into the atmosphere? Will it be 17,773 or a figure similar to that, or 1.3 million tonnes per science maths calculation?

Next slide, please. So, there's been a swift change in policy about burning native forest vegetation, and as a federal government inquiry has found, lobbyists do infiltrate government departments influencing policy. It's section 159 of the Department's assessment report. It says greenhouse gas emissions would be offset based on policy framework projections, and these themselves are based on a methods paper. But the methods paper is another modelling exercise, a carbon reduction, CO_2 reduction wish theory, lacking basis in biophysical reality. It might net good stats for governments claiming they will reach net zero, but the 1.3 million tonnes of carbon dioxide still go into the air.

Next slide, please. So, the assessment report at 152 suggests that Redbank be approved, because Verdant indicated it would mitigate emissions through carbon offsetting. That's all it says. It's accepted that it indicates it will do that. But Professor, the Director of the Potsdam Institute for Climate Impact Research, and Professor of Earth System Science at Potsdam, states plainly what any sane person knows now with climate catastrophe; that there are separate carbon buckets. You are not allowed to offset one against the other. We do not have time to do this. And if we assume we do, we will pass 1.5. You cannot substitute one for another.

Next slide, please. Now to health. I'll wait till I can see the slide. Okay, Redbank. Ten times more pollution than from all residential wood heaters in the Hunter combined. I'd like a little bit more, because I'm sorry, I couldn't see the slides. So, US peer review science is that the burden of PM2.5 indicates swapping one air pollution-emitting fuel source for another is not a pathway to healthy energy.

Verdant modelling air quality. Australia has no 100% wood combustion power at that scale, no real-world comparison. But overseas real-world experience is that it is very damaging to health, wood combustion. Next slide, please.

Okay. A New South Wales government study preparatory to upgrading the Clean Air Act found three air pollution sources collectively responsible for more than 50% of PM2.5 related deaths. Wood heaters, on-road vehicles, power stations. Redbank combines all three in a cocktail of toxicity. Next slide, please.

PROF MENZIES: Frances, could you just give us your summation at this point? Because we won't have time to progress through.

MS PIKE: Sure, that's fine. All right. We can see that air pollution from the Hunter will travel across Sydney – next slide, please – so this will affect the whole of the East Coast. And we also see in the next slide that the Environmental Health Standing Committee, the Australian Health Protection Principle Committee for guidance about PM2.5 shows there is no evidence of the threshold at which PM2.5 is safe. It's ironic to recommend an industrial scale wood combustion power station when New South

Wales government funded buyback schemes so that people would move from their polluting wood heaters to safer heating forms because of the acknowledged grave danger.

And now my last slide, is that we again have political inconsistency. We also have economics where we have an assessment report saying we're going to get $901 million value to the New South Wales economy, but the New South Wales State of Environment 2021 states that air pollution from fine particles is estimated to cost $3.3 billion in health costs each year in the New South Wales greater metropolitan region. I ask, will Redbank be able to offset its impact on New South Wales health from increased fine particle pollution?

There's one last slide, and that is that Professor Samuels, over five years ago, when he reviewed Australian environmental law, finds our laws not fit for purpose. They have not been fixed. Recommendations haven't been enacted. So, the legitimate concerns of scientists and a vast cross-section of the community opposed to this proposal are being silenced or rendered impotent through the inadequacy of state legislation and policies subject to short-term governance. Thankfully, the Commission is independent and can exercise its judgement based on science and common sense. Thank you.

PROF MENZIES: Thank you, Frances. No questions. Okay, at this point, we'll take a short break for afternoon tea, returning at 3:30 to restart. Thank you.

[Afternoon break/music plays from 05:13:54 to 05:42:43]

PROF MENZIES: Welcome back, everyone, for our last session, and thanks for sticking with us through what's a fair marathon set of presentations. For our last session, Margaret Mclean's going to kick off, representing the Hunter Community Network. No?

MS MARGARET MCLEAN: Yes, I'm Margaret McLean, but I'm not representing the Hunter Community Network. I am taking the place of Bev Smiles, though, because we were both community representatives on the Hunter River Water Management Committee many years ago.

