New South Wales Government
Independent Planning Commission

TRANSCRIPT OF MEETING

RE: RESTART OF REDBANK POWER STATION (SSD-56284960)

APPLICANT MEETING

PANEL:	NEAL MENZIES (CHAIR) ALEX O'MARA ELIZABETH TAYLOR
OFFICE OF THE IPC:	JANE ANDERSON CALLUM FIRTH
APPLICANT REPRESENTATIVES:	RICHARD POOLE (Verdant Earth Technologies) MIKE HAYWOOD (Verdant Earth Technologies) COSTA TSIOLKAS (Verdant Earth Technologies) MARK JACKSON (JEP Environment & Planning)
LOCATION:	ZOOM VIDEOCONFERENCE
DATE:	10:15AM – 11:15AM WEDNESDAY, 30th JULY 2025

<THE MEETING COMMENCED

MR MARK JACKSON: Good morning.

MR NEAL MENZIES: Hello, Mark.

MR RICHARD POOLE: Hi guys, how are you going, I'm Richard Poole, the CEO of Verdant.

MR MENZIES: Richard, thanks for joining us.

MR COSTA TSIOLKAS: Hi, I'm Costa, the General Manager at the plant in the Redbank site.

MS JANE ANDERSON: I think we've got all attendees from the Applicant's side, commissioners.

MR MENZIES: Welcome to everyone. My name is Neal Menzies. Look, I've got a formal statement that I've got to read at the outset of this discussion. Once I get through that little piece of formality, we'll make it a much more open, general discussion. So, let me read through my prepared statement and then we'll move to a proper discussion with you.

So, before we begin, let me acknowledge that I'm speaking to you from the land of the Jagera and Turrbal peoples here in the Brisbane River Valley. And I acknowledge the traditional owners of all the lands on which we're meeting virtually today, and pay my respects to their Elders past and present and extend that respect to the entire Aboriginal and Torres Strait Islander communities.

Welcome to the meeting today to discuss the restart of the Redbank Power Station currently before the Commission for determine. The Applicant, you guys, Verdant Earth Technologies Limited, proposes to restart the existing Redbank Power Station with the use of up to 700,000 dry tonnes of biomass per year as fuel to generate electricity. The power station has capacity of up to 151 megawatts and it would operate 24 hours per day, 7 days a week.

My name is Neal Menzies, I am the Chair of this Commission Panel, and I am joined by my fellow commissioners, Alex O'Mara and Elizabeth Taylor. We're also joined by Jane Anderson and Callum Firth from the Office of the Planning Commission.

In the interests of openness and transparency and to ensure the full capture of information, today's meeting is being recorded, and a complete transcript will be produced and made available on the Commission's website. This meeting is one part of the Commission's consideration of this matter and will form one of several sources of information on which the Commission will base its determination.

It's important for the commissioners to ask questions of attendees and to clarify issues whenever it's considered appropriate. If you're asked a question and are not in a

position to answer, please feel free to take the question on notice and provide any additional information in writing, which we will then put up on our website.

I request that all members here today introduce themselves before speaking for the first time, and for all members to ensure that they do not speak over the top of each other, to ensure accuracy of the transcript.

Okay, so now we can begin our discussion.

MR JACKSON: Excellent, Commissioner Menzies. Thank you for that introduction. My name is Mark Jackson, I'm a Director of JEP Environment & Planning, and we've been very pleased to have led this State Significant Development planning application. So, Commissioner Menzies, what we thought we'd do is just do a little intro around the table in terms of the Proponent.

MR MENZIES: That'd be great, yes.

MR JACKSON: If that's okay, we have a briefing which addresses the IPC's agenda, and we've tried to align that as closely as possible as well with the agenda. So, just to kick things off. Mark Jackson, JEP Environment & Planning, we have led the planning application for this particular development.

I am joined here by Richard Poole, who is the CEO of Verdant Earth Technologies, Mike Haywood who is the General Manager of Feedstock Fuels and Sustainable Energy for Verdant Earth Technologies, and we also have Costa Tsiolkas who is the General Manager and Chief Engineer from Verdant Earth who actually surprised the build and the whole operation of Verdant or Verdant's plant of Redbank Power Station in the Hunter Valley. So, we're very pleased to have Costa here today.

So, Commissioner, if it's okay, I'll share a screen.

MR MENZIES: Yes.

MR JACKSON: And then we can get into the briefing, if that's okay.

MR MENZIES: That'll be great, Mark. And if you're happy for us to do so, we'll jump in with questions as things arise that we don't understand, want more depth on, whatever. Great.

MR JACKSON: Yes, absolutely. Look, we're more than happy to take questions from the commissioners during the presentation. It's, you know, always best to try and answer questions when you actually have them, rather than sort of leaving them all to the end. Very good. So, I'll just share a screen. The presentation should be coming through for everyone. Is everyone seeing that shared screen now?

MR MENZIES: It's up now, Mark.

MR JACKSON: Fantastic. Well, let's get straight into it. The first agenda item is providing, well, it's to provide an overview of the proposal. So, commissioners, we've assumed that you've had the joyful task of reading through the whole planning application, so we will assume the application is being – effectively, assumed to be as read.

However, in a broad sense, the proposal will involve the recommissioning and restart of the newest power station in the Hunter Valley, that originally commenced operations in 2001, operated through to 2014, and uses some of the most advanced combustion technology for utilising lower quality fuels, including coal tailings, which was the initial focus of the plant.

