New South Wales Government
Independent Planning Commission

TRANSCRIPT OF MEETING

RE: MUSWELLBROOK SOLAR FARM (SSD-46543209)

PUBLIC MEETING

PANEL:	NEAL MENZIES (CHAIR) SUELLEN FITZGERALD MICHAEL WRIGHT
APPLICANT:	DARCY DENTON CARLA EVANS HELEN KENNEDY
COMMUNITY SPEAKERS:	CAROLYN EMMS (Rainforest Reserves) EDWARD FERNON (Brightlands Living Pty Ltd) KEVIN LOUGHREY KEN RUBELI STEVE FORDHAM (BlackRock Industries) DENNIS ARMSTRONG (Save Our Surroundings) IVAN KENNEDY STAN MOORE CAROL-ANN FLETCHER LYNETTE LABLACK (Save Our Surroundings Riverina)
DEPARTMENT OF PLANNING, HOUSING AND INFRASTRUCTURE:	IWAN DAVIES

LOCATION:	VIDEOCONFERENCE
DATE:	10:00AM – 12:00PM WEDNESDAY 12 FEBRUARY 2025

[Transcription started at 00:03:08]

PROFESSOR NEAL MENZIES: Good morning and welcome to the Independent Planning Commission's public meeting into the State Significant Development Application for the Muswellbrook Solar Farm (SSD 46543209).

I am speaking to you from Gadigal country. I acknowledge the traditional owners of all the countries from which we meet today. I pay my respects to their Elders, past and present, and to the Elders from other communities who may be joining us today.

I'm Neal Menzies, I'm the Chair of this Panel. Joining me are my fellow commissioners, Suellen Fitzgerald and Michael Wright. 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, on 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 site.

In making a decision in this case, the Commission must obey all of the relevant laws and consider all applicable policies and public interest. We're also obliged to consider public submissions, and that is the purpose of today. We want to hear what you think about the merits of this 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 may have already participated in the Department's processes. Thank you for your participation.

There's 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, recommendations and to 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.

While we'll endeavour to stick to our published schedule, this will be dependent on registered speakers being ready to present at their allocated time. I will

introduce each speaker when it's their turn to present to the panel. Everyone has been advised in advance of how long to speak. A bell will sound when a speaker has one minute remaining. A second bell will sound when a 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-by-case basis by me, as Panel Chair. However, in the interest 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 could provide a copy to the Commission. Please note 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.

Firstly, we will hear from the applicant. At the conclusion of the public meeting, we'll hear from the Department of Planning, Housing and Infrastructure, and the applicant, to answer any questions or respond to any issues raised during the public meeting.

So now we can begin to hear the submissions for today. Our first presenter is the applicant, and I'm hoping we're going to them quite readily. Oh, okay. Catherine, welcome. I cannot hear you at the moment.

MS CARLA EVANS: Okay …

PROF MENZIES: I can hear you now, Catherine. It might have been our problem, not yours.

MS EVANS: So, you can hear us – it's Carla Evans here?

PROF MENZIES: Carla, I can hear you perfectly, and we can see you. Yes.

MS EVANS: Great. Wonderful. Good morning. My name is Carla Evans, I'm the Senior Development Manager at OX2. I have been working on the Muswellbrook Solar Farm Project for the last three years. The Muswellbrook Solar Farm is a joint venture between OX2 and Idemitsu.

Now, onto the next slide please.

MS HELEN KENNEDY: We're not able to share some slides coming through that presentation.

MS EVANS: Oh, okay. Just checking, having a couple of technical difficulties here.

PROF MENZIES: Carla, I assure you we can see your slides, so please go ahead.

MS EVANS: I just wanted to do some acknowledgements. So, firstly, I'd like to

acknowledge that the project is located within the traditional lands of the Wonnarua people. We wish to acknowledge them as traditional custodians of the land and pay our respects to Aboriginal and Torres Strait Islander people past and present. We acknowledge their continuous connection to country.

I will now just provide an overview of the project. Thank you. So, we propose to develop a 135-megawatt AC solar project and 135-megawatt AC battery with up to 2 hours of storage. The development footprint is 318 hectares and is located adjacent to the Muswellbrook Coal Mine on land primarily owned by Idemitsu.

The project would create up to 200 jobs during the peak construction period and 9 operational jobs. The project involves community benefit funding, which my colleague will provide some further details on shortly. The project will play an important part in achieving the objectives of the Hunter-Central Coast Renewable Energy Zone by contributing to the continued growth of renewable energy generation and storage capacity.

Importantly, there is existing capacity in this part of the grid, as demonstrated by the project having received an offer to connect from Ausgrid, the network operator. It would also support the Commonwealth and the State governments in achieving their respective renewable energy and greenhouse gas emission reduction targets.

Furthermore, this project is a leading example of the transition of the Upper Hunter from coal mining to innovative post-mining land uses.

And I will now move to the next slide, if possible. Thank you. So, as requested by the Commission, I'd now like to provide an overview of the key project refinements that have been made as a result of the submissions received by the Department during their exhibition period.