PROF MENZIES: Okay, Margaret, thank you for the clarification.

MS MCLEAN: And I needed to let the Commission know, have some more background information with respect to the water. I responded, reacted to the Proponent earlier on this morning, saying that the water licence was relinquished in 2018, when I understood at that point, Redbank had been sold. Regardless, the water licence itself would have been sold.

Water licences are not licences to an amount of water. They're a licence to access. They're a right. And there were two types of – or perhaps there's more – but there's a general security licence, which is what a farmer generally holds, and the high security licence, which is the gets – and such. And I needed to make sure the awareness of, Redbank may not even be able to get any water. High security licences are worth who

knows what.

The coal mines have them, they need the water. The farmers have them, and have licences, but they're general security licences that the farmers have, such that in times of drought and limited flow and limited storage, the actual water sharing plan, that was what we worked on, it is where you worked out shares. How do we best share the water?

Well, what transpires is that water to farmers or through production or prime agricultural land, use of prime agricultural land is restricted before the high security licences. And it's specifically, which specifically it was power generation. It was, they would get water, be able to get access to water before the prime agricultural land. So, I was concerned, that was why I thought I needed to step forward to speak, that there really is a competition between power generation and food production, particularly into our uncertain future of climate change.

We may very – our previous droughts, like I live in the Hunter, I live in the forest. I am very aware of how it felt to live in a forest in the high fire risk time. So, I'm sorry for being emotional, and I won't be in this next moment, because I do want to say the things that Bev had said to me. It's the order of 3,000 megalitres of water that is needed. And it's like, it may well be that – and particularly if you had a choice, you may not be, you may well choose not to sell for love or money.

The high security licences are worth a lot of money. And so, to me, it's yet again, another uncertainty about this proposal, which I see is just riven with it, which is what you've heard today. It's where, and for me personally, now I'm personally wanting to make the statement of the fact that I do not see that the assessment on the impact on the environment, particularly biodiversity, has been done at all. And I think it is the responsibility of the IPC to be realising that. And then, I mean, the assessment is inadequate. I'd be rejecting it if I was on the IPC.

PROF MENZIES: Thank you, Margaret. Our next speaker is Greg Bourne from the Climate Council. Greg's phoning in. Greg, are you with us?

MR GREG BOURNE: I am, can you hear me?

PROF MENZIES: Okay, we can hear you clearly, so please go ahead.

MR BOURNE: Well, firstly, thank you, Commissioners, for giving me this opportunity to speak to you today at this public hearing. My name is Greg Bourne. My background is the energy business, having spent many years with BP, finishing up as Chief Executive of BP Australasia. I was the inaugural Chair of the Australian Renewable Energy Agency. I worked in wave power, wind power, solar power. I also have a background in the environment, having spent six years as Chief Executive of WWF Australia. I spent two years as Energy Advisor to Margaret Thatcher, and have worked at the nexus of energy, policy, and climate change ever since. But today, I'm speaking to you in my capacity as a Climate Councillor with the Climate Council.

The proposal to restart Redbank Power Station should be put on hold, until such time as the New South Wales and Commonwealth Governments have comprehensively understood the effects on the ecosystems and biodiversity within the land use catchment radius of the site, at least 300 kilometres. The ecosystems and biodiversity and communities within this radius are already being affected by climate change. Changes in temperature, rainfall, fire regimes, and extreme weather events have already occurred and are expected to continue.

From the New South Wales State of the Environment Report 2024, all of the five plant trend indicators are getting worse, as are all of the five animal environment trends. Soil carbon is getting worse, and so too are all three climate change environmental trends. This is not the time to be taking decisions to introduce new emissions, when there is a poor understanding of the mitigation pathways.