So, the plant's been in care and maintenance mode since 2014 due to the unavailability of coal tailings. A lot of that material had found markets overseas with other coal-fired power stations, so therefore local markets for this power station dried up.

So, this proposal very much focuses on the recommencement and recommissioning of the latest power station built in New South Wales, to utilise sustainably sourced biomass material as fuel to generate near net zero electricity to help decarbonise the New South Wales electricity market. So, it's the first major project of its type.

Verdant Earth acquired the power station in 2018, with the single focus to, as a business, to help decarbonise the electricity network in this state. So, as you mentioned, Commissioner Menzies, the proposal will use up to 700,000 tonnes of dry biomass which is sustainably sourced on an annual basis. The power station has a nominal electrical output of 151 megawatts.

The works will, or the proposal will involve the maintenance, repair and recommissioning of certain elements of the plant. And to enable some fairly minor adjustments to the fuel handling systems and on-site logistics to enable the power station to receive, store and utilise biomass fuels within the power station itself. So, that involves some minor adjustments to two conveyors, some alternate arrangements for fuel receival and storage, as well as, as I mentioned, some change to on-site logistics.

As I mentioned before, this power station utilises some of the latest technology involving circulating fluidised bed combustion technology. This particular plant has been designed, as I mentioned, to utilise lower quality fuels with variable moisture content fuel. The plant contains two boilers which can operate together or individually. So, the plant can actually be scaled up and scaled down depending on the amount of fuel available. It can either operate on two boilers, or it can operate on one boiler.

The particular technology used in this plant is used in numerous plants in Europe and USA and has supported the conversion of numerous coal-fired power stations to utilise sustainably sourced biomass to produce near net zero emissions electricity.

And it's really important to note in terms of the overall benefits of this proposal is really about reducing the intensity of carbon emissions through electricity generation.

So, the application as presented to the Commission has determined that up to 90% less carbon emissions are generated per megawatt hour of electricity, compared to the New South Wales average grid-supplied electricity circulating around the network. And that reflects the fact that biomass fuels are a sustainable and near net zero source of fuel compared to fossil fuels used in conventional coal-fired power stations.

As we've noted in the application, the proposal will play a critical role in meeting supply gaps which have been forecast particularly during the peak summer and winter periods. There is approximately 191-megawatt gap that the Australian Energy Market Operator has projected in 2025–26, and that gap will increase unless new grid firming power is provided into the market as a number of coal-fired power stations within New South Wales and around the country are decommissioned.

So, this proposal will provide 24/7 grid-firming power. It is a form of modern bioenergy which is recognised by the international – sorry, the Intergovernmental Panel on Climate Change and the International Energy Agency. It's provided a critical solution to the intermittent nature of solar and wind, and very much will play a complementary role in providing that baseload power and helps to decarbonise and move away from fossil fuels.

The proposal will obviously make a very important contribution to the New South Wales Government's Net Zero Plan 2020–2030 and obviously the Commonwealth Government's climate change objectives and net zero target by 2050 under the Climate Change Act.

Obviously, power stations employ a lot of people, so the recommissioning of this plant will generate significant jobs in the order of just over a thousand direct and indirect jobs during construction and operation. And it will contribute significantly to the regional economy as well. Just over $900 million in net present value over the first 25 years.

So, I'm not going to explain a whole lot about how the power plant is operated. We'll leave that to the site inspection and Costa's very good site tour he has planned for Monday. However, in a broad sense, this is an existing power station, of course. Spatially, the site occupies approximately a 10-hectare footprint. That footprint is not changing as a result of the proposal.

The spatial layout of the power station includes some raw water holding ponds and wastewater holding ponds which water is actually used to support the turbines and the cooling water system associated with the power station. It has a large water treatment plant to recycle this water and use that for cooling purposes. It has obviously two fluidised bed boilers. It has an advanced air pollution control system as well. And it has a series of conveyors which deliver fuel into the silos for feeding the boilers.

Now, the changes to the power station are relatively minor, as I did mention before. There is an existing fuel storage area at the rear of the site. Can everyone see my cursor when I'm …?

MR MENZIES: Yes.

MR JACKSON: Okay, great. Thank you. There will be an internal, some internal roads constructed to enable the efficient arrival of vehicles to drop off biomass onto these drive over unloaders, which will then stack the biomass fuel into a dedicated area and to enable the trucks to efficiently exit the site onto Long Point Road. There will be an incoming and outgoing weighbridge. There will be some minor stormwater and drainage works involved with the proposal to ensure runoff is sustainably treated and water quality targets are met.

MR MENZIES: So, Mark, just while we're on that one. The fuel storage, is there any treatment of the fuel that you need to homogenise material that's coming in, or dry it, you know, is there any need for consistency of feed stream that you're putting into the system?

MR JACKSON: Yes, it's a good question, Commissioner. So, the fuel strategy for the whole plant will be governed by the Quality Assurance and Quality Control Plan. So, only fuel meeting the specification can be delivered to the power station. So, that will involve only the receipt of fuels with the required particle size, moisture content and consistency. The biomass fuel stockpile will be turned over ever three days.

MR MENZIES: Okay.

MR JACKSON: Based on the rate of consumption. So, the fact is fuel arriving to specification, given it's only temporarily stored for a short period and utilised within the power station, will prevent any degradation in the fuel to ensure that effectively, you know, the plant is supplied with consistency quality fuel at all times.

MR MENZIES: And does that require some infrastructure off-site to do that prep? You know, how do you source that material?

MR JACKSON: Yes, absolutely.

MR MENZIES: And Mark, just to nuance my question. Because the application tells us, you know, there are various places. I'm asking the question of, between when it's being chopped down and piled up in the field, what needs to happen to make it that feed stream material for you?

MR JACKSON: Yes, yes, good question, Commissioner. So, the fuels we prepared at a range of sites, generally within 300 kilometres of the power station. Those fuel materials, depending on the source, will be stored on site, they'll be dried for up to six to eight weeks to reach the target moisture content. The subsamples of that fuel will be, or the un-shredded material, will be taken to determine that the ideal moisture content is achieved.

That material will be then shredded, sampled, tested to confirm compliance with the specification. And once that laboratory testing has been confirmed, then there's an

authorisation for that material to be picked up and collected, with the relevant test certificate, and delivered to the power station.

MR MENZIES: Thanks, Mark, that's exactly what I was looking for.

MR JACKSON: Okay, thank you.

MS ELIZABETH TAYLOR: I'm sorry, could I then have a couple of follow-up questions. So, you will be entering into agreements with these source suppliers regarding their obligations to do that work on your behalf? Or that'll be part of your contractual arrangement with them?

MR JACKSON: Commissioner Taylor, yes, good question. So, Verdant Earth propose to have supply contracts with growers and providers of the fuel. The company will also, well, they're planning to provide quite a lot of technical support to providers of fuel under contract. Because quality is critical, okay, so there will be on-ground quality assurance people that our client will hire and supervise and ensure compliance with conditions of contracts. Because ultimately, this power station will require fuel which complies with the specification to be provided at all times.

MS TAYLOR: Thank you. And my other question related to the turning over the biomass every [audio glitch] sort of any fire hazards arising from those activities are being addressed around the stockpile or that you are turning over?

MR JACKSON: Yes, so the fire hazards have been carefully assessed, Commissioner. So, a fire safety study has been done. There's a range of fire upgrades proposed around particularly the fuel stockpile area, there's a series of hydrants that need to be provided, as well as thermal detection of heat within that pile.

There's a series of conveyors which, I know it's a little bit unclear from this aerial photo on plan, but there's as series of sprinklers which need to be provided along the conveyor system to ensure that in the unlikely event of a fire, that there are those built-in engineered safety systems in place to ensure that this stockpile material can be safely managed at all times.

MS TAYLOR: And the dust suppression, similarly.

MR JACKSON: Correct. Correct, yes. Yes, the power station has in-built dust collection and suppression systems and there will be some enhancements, particularly with biomass to ensure that, you know, the risks associated with explosion hazards can be adequately controlled.

MS TAYLOR: Thank you.

MR JACKSON: Thank you. All right. Just moving on. We understand the energy context is a key area of focus of the commissioners, so we've got some slides prepared on this particular topic. And the first part of this topic is the Energy from Waste Policy.

So, as the commissioners are aware, the Energy from Waste Policy is an EPA policy document which guides the appropriate use of waste-derived fuels in New South Wales. This proposal fully complies with that policy statement. The policy applies to all facilities that thermally treat waste or waste-derived fuels for recovery of energy.

The proposal in the first three to four years will comprise a significant amount of eligible waste fuels. So, the eligible waste fuels are a category of fuel type under the policy which tend to pose a low risk of harm to human health and of the environment, and the environment, I should say, due to their origin, composition and consistency.

So, generally vegetation and material from agricultural sources are categorised as low risk. And because of that, EPA has a set of regulatory controls which do need to be met in relation to eligible waste fuels, and they're mapped out in the policy. However, before any of these materials or biomass sources can be used as fuel, the policy sets out a gateway framework that applicants need to work through. And one of those critical ones is that the applicant needs to demonstrate there's no practical or higher order reuse opportunities for the waste material.

An example of a higher order use opportunity may be utilisation of land clearing residues as a mulch for roadside batters, for soil erosion control. Or the retention of stubble on agricultural land for soil carbon improvements. So, that is what's referred to as higher order reuse opportunities.

So, the Applicant will need to demonstrate to the EPA that there's no practical opportunity, so therefore justifying the appropriateness of using that material for energy recovery. The material must be fully characterised as well as proof of performance in that particular energy application. And the emissions standards must be met in the Protection of the Environment Operations (Clean Air) Regulation 2022.

So, the application has outlined in detail how it complies with this policy framework. And what's also important as well is that the Applicant will need to apply for a specific resource recovery order and exemption from the EPA. And this is a post-approval process that the EPA has. So, there's a very comprehensive regulatory framework which will apply to the Applicant post-approval before any fuel is actually used from an eligible waste fuel source in the power station. They just can't go off and source any fuel. It needs to go through these approval processes still.

So, in terms of the eligible waste fuels to be used. The categories proposed are outlined here. The first category is invasive native species control on agricultural land, and we'll have a look at these in just a moment. Approved land clearing residues. Agricultural waste biomass. And the last category is referred to as end-of-life waste woody biomass manufactured to a specification. Now, this material is not defined as an eligible waste fuel at this point; however, the Applicant proposes to work with the EPA post-approval to potentially have this reclassified as an eligible waste fuel.

And we also note the EPA's issued conditions of approval supporting the proposed fuel strategy for the power station.

As I mentioned before, the Applicant will need to seek an approval from the EPA, and they'll have to demonstrate compliance with the POEO (Clean Air) Regulation to use these fuels. And they'll need an Order and Exemption approval as well. They'll need to also demonstrate that the power station has the ability to convert at least 25% of the energy in that fuel into electricity.