The understanding of emissions from land use and forestry sectors are perhaps the hardest to measure, and in my opinion are likely to be revised at some stage, a revision to Australia's and New South Wales detriment under the UNFCCC accounting reset provisions. It's only by quirk of the Emission Accounting Boundary Conventions that the Redbank Bioenergy Project can claim to have zero emissions. Clearly, by burning over 850,000 tonnes of bioenergy a year, it will emit on-site around 1.4 million tonnes of CO_2 equivalent, a little over 1% of New South Wales annual emissions. These gross emissions can be measured with confidence.

The netting off of these emissions within the land sink, however, are quite uncertain, so prudence and the precautionary principles should apply. Should the project be allowed to go ahead, it should do so perhaps within the safeguard mechanism with the project's on-site emissions being measured and attributed. The Proponent will then have the incentive to accurately measure the putative negative emissions and should bear the cost of accurately characterising the land sink measurements.

From a climate change point of view, there's also a temporal effect to be considered. Taking out 850,000 tonnes of biomass each year and burning it to create 1.4 million tonnes of CO_2 equivalent, cannot be offset by actively creating a new 850,000 tonnes of additional biomass each year. It's a multi-decade-long task to replace what's been taken.

Effectively, a continuous injection of greenhouse emissions occurs each and every year, without the guarantee of investment in restocking the ecosystem. In my view, the abundant alternatives to biomass for generating genuinely zero emissions power mean this project is not worth the risk. Wind, solar, hydro and batteries are all being rolled out at scale in New South Wales without the risks associated with this proposal.

Finally, I'd like to recommend to the Commission that in considering this and other similar climate biodiversity ecosystem proposals, the whole-of-system overview approach is applied, rather than a reductionist approach. The whole is not just the sum of the parts. Thank you.

PROF MENZIES: Thank you, Greg. Our next speaker is David Watson from the

Nature Conservation Council, and David is here in person.

MR DAVID WATSON: Good afternoon, Commissioners. I'm David Watson, Professor of Ecology, and Leader of the Environmental Program at the Gulbali Institute at Charles Sturt University's Albury campus. I've been engaged by the Environmental Defender's Office on behalf of the Nature Conservation Council as an independent expert witness. I'll be making a detailed written submission to this proposal but would like to make some broader comments here today.

I've got an international profile as an ecologist. I study ecological communities around the world using experiments and long-term comparisons. I've got ongoing studies in the Amazon rainforest and Patagonia, and across southern Australia. But the ecosystem I know best is the arid woodlands of western New South Wales. I was appointed to the New South Wales Threatened Species Scientific Committee for two terms and have a close working knowledge of relevant state and federal legislation regarding threatened species and threatened ecological communities.

For the past 24 years, I've worked in western New South Wales. I've established long-term sites near Bourke, Mount Hope, Cobar, and I take busloads of students out there every year to introduce them to the outback, and to the unique plants and animals that live there. It looks harsh, that red country, and uninviting to the untrained eye, but wildlife doesn't just survive out there, it thrives. Western New South Wales supports some of the largest and most diverse semi-arid woodlands in the entire world. Almost 300 species of bird live in this region, more plant species than most European countries.

Now, today you've heard lots of references to invasive native scrub. But did you really know what that refers to? Can you picture it? It's vast stands, plants like native cypress pine, a valuable timber that's resistant to termites, highly valued for construction work, for decking. It's creek lines lined with coolabah, river red gums. It's heathy patches of Eremophila covered in flowers. These are all native plants, those woody weeds and salvaged biomass that you've been hearing about in the Proponent's documentation. These are wattles, these are gum trees, she-oaks, bull-oaks, cassias, native cherries and hopbush. Many of these plants are found nowhere else on earth.

This scrub has been portrayed as barren, as useless. In national parks and other reserves, you can get a glimpse of how it must have been before it was cleared. And in areas that have been fenced to keep out cats and foxes, you can see bilbies and numbats, quolls and bettongs everywhere. This is productive country. For those plants and animals that can handle long hot summers, droughts and occasional floods, it's paradise.