So, the power station investigations done to date have indicated at a conservative estimate, just over 27% of the heat energy will be captured as electricity from the power station – from the fuel, I should say, so therefore demonstrating compliance with the policy.

So, one of the other key areas that I think the Commission wants to have the Applicant explain a little bit further is the sourcing of the biomass, okay. And the sourcing of biomass was assessed in detail in the Fuel Supply Strategy and Characterisation Study in the EIS. And this was really important to determine how the power station was going to be provided with reliable, consistent and sustainable biomass to ensure continuous operations.

As I mentioned before, eligible waste fuels will comprise a large part of the fuel type in the first three to four years of the power station. But that will then decline, well, that will decline from year 1 as purpose-grown fuels or fuel crops will be utilised in the power station.

So, eligible waste fuels will comprise up to 93% of the fuel type in year 1, and that'll decline to 30% by year 5. So, the overall sourcing and fuel strategy will transition the power station from using eligible waste fuels to purpose-grown fuel crops, particularly within the Hunter Valley which is pretty exciting to see.

MR MENZIES: Mark, can I just stop you there to get this conversion fleshed out, so we understand what you're proposing. I'm asking about what's driving that change. So, is it that the plantations are going to be planted now and in four years' time they'll be ready? Or they're already planted and in four years they'll be mature enough? Or is it that the land clearing you will have used up what's available by that point? What's the logic for the change that's going to happen?

MR JACKSON: Yes, the logic, Commissioner, is very much driven by economics, okay. So, sourcing of particularly INS in the first few years is a way that the power station can scale up operations and be recommissioned in a relatively short period of time. The reality is, it's going to take a few years before these fuel crops can be established, and then the production system kick in to supply the power station.

The strategy here, of course, Commissioner, is to support the local production of fuels near the power station. So, the Hunter Valley has just over 100,000 hectares of land which will require rehabilitation over the coming years. And the existing significant land bank of land that's been disturbed through open cut coal mining, for which the coal mines are very excited to potentially convert those lands into this productive use,

which is a productive economic use. It'll produce fuels locally instead of being transported, you know, potentially up to 300 kilometres or more for the power station.

MR MENZIES: Excellent, Mark, that's – I understand. So, you're proposing to start new plantations and one of the potential target places to do that would be old, rehabilitated coal mining areas.

MR JACKSON: Correct.

MR MENZIES: Are there constraints around … Will there be new permissions that need to be sought or approvals for those coal mines to do this?

MR JACKSON: Commissioner, obviously it'll vary from site to site. Our coal mines have post-closure rehabilitation plans, which are approved by the State Government. Those post-closure plans set out the forms of land use proposed, you know, post the closure of coal mining.

A lot of those plans are generally based on returning the land to a productive use which is characteristic of a use prior to coal mining. Okay. So, land uses like, you know, intensive grazing, cropping, forestry, all those types of applications are very much what the mines are looking at to do to repurpose and rehabilitate these mines for the long term.

MR MENZIES: One final question. The timeframe, if you're planting things now, the picture you've chosen is probably a really good choice because that would be a tree at three or four or five years' old. Is that good feed stream material or, you know, to me, there's a lot of leaf there, there's not much wood yet.

MR JACKSON: Yes, correct. So, there's been a lot of research, Commissioner, with the Department of Primary Industries to look at the sort of optimising the production systems around these fuel crops. Obviously, leaf material is not suitable, so following harvesting, that leaf material would need to be removed.

MR MENZIES: Okay.

MR JACKSON: So, the investigations done by the Department of Primary Industries have found that these short rotation sort of woody crops which will be compost, which means part of the stem can be removed and the tree will grow up, so the whole steam does not have to be removed, can result in between 35 to 100 tonnes per hectare of wood suitable for use as fuel. So, these are quick growing, very productive species which will yield the required biomass to support the power station.

MR MENZIES: Yes. Once again, thanks for that clarification. I hadn't thought that it would be compost material so it would regrow further.

MR JACKSON: Absolutely, yes. Sorry, I'll just skip to the right slide.

MS TAYLOR: Sorry, could I just then do a follow-up question. How far along in the analysis of the feasibility of having those relationships in place with coal mines – I mean, how confident are you that it will give you the feedstock that you require, given the level of interest you've seen at this point?

MR JACKSON: Yes, that's a good question, Commissioner. So, the Applicant's been in discussions with coal mines and also surrounding landowners, particularly in the Hunter region. So, there's significant interest in wanting to collaborate with the Applicant in establishing these plantations.

The challenge the Applicant has, Commission, is that they don't have an approval yet, so they can't form contracts. So, you know, obviously following approval, the Applicant will be working hard to establish those relationships and contractual arrangements with growers. Because it has to be important to supply the fuel, increasingly over the next – well, three to four years, following commissioning.

MS TAYLOR: Thank you.

MR JACKSON: Okay, thanks for the question. All right. So, just moving on in terms of different fuel sources. So, as I mentioned before, invasive native species on agricultural land will be an important fuel source, particularly for the first three to four years of the operation.

This material will be sourced from landholders who have all the relevant approvals for the removal of these weeds from agricultural land, which is where permissions are required under the Local Land Services Act and the Native Vegetation Code. So, this code applies to all rural lands throughout New South Wales and determines how vegetation is to be removed and how much clearing is performed, and how that's actually performed on site.

So, the INS to be sourced as fuel for the power station will be material already removed by landholders under a relevant approval of Local Land Services. And it's only this material which at the moment is built in-situ as the management strategy – it's only that material which will be sourced for the power station.

And with the independent market research that's been done, it's been determined there's at least 1.5 million tonnes annually of this material potentially available as fuel. In year 1, the plant will require up to 500,000 tonnes of this material. So, there's significant availability and our client already has contracts for the supply of up to 500,000 tonnes of this material on an annual basis.

So, the second eligible waste fuel is biomass through approved land clearing activities. So, this material is obviously generated normally through civil infrastructure major projects – for example, freeway extensions and road widening. The investigations done to date indicate there's more than a 100,000 tonnes within the Central West, Greater Sydney, Hunter and Western areas with no higher order uses. Obviously, there are some markets for this material either on-site or off-site as mulch. However, in

many cases, where this material generated, there's no additional local markets, so often it's stockpiled or landfilled to remove it from the project site.

The third major type of biomass fuel under the eligible waste fuel category is agricultural waste biomass. Once again, market research has been performed, indicating that there's over 670,000 tonnes with no higher order use options in the Singleton – well, within 300 kilometres of the Singleton area. This material will be sourced from existing approved agricultural operations and includes a variety of straws, including wheat, oat, barley, maize, triticale and cotton. This material may be sourced after cropping where it's surplus to growers' needs in terms of soil carbon improvement. And the Applicant will work with agricultural growers to source that material where appropriate.

The fourth major category of eligible waste fuel that will be potentially used as a fuel, it's only a very minor component of the fuel source, is referred to as end-of-life waste woody biomass or domestic biomass. So, this is wood material recovered from construction, demolition and commercial sources, generally from waste materials. So, this material will be obviously recovered and diverted from landfill.

Market research done and presented in the application indicates that there's over 100,000 tonnes of this material with less than 5% physical contaminants, which may be potentially suitable. The Applicant recognises there is work to be done with EPA to be able to demonstrate this is a consistent high-quality fuel that can be made to specification. So, all of this application seeks to do is permit a pathway for potential using this material in future. If it doesn't materialise, it doesn't really impact the fuel strategy of the plant whatsoever.

In terms of long term, commissioners, as I mentioned before, the power station will be looking to power the plant principally from purpose-grown fuel crops to support the sustainable operation of the power station. As I mentioned before, those short rotation of woody crops as well as potentially annual crops and perennial grasses will be used to support the power station operations.

There's been quite a lot of research and development through the Department of Primary Industries, as I mentioned, to look at cropping systems, yields and management practices around the production and supply and development of a bioenergy industry in New South Wales. So, the Applicant is working very closely with DPI on that.

And as I mentioned before, there is significant land in the Hunter Valley that requires rehabilitation through open cut coal mining activities. And there's significant interest in utilising that land to help support this biomass fuel into the power station.

I'm not going to talk a lot to this figure, but effectively it's a summary chart, commissioners, outlining the projected fuel mix of the power station from year 1 through to year 6. So, the key point here to note is the orange part of the bar charts indicate INS as an eligible waste fuel, and you can see how that declines from year 6 onwards – oh sorry, from year 1 onwards actually. And you can see the purple, which

is the purpose-grown fuel crop, which will form the dominant mix within the biomass fuel into the power station from year 5 onwards.

The red line here is the fuel requirements for operating the power station on one boiler. Okay. As I mentioned before in my introduction, the power station has two boilers. It can operate only on one. So, if there's some major issues with the supply chain for biomass fuels into the power station, it can be tuned down to operate one boiler and that would be the biomass requirements on only one boiler operating.

Okay, so just moving on from fuel to now ash. So, I understand the commissioners just want a little bit more understanding of how ash will be managed for the power station. So, biomass fuels are relatively low in ash compared to coal tailings, on which the plant was originally commissioned and operated on. So, typically biomass contains 2–3% by ash content on a dry weight, compared to coal tailings which can be 25% plus.

So, the proposal will result in significantly less ash being produced compared to coal tailings. On an annual basis, that will involve about 42,500 tonnes per year, at a very conservative figure of 5% ash content within biomass. And it's most likely to be less than that.

The picture on the right shows the existing ash handling system which we'll see on site on Monday. So, this ash storage silo can contain three days' worth of ash from the proposed use of biomass. And you can see this little off-take down the bottom of the ash silo – that's where semi-trailers will be filled or B-doubles will be filled with ash.

That material will be tested for compliance with EPA's resource recovery order for ash from burning of biomass, which sets out strict quality requirements which governs the application of this ash to land potentially as a fertiliser. So, there will be a testing and validation program for all ash leaving the site, to ensure that this ash is sustainably used back on farms and lands used to produce fuels to provide nutrients to support soil improvement.

MR MENZIES: So, Mark, do you have an established market for that yet?

MR JACKSON: At the moment, Commissioner, no is the response. However, there has been interest displayed potentially in local landholders potentially utilising ash. There is significant demand from the existing power stations for their ash. So, we believe that at the end of the day, this is a relatively small amount of ash being produced. And the Applicant doesn't feel that there's going to be any particular issues in finding markets for this ash as a soil improver.

Okay. So, the third area we're going to touch on is just the environmental context. And apologies, so a little bit of content on these slides, I'm not going to talk to each and every point, but it's more for the purpose of the meeting and the transcript.

So, in terms of the environmental context, we understand commissioners wanted to understand a little bit more of how the proposal touches on ESD or ecologically

sustainable development. So, ESD underpins the planning and environmental protection regulatory framework in New South Wales and played a critical aspect in driving the factors considered in this particular application.