As you've heard today, the growth and thickening of these habitats are the result of a series of back-to-back La Niña events that allowed trees, shrubs and other woody vegetation to replace the grassier woodlands that once dominated the district. These are plants that sheep and cattle don't eat. Once sheep and cattle ate all the rosewoods and quandongs and lower branches of mulgas and sandalwoods, they ate all the grass and chopped up what was left, there was nothing to hold the soil. After several droughts,

including the Federation Drought at the turn of last century, the entire region became a dust bowl, and most of the topsoil across all of western New South Wales blew away.

Now, I'm sure many people in the audience today have been to New Zealand. You've seen the lush forests, productive farmland. You might have gone to the South Island, to the Alps and looked around at glaciers. And on those glaciers today, you can see these beautiful big red bands across them. And you might think it's a kind of algae, some weird New Zealand life form. No, it's topsoil from western New South Wales that blew there. And New Zealand is a tiny little speck of country across the vast South Pacific that received millions of years' worth of quietly produced topsoil, gone forever.

Now, huge efforts are being made to restore these systems. Reintroduced species that have gone extinct. There's over 100 species of flora and fauna that's either threatened, vulnerable or endangered that lives in this district. Red-tailed black cockatoos, western blue tongues, great big lizards. This is their heartland. The reason why so many populations of threatened species live here is because of the vast continuous extent of these habitats. Animals able to move freely across long distances to find food, escape droughts and find safe haven from invasive predators.

At a time when land clearing rates in New South Wales are worsening, wildlife populations are already suffering, this proposal is indefensible. In my professional opinion, the cumulative impacts of the industrial scale land clearing required to supply feedstock for Redbank Power Station will push already marginal populations toward extinction. It will carve up one of the largest and most continuous semi-arid woodlands in the world, reducing connectivity, hastening soil loss, and hollowing out the heartland of so many threatened species. Far from sustainable, Verdant's proposal spells an ecological disaster for western New South Wales, and must be unilaterally rejected. Thank you.

PROF MENZIES: Our next speaker is Heather Keith, who's joining us by telephone. Heather, can you hear me?

MS HEATHER KEITH: Yes, thank you. And can you hear me?

PROF MENZIES: Yes, we hear you very well. Please go ahead.

MS KEITH: Thank you. I wish to explain some of the scientific concepts about carbon accounting in the use of woody biomass for energy. Burning biomass will always result in emissions of CO_2 into the atmosphere, and these must be counted as part of Australia's emissions reduction targets. The assumption made in the Redbank proposal that emissions of CO_2 from burning biomass have an emissions factor of zero, is false. These emissions were not included in the accounting because they are supposedly balanced by uptake of CO_2 by the biomass during its lifetime. In fact, the emissions from combustion of the biomass would be well over one million tonnes of CO_2 per year. Plus, there are foregone removals due to clearing the native vegetation.

The reason why these emissions must be counted relate to both the spatial and temporal context of the emissions. First, the spatial context. One; if the land is being

cleared for grazing, then the removal of trees and shrubs is a permanent loss of the carbon stock and there is no subsequent uptake of CO_2. If the biomass supply is considered as invasive native species that would be cleared anyway, then there is still a carbon stock deficit compared with the original natural woody vegetation. The correct level for comparison should be the original vegetation and its biomass, not no vegetation.

Three; if there is regrowth vegetation, then there will be slow carbon uptake over many decades. However, at a landscape scale where areas are cleared and regrow, there will always be a lower average carbon stock, and therefore a deficit that must be accounted for in the greenhouse gas accounting.

Second is the temporal context. The timing of emission removals is critical. The total emissions from burning woody biomass occur instantaneously. In contrast, the removals from slow regrowth take a long time. This time lag is critical, because the world needs to be reaching peak atmospheric CO_2 concentration and reducing emissions now, and not waiting for removals that may occur decades into the future. Relying on carbon removals in the future is only exacerbating the climate problem for the next generation.

Two; if the biomass supply is considered as waste that would have decomposed in the counterfactual, then these decomposition emissions would have occurred over a much longer time period than direct combustion. The stated greenhouse gas emissions for the Redbank proposal of about 20 tonnes of CO_2 per year, but this only includes non-CO_2 greenhouse gases and emissions from the use of fossil fuels. It does not count any of the emissions from biomass combustion.