So, the application has considered the social, economic and environmental aspects of the proposal. So, ESD is typically defined under a series of five principles. And the first one is actually very, very important – it's precautionary principle which really deals with if there are threats of serious or irreversible environmental damage, the lack of full scientific certainty shouldn't be a reason for postponing measures to prevent that degradation.

So, this proposal is obviously driven by the energy transition which the country is on and trying to decarbonise the electricity network and displacing coal with more sustainable and renewable sources of power. So, this particular proposal will support through sound science and many projects of a similar type overseas which have demonstrated that using sustainable biomass fuels do contribute to near net zero emissions and will drive progress towards the Paris Agreement.

As I mentioned before, this particular plant will result in a 90% reduction in greenhouse gas intensity compared to existing electricity in the network through using sustainable biomass. And the application's demonstrated that the biomass sources are sustainable, will not result in deforestation or biodiversity loss, and will not impact on higher order uses.

The second aspect is intergenerational equity and this talks to the present generation should really ensure the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations. So, repurposing of this power station to be the first major near net zero electricity generator is a really important driver for decarbonising the electricity network and reducing fossil fuel use and reducing global warming as well.

Obviously, delaying action leads to additional fossil fuel emissions, which will impose an increase, an additional burden on future generations, which will make it even harder to undertake deep emission reductions across our economy. So, by transitioning an existing power station to utilise a fuel type which is near net zero, is a very effective way of maintaining and enhancing intergenerational equity.

So, the third principle talks to biological diversity and ecological integrity. And obviously, biodiversity is severely impacted by a number of factors, including climate change. So, this proposal will talk to having a direct contribution in reducing greenhouse gas emissions, reducing fossil fuel use, and therefore minimising long-term impacts on biodiversity and ecological integrity.

In terms of the fourth principle, improved valuation and pricing. The power station is a $700 million asset and can be repurposed very efficiently to produce that near net zero electricity that the country needs. It's a form of world-best practice technology, utilises cleaner production principles, and very little waste will be generated from the

operation itself, with the objective of recycling and reusing all ash generated by the process.

In terms of the environmental context, there are a couple of key impact categories we understand the commissioners wanted a little bit more information on. And particularly with power stations, look, air quality is one of those principal matters which does require very thorough investigation.

The application before the Commission has involved a very comprehensive Air Quality Impact Assessment and the proposal does meet all regulatory air quality criteria, and in fact it exceeds the Group 6 air emissions criteria, which are set out in the Clean Air Regulation in the Protection of Environment Operations (Clean Air) Reg 2020.

And it's also important to note New South Wales has some of the strictest air quality standards in the world. So, for a power station to be repurposed and actually meet these emission standards is a significant achievement, and it will ensure the ongoing enhanced air quality in the locality.

MR MENZIES: I'll stop you there for a question.

MR JACKSON: Sure, Commissioner.

MR MENZIES: How was this determined? So, have you looked at plants overseas and their performance? Now, your plant isn't currently running burning wood, so how do you know that you're going to be able to meet and exceed the requirements?

MR JACKSON: Yes, so our Air Quality Impact Assessment, Commissioner, involved what is referred to as the regulatory worst-case scenario using emission factors that's published by DCCEEW, Commonwealth Government Department. So, it's used emission factors that are based on international findings from similar facilities in relation to their air quality contributions in terms of emissions. So, the modelling has assumed that regulatory worst-case scenario to inform the overall assessment.

As part of the proposal, Commissioner, as well, EPA will require continuous air quality monitoring and compliance. So, the EPA have obviously put forward proposed conditions of approval and have set air emission limits. So, it's an obligation that the plant has to not only validate emissions during commissioning, that they'll have to demonstrate and have evidence of full compliance at all times.

And in relation to that Air Quality Management Plan, it will need to be prepared and implemented too, to ensure the facility has management systems in place to ensure compliance at all times. And as I mentioned before, the EPA have issued conditions of approval in relation to air quality as well.

In terms of local community, obviously human health is of critical importance. A Human Health Risk Assessment has been conducted by a firm called EnRisks, which

is one of the leading human health risk assessment firms in the country. And that included an assessment of human health, including acute inhalation risks, chronic risk from the operation of the plant, exposure to particulates, and also looked at individual exposure pathways and combined multiple pathways.

So, the investigation demonstrated that the application or the plant will have negligible impacts on human health. Rainwater quality for local residents, the closest residents, about 1.6 kilometres to the east, that was also investigated, which found that there'll be negligible impact on homeowners who are not connected to town water, that were using rainwater as drinking water.

New South Wales Health have obviously reviewed the application. All their requirements have been addressed comprehensively. There's a little Mosquito Management Plan for stagnant water on the site, which has been prepared. There's also an external service provider engaged to manage the cooling water system for the plant to ensure efficient operation at all times. And the plant is supplied with bottled drinking water for staff as well. So, human health has been comprehensively assessed.

The application obviously considered greenhouse gas emissions in detail as well. And the Intergovernmental Panel on Climate Change Sixth Assessment Report, as I mentioned before, has highlighted that modern bioenergy is and will play a critical role in the energy transition away from fossil fuels and it's a critical way of reducing CO_2 emissions.

In terms of the state contribution to emissions, the proposal will represent up to 0.02% of state-wide emissions by 2030. Increasing to 0.07% by 2050. And the Applicant will need to monitor and report their scope 1 and scope 3 emissions on an annual basis directly to State Government, and those emissions will need to be reviewed annually.