The true climate impact of the proposed power station should be assessed by the greenhouse gas accounts for the whole system of the power station energy generation and its demand for biomass supply, and compare this with the existing state of the biomass stock in the current vegetation. The emissions from biomass removal and combustion need to be accounted in either the energy sector or the land sector, but it is not carbon neutral.

If the emissions are counted as carbon stock loss in the land sector, which is according to the UNFCCC Convention for National Greenhouse Gas Inventory reporting, then this still needs to be included in the greenhouse gas accounts for the power station operation as a whole. There are several problems of woody biomass that's proposed. One; clearing of native vegetation is harmful for biodiversity, soil health, water resources, and many other ecosystem services.

Two; creating a demand for a large source of biomass will incentivise further clearing. Three; the carbon loss from land clearing should be included in the greenhouse gas inventories for the value chain of all agricultural products from this land, and this should be reported in the purchasing company's Scope 3 emissions. Four; growing biofuel crops is problematic, because it is taking agricultural land away from food production.

In summary, burning biomass is not carbon neutral, should not be considered as a clean, renewable energy source. It is harmful to the climate and harmful to the environment from where the trees are cleared. So, use of bioenergy should not be considered in any energy strategy. Thank you.

PROF MENZIES: Thank you, Heather. Okay, our final speaker is Mark Jackson. Mark is representing Verdant Earth Technologies, and we've asked Mark to address some of the concerns that have been raised during the course of the day.

MR JACKSON: Thank you, Commissioners. And thank you to the audience that's remained right to the end of the day. I think on behalf of the Applicant, we really appreciate everyone's contributions here today. They have been very, very helpful. Not only for the Commission, but also for the Applicant itself to understand the broad range of issues which are currently being shared and discussed at the moment.

Look, it is challenging to summarise and respond to 38 individual presentations with a lot of information, data and statistics being shared. But I'd like to share maybe four points, Commissioners, that the Applicant would like to highlight to consider as a result of this public meeting.

I think the first one is a critical one. It's the impacts of non-compliance. This planning application is a fully compliant application consistent with all New South Wales and federal laws. Of course, if the Applicant goes ahead, sources fuels from unauthorised or unapproved sources, where potentially INS is sourced from areas of high conservation value, or where there's potential for significant environmental impacts, of course, there is going to be a detrimental effect, not only on air quality, but also biodiversity and potential land clearing impacts.

This proposal is fully compliant with the law and has been assessed in accordance with the law with all state government agencies, which have provided their general terms of approval and draft conditions of consent for the Commission to consider.

The draft conditions of consent also touch on a series of quite onerous compliance obligations on the Applicant. And I thought I'd just mention a few of those for the meeting today. So, there are very strict conditions of consent. An EPA licence is a condition of approval, and compliance with that at all times during the operating life of the proposal is mandatory.

There's continuous air monitoring and reporting required to ensure air quality is maintained. There is a detailed environmental management strategy which does need to be prepared as well. There's periodic independent environmental auditing by external experts in relation to the full compliance of the proposal in accordance with its consent conditions. There is a notification process for any non-compliance. There's annual compliance reporting to not only the Department of Planning, but also EPA as well.

There is a separate resource recovery order and exemption framework also required in terms of approval before any eligible waste fuels are potentially used as fuel for this

power station. EPA has regulatory oversight of that framework, and that is a critical pathway that the Applicant needs to go through still, post-approval, to seek those relevant approvals from EPA.

The second one relates to air quality. The Applicant has done a rigorous air quality impact assessment which has demonstrated that PM10 and PM2.5 will contribute less than 1% of dust emissions to the local environment and will be a very small contributor to overall air quality impacts. As a result, the human health risk assessment has found that the proposal will have a negligible impact on people and the local environment in terms of public health.

The third issue which has obviously taken quite a lot of focus today is where this biomass fuel is coming from, and also potential issues around sourcing INS, or invasive native scrub. I'd just like to highlight, for not only the meeting but also the Commissioners as well today, that only lawfully sourced biomass can be used under this proposal. And that's very strongly represented through all the application documents and the studies.