That chart on the right-hand side just shows the modelling from our lifecycle assessment which shows on the left-hand side the climate change impact of the plant when it was operating on coal tailings, compared to when the plant is operating on biomass. So, you can see a significant reduction on climate change contribution being made by the proposal.

The application's supported by a Climate Change Mitigation and Offset Plan. I'm not going to go into a huge amount of detail here. This plan has been prepared to address all the regulatory requirements of EPA in terms of delivering on the state's Climate Change Adaptation Plan.

The Applicant will review technology developments pretty much on a continuous basis and will look at further emission reduction measures where technically and commercially feasible to even drive down those small amount of emissions even further.

And importantly, commissioners, in terms of our greenhouse gas assessment, we haven't included the carbon sinks associated with purpose-grown fuel production. So, the root systems of this vegetation, through research, has found that they can be a

significant sink of carbon. So, the Applicant will be looking at that potentially post approval to get a better handle on whether that is further contributing to reducing emissions.

We've got a couple of slides, I know we're sort of …

MS ALEX O'MARA: Sorry, can I just ask you one question about your lifecycle assessment and the emissions, and it flags that, for example, introducing biofuels could be one way you could bring down your scope 1 and 3 emissions. I wondered if you'd considered that as an alternative to offsets.

MR JACKSON: Commissioner, in terms of other measures to reduce those emissions, the Applicant is looking at electrification options in terms of fuel preparation and maybe even transport options as they become available. There was a point in time where hydrogen for heavy vehicle transport seemed to be an option for a lot of industries; it looks like that option is no longer really being progressed by a lot of investors.

But obviously, there will be measures put in place to look at driving down those emissions from particularly scope 3 associated with transport and the fuel. And I think the purpose-grown fuel strategy as well will help further drive down emissions because fuels will be transported a much shorter distance to the power station, particularly when they come online in a significant way in year 4 and year 5.

MR MENZIES: Yes, a follow up one, Mark, on how detailed your assessment of your lifecycle are. So, you know, if you're removing crop residue, for example, the farmer will need to apply more nitrogen fertiliser; that's a carbon emission.

If you want to sustain a compost forest, you're going to have to fertilise that, because every time you remove your material you remove nitrogen, which is not replaced even if you're putting the ash back. So, do you capture those sorts of things?

MR JACKSON: Yes, I'd need to take that one on notice, Commissioner. Yes, I'm happy to get back to the IPC later on that particular matter. Look, fertiliser source is just one source of nitrogen, Commissioner.

MR MENZIES: Yes, and my question, that was an example, but, you know, I was really looking for the level of nuance you've tried to capture. So, Mark, take it as a more general ask of if you could provide us some information about the level of detail that you've gone to, you know, and I can see that assessed some of the small but potential positives, so I suspect that you haven't assessed some of the small but potential negatives as well. So, it's not a criticism, it's a, you know, just exactly how much faith can we have in the assessments that are made.

MR JACKSON: Yes, I understand, Commissioner. No problems, we're happy to provide that further information. Commissioner O'Mara, did you have any further questions?

MS O'MARA: No.

MR JACKSON: Okay, thank you. I'm just conscious of the time, commissioners. I've got a couple of slides in relation to off-site biodiversity impacts which was part of the agenda. I've already talked to some of these matters, but just in summary, in the first three to four years, obviously INS is a material or a biomass source which will be utilised more so before the transition to purpose-grown fuels.

So, there's been a significant research program looking at the environmental and biodiversity impacts of managing INS on agricultural lands. And that has involved collaboration for almost 20 years between the Department of Environment, Climate Change and Water, CSIRO, private sector specialists, industry investment, University of New England, and landholders. And that work from about 2006 led to the development of Best Practice Management Guidelines in the Central West and Western Regions that have been prepared, which guides Local Land Services in regulating the management of INS on rural lands.

INS is actually well-understood to, well, I should say the poor management of invasive native scrub actually has significant impacts not only on biodiversity but also soils as well. So, INS competes for resources, light, water and nutrients, which can reduce or exclude the growth of other plant species, particularly native perennial grasses. It can lead to impacts on soils such as crusting and hard setting. And the reduction in ground cover can increase soil erosion.

And the research has found that improved management of INS can improve bird diversity when those vegetation types were appropriately managed. As I mentioned previously in the presentation, the Applicant will not be harvesting INS itself, it will be accessing already approved harvested material by landholders for where there's no markets. That'll be done in accordance with the law and the approvals issued by Local Land Services to ensure the sustainable management of these activities.

The guidelines, the Native Vegetation Code quite clearly prohibit the removal of any vegetation from sensitive environments, including coastal wetlands, old growth forests, littoral forests, core koala habitat, and critically endangered communities.

The Applicant has outlined in its application is that the Applicant will confirm and document that the landholder has consulted Local Land Services regarding the planned removal of INS, and validation checks will be performed to ensure that that material has been sourced and prepared in accordance with best management practice.

Importantly, the Applicant will need to seek EPA approval of that material as well. And the research that has been done has demonstrated with the implementation of the Land Management Guidelines and obviously with these management mitigation measures that we've outlined, potential impacts to biodiversity will be managed or even negligible, or indeed in some cases positive.

In terms of other biodiversity impacts, in terms of approved infrastructure and land clearing. We've just put a couple of little dot-points here in relation to major projects.

Obviously, these major projects which will be targeted in terms of biomass sources, will be pre-approved projects where all the biodiversity investigations and relevant offsets have been achieved. And it's only the biomass following its removal will be targeted for potential use as fuel.

So, in terms of the biodiversity impacts of sourcing that traffic, all those matters would have already been addressed in the planning application itself. We've assessed biodiversity on-site as well.

MR MENZIES: So, Mark, I'm concerned about time. Let's skip through the biodiversity because I think we've got a good sense of that.

MR JACKSON: Yes. Excellent.

MR MENZIES: Perfect.

MR JACKSON: Okey-doke, thank you, Commissioner. Just a couple of minutes dealing with other matters. So, traffic – a traffic impact assessment has been done to support the application. The proposal will involve up to 56 truck deliveries on a daily basis. Up to 15 vehicles per hour will be accessing the power station dropping off fuel.

The traffic impact assessment has found that the impact on the Golden Highway and Long Point Road intersection, which is shown down here, which will be used to access the power station, will be minimal.

There is some minor roadwork required, which is sort of being developed in consultation with Transport for New South Wales. It's a small de-acceleration lane which will need to be provided. As well as some minor widening of the road shoulder on Long Point Road West to support the access for those vehicles into the power station.

Noise and vibration has been another matter which has been thoroughly addressed in the application. The proposal meets all EPA noise criteria on a 24/7 basis. Obviously, there will be noise additional through truck movements, and additional movements of plant equipment on site. For example, front-end loaders, bulk unloaders for fuel, conveyors and silo augers.

There will be a small noise barrier along the eastern side of the property which will need to be installed. And there will be a validation requirement during the commissioning phase to demonstrate the plant can continuously meet all those criteria as well.

Quite a bit of community consultation has been done, and this is the last matter, commissioners, I'm almost done. As part of the EIS process, 64 householders within 5 kilometres of the proposal were contacted, a fact sheet and a letter was provided, and a webinar was held for those landholders to ask questions and to raise any particular issues.

We also wrote to objectors of a previous application that the Applicant prepared, including supporters of the proposal as well. We've wrote to 40 different local and regional organisations as well to seek feedback from those, and we did receive some feedback, as well as local and regional community members too. And obviously, all government agencies as required were consulted too in preparing the application.

As we've mentioned in the application itself, the consultation program highlighted some community concern over potential impacts on air quality, road safety, and whether there were appropriate levels of biomass available to support the proposal. All these matters have been comprehensively addressed in the application.

The top two issues really focused on greenhouse gases and climate change and biodiversity. Those matters have been comprehensively addressed in the application as well. And the application has focused on being very, very clear that the proposal will not source native forestry residues from logging whatsoever as well.

As I mentioned, all those applications have been addressed in the application. The application also sets out ongoing community engagement activities with Council, residents and businesses. There will be a community complaints line established, which is a normal EPA licensing requirement, where any concerns can be raised directly with the Applicant.

There's a community consultation committee. There is one under the current consent and we envisage that will be maintained post approval, to provide that ongoing dialogue with the operator and to address issues as they arise over time.

There will be continuous environmental monitoring and live reporting in accordance with EPA requirements, particularly air quality, on the website. And there will be a local recruitment and training strategy and local content plan to ensure that local businesses benefit from this significant project in the Hunter Region too.

So, that pretty much wraps up the briefing, commissioners, and thank you for the additional time. But I think we've highlighted that this proposal in repurposing the Redbank Power Station …

MR MENZIES: Mark, let me stop you there because I know you're going to sum up and that, we don't need it. That's all fine. We've probably got some questions that we'd like to slip in, in the couple of minutes that we have left.

One of the things that I'm interested in. You're going to have a lot of – you need a lot of workers to deliver this project at the outset – it was about a thousand workers. And so, I'm interested in what work you've done to determine whether there's accommodation locally and whether there are people locally that you'd be able to give those jobs to.

MR JACKSON: Absolutely, commissioners. So, our social impact assessment study has actually looked at that in detail in terms of accommodation availability, the

capacity of the Hunter Region to support those local jobs, and new workers required to support the power station.

Obviously, there will be quite a large number of workers – I think it's just over 300 over approximately an eight-month period during construction on the various works that are required to the power station. Over time, those number of workers required will be reduce down to, I think it's about 174 permanent ongoing full-time jobs that will be created by the power station.

So, the social impact assessment's looked at housing availability as well as the ability of the Hunter to support the skills required for these jobs. As the commissioners are aware, the Hunter Valley is in transition. We have proposed closures of some of the biggest coal-fired power stations in the country scheduled within the next couple of years, with Eraring being proposed to be closed in 2027.

So, we have a significant workforce in the Hunter Valley where skills, knowledge and capability can be drawn upon to provide jobs, clean jobs for the future. So, there's a bit of work to do there, Commissioner, yes, absolutely.

MR MENZIES: Fellow commissioners, do we have last questions for Mark and the team?

MS TAYLOR: Not from me at the moment.

MR MENZIES: My fellow commissioners are being more disciplined about observing the timeframes we've got to operate in, Mark. I would ask questions for another hour, I think, as it's a really intriguing project that you're presenting to us.

MS TAYLOR: I'm assuming we'll have some opportunities on Monday.

MR MENZIES: Yes, we'll have a lot of time on Monday. And we really are looking forward to the site visit. Okay. Let me close by thanking you, Mark and the rest of the team for spending the time with us, and yes, we really are looking forward to touring the site on Monday and understanding … Those site visits completely change our mindsets often, that you can put all the parts together that you just can't from aerial photos, so we're looking forward to that one. Okay. Thank you very much.

MR JACKSON: Lovely. Thank you, commissioners.

>THE MEETING CONCLUDED