As I mentioned, there's a strict regulatory assessment process for using eligible waste fuels and sourcing INS from different locations as proposed. What's really important in terms of EPA's assessment of these biomass sources which would be used for electricity generation, is to ensure there's no higher order uses. Is there any higher order or greater environmental benefit of using these materials in different ways?

The Proponent is not proposing land clearing. Farmers have existing approvals for which it permits the appropriate clearing under strict controls, and only that material which is generated in full compliance with the law will ever be considered to be potentially used as a fuel type.

It's also important to note as well that some of these fuels, particularly INS, whilst they may comprise a significant portion of the fuel mix in the first couple of years, the Applicant's actually transitioning away to purpose-grown fuel crops which are going to be providing the dominant fraction of biomass to power the power station. A lot of the discussion here today has assumed that INS utilisation would be maintained throughout the whole life of the power station, which is just simply not correct.

Also, Commissioners, some of the statistics with regard to the amount of biomass source from lands generating INS have actually been quite low. So, through work the Applicant has done with landholders, sometimes there's more than three times the tonnes per hectare of INS available on these lands where existing approvals exist. So, therefore the amount of land requiring clearing, which is already approved, will be substantially lower than what's been discussed today.

And the fourth issue, Commissioners, I'd just like to briefly touch on and then wrap up, was greenhouse gases and climate change. It is acknowledged that under IPCC conventions, international law and Commonwealth law in this country, that the emissions of CO_2 from the combustion of biomass, when sustainably sourced, is accounted for as being a zero contributor to climate change. I know there's contrary

views in the community and internationally on that, but that is the law, and that's how our national carbon accounts are created.

The IPCC have also acknowledged that biomass has a legitimate and a critical role in making the transition to net zero. All that this proposal seeks to do is to help Australia do its little bit to get to that net zero target that most countries have agreed to be achieved by 2050. The proposal will also make a significant contribution to New South Wales government's net zero plan, and also our Commonwealth Government's net zero objectives by 2050. Thank you very much. That's all I had to say, Commissioners.

PROF MENZIES: Thank you very much, Mark.

MR JACKSON: Thank you.

PROF MENZIES: Okay, I'd like to just wrap up by quickly going through the things that we've heard during the course of the day as a Commission, not putting any particular weight on any of them, just noting them as things that we need to sit down, reflect on, do some more homework to understand, etc. And also noting that this is a list prepared by the panellists and the IPC staff. I've got a longer list here that I'm going to read out, because I want to spend some time just talking about a couple of them that stand out to me as particularly problematic, vexed, whatever.

So, we heard a lot about economics and jobs, and the unambiguous that there will be job creation during the construction and operation of this proposal, and that there'll be a diversification of employment opportunities in the region because of the proposal. Conversely, we heard that there is a limit to the amount of labour and talent that exists, and hence there's the risk that this proposal would take that labour, that talent away from doing other things, which could be building houses or other public infrastructure. It could be building alternative energy proposals. So, this really does represent a complex problem to think through.

Similarly, for energy, we heard all kinds of correct but nevertheless conflicting viewpoints that the project would provide baseload power and help to contribute to energy reliability, and that it will diversify New South Wales energy mix by including biomass as an energy source. And it has the advantage of repurposing idle infrastructure and hence is efficient and economically beneficial.

But equally, investment in this project may displace other sources of renewable power, perhaps rather than displacing coal generation. And that the repurposing of this particular piece of old infrastructure, that there could be other uses for the site which may align better to modern energy solutions.

Similarly, with the environmental impacts and land clearing, there are a range of ways of looking at this particular problem or opportunity. There is significant land clearing required to provide the amount of biomass that the station needs, at least in its first few years, with a transition to material grown specifically for the power station in later years. And it's very clear that the clearing of that vegetation represents an advantage to

the landholder, who's participating in an agricultural system and needs the grassland to feed their stock. And that as Professor Possingham indicated to us, the historical setting was that the landscape was more open, so it is returning the landscape to something more similar to what it's been in the past.

But equally, it's unambiguous that that will have an impact on biodiversity and particularly impact a number of endangered species which are using the regrowth vegetation as habitat, will also – the standing biomass represents sequestered carbon which if burnt will be released into the atmosphere. So once again, there's not a clear, single right way to go here.

And of course, with any land clearing, there's the risk of soil erosion and runoff and related degradation that may occur, just depending on how it's done, and the sequence of seasons following it.

We're also very aware of the potential for perverse outcomes. The risk that this creates a market for clearing, and we have clearing beyond what would be appropriate, or the correct level of clearing in that agricultural landscape. The Applicant's made it very clear that they will put in place processes to prevent illegal vegetation clearing ending up in their feed stream, and I think that's an important demarcation, because that's certainly a risk that's been put up just repeatedly during the course of the day.

We also heard about the air quality and human health risks, that there will be a cumulative impact on the already impacted environment around Singleton and that the existing poor air quality will be made, albeit only slightly worse, but will be made worse because of this additional infrastructure.

Similarly with traffic and transport, we're very aware of the benefits of the project being offset by some disadvantages. We are very sensitive to the idea that the Golden Highway is already heavily loaded with infrastructure development with the various other new energy developments that are taking place, and while the increase in the number of trucks is proportionately small, there's nevertheless a significant number of large trucks in addition that are going to be put onto that road.

The long distances that the biomass needs to be transported, once again in the early years of the project, are certainly something that's been raised repeatedly during the course of the day and that we are sensitive to and thinking about.

Finally, and perhaps most difficult to think through, the climate, the impact of timing of events on whether carbon's being re-sequestered, how long it's being re-sequestered – sorry, how long it's in the atmosphere before it's re-sequestered, the pressure on us as a human community to reduce our rate of emission quickly in order to meet the targets that we've got, and whether this proposal allows us to do that or not. That question of exactly how fast is carbon that we're taking out of biomass, burning, return to biomass is a key thing for us to think about in this particular problem.

So, that's a crude list of things that we've assembled and as I say, I present them to you in a way that doesn't place any value on them, just flags that we have heard about

them during the course of the day. We have to think about them and ultimately place a value on them in order to make a decision on this matter. But that will take us a lot more work than we've had time to do during the course of today.

I have a closing statement, which I will read in a moment, but I just wanted to say how difficult and at the same time enjoyable the discussion today has been. Difficult in the sense that we are left with a whole lot of things that we've been told, which we've been told truthfully and accurately, and yet are difficult to reconcile. Everyone's made really good and useful and data-rich. I was told that this had been a very data-rich day. It has been a very data-rich day. We have the problem of now reconciling all that.

I have particularly enjoyed the fact that those of you in the audience who clapped, clapped for everybody. One of my colleagues said that we're not running a vaudeville show. You don't clap for the people you like and boo at the people you don't like. I never felt through the course of today that that was happening. You recognised that everyone was making a contribution and thanked them for it. So, I thank you for that very civil behaviour.

If I can close by reading my formal statement, it starts with thank you. That brings us to the end of the public meeting into the restart of the Redbank Power Station, SSD-56284960. Thank you to everyone who's participated in this important process. Elizabeth Taylor, Alex O'Mara and I have appreciated your input.

Just a reminder that it's not too late to have your say on this application. Instructions on how to make a written submission can be found on the case page. This includes using the "make a submission" button on the case page, or via email or post. The deadline for written comments is 5 p.m. next Monday, the 18th of August.

In the interest of openness and transparency, we'll be making a full transcript of this public meeting available on our website in the next few days. At the time of determination, the Commission will publish its statement of reasons for decision, which will outline how the panel took the community's views into consideration as part of our decision-making process.

Finally, a quick thank you to my fellow Commissioners, Elizabeth, Alex. And thank you to those of you here in the room and those of you who are online watching. From all of us here at the Commission, enjoy the rest of your afternoon. Thank you.

THE MEETING CONCLUDED