So, following submission of the EIS, the development footprint was reduced to avoid an additional 5.5 hectares of Box Gum Woodland. The retaining Box Gum Woodland is located along Muscle Creek, the Mine Access Road and 4th Order Stream which transects the site. This will increase connectivity and provide additional visual screening.

The biodiversity credits that have been calculated for the impacts to Box Gum Woodland in accordance with the Biodiversity Assessment Method. However, in addition to retirement of these credits, the project will protect and restore an additional 33 hectares of Box Gum Woodland along the 4th Order Creek.

During the EIS, a tree was sensitively identified as a culturally modified tree. Subsequently, a horticulturist and members of the registered Aboriginal party groups confirmed that the tree was culturally modified and we have adjusted the development footprint to avoid this tree.

Furthermore, additional traffic management and mitigation measures have been

agreed with the Department and Transport for New South Wales to minimise the potential for conflict at the New England and Sandy Creek Road intersection. And these are included in the recommended conditions of consent.

Since the EIS, we have finalised the terms of the Voluntary Planning Agreement with Muswellbrook Shire Council, which includes community benefit sharing. And I'll now handover to my colleague, Helen, to provide some further details on community benefits.

MS KENNEDY: Thanks, Carla. Good morning. My name is Helen Kennedy, I'm the Community and Stakeholder Manager at OX2 Australia. If you could just move along to the next slide, please. Thank you.

OX2 acknowledges the importance of early and transparent engagement with the communities and stakeholders throughout our projects. For Muswellbrook, we've aimed to implement an engagement approach that aligns with the relevant State Significant Development Guidelines, and the new Renewable Energy Benefits Sharing Guidelines.

Engagement began in early 2022 as the project was introduced to stakeholders and the wider community. Since then, regular communication has taken place, along with several community information sessions to provide further information and receive feedback and questions. As a result of these questions, a response to questions document was provided to near neighbours and also made available online.

A number of face-to-face meetings have taken place with neighbouring property owners, at their request. In total, seven face-to-face meetings with neighbours have occurred. And the feedback that has been provided from neighbouring properties has fed directly into the development of the Voluntary Planning Agreement with Muswellbrook Shire council.

If we can just move onto the next slide, thank you. If approved, the project would like to further explore partnerships with local businesses and training providers to create local training and employment opportunities. The project would generate direct and indirect benefits to the local community in terms of 200 construction workers during the peak period, and 9 operational workers, expenditure on accommodation and businesses in the local economy by those workers who would reside in the area.

OX2 have been actively engaging with a local Aboriginal business, BlackRock Industries, since the introduction of the project. We've also joined the Chamber of Commerce to foster greater connections with the business network. And have recently become involved with the Second Chance for Change Program steering committee through BlackRock Industries.

And if we could move to the last slide. So, the community benefit sharing program has been developed by listening to members of the community and working with

Muswellbrook Shire Council. So, this consists of a monetary payment of $850 per megawatt installed paid annually. Those instalments have been split between different segments to allow us to achieve the outcomes required in the new Community Benefit Sharing Guidelines.

So, the VPA was developed from direct feedback from neighbours, consultation with Council, and the new Benefit Sharing Guidelines. The Neighbour Benefit Fund, which forms part of the community benefit sharing program, involves a rate rebate to a number of properties that are within a distance of 1.2 kilometres from the project boundary. This distance was chosen to provide a benefit directly to those properties that may have a view of the project, albeit when assessed, that view was low or very low.

If the project is approved, OX2 remains committed to ongoing engagement with the local community and stakeholders throughout its construction and operation. Thank you.

PROF MENZIES: Carla, does that conclude your presentation as a group?

MS EVANS: Yes.

PROF MENZIES: Excellent, okay, thank you Carla and thank you Helen. Fellow commissioners, do we have any questions? No. Just noting for the community watching, we commissioners visited the site on Monday, and the surrounds, and had the opportunity to look at the communities that were being most impacted, and to look at the proposed site for this development.

Okay, we move on now to a presentation by Carolyn Emms. Carolyn, when you're ready, please go ahead.

MS CAROLYN EMMS: Yes, thank you. Okay. Well, look, we've already – we have made a submission regarding the Muswellbrook Solar and Electricity Project. I don't have long so I'll sort of try and get to the point.

The EIS claims that the proposal won't have any permanent negative impacts on agricultural reserves, resources or enterprises. We believe it's greenwashing. Let's just talk about impacts for a minute, but it is a global issue of concern.

The industrial land use proposal threatens insects on a scale that actually poses an unacceptable risk to agriculture and biodiversity. So, we've got sufficient food production for a growing human population, that has also become an issue. When we look at insects, they're good dispersers and exploiters of virtually all types of organic matter. They can be found everywhere, forming an important part of every ecosystem.

Research dating back to 2010 has found solar panels have a mesmerising, lethal attraction to certain aquatic species. This also includes birds, bats, so insects, birds, bats, they hover…. from surfaces, including solar panels and non-polarising

surfaces. So, look, you've actually got some pretty cumulative impacts that haven't been really addressed. We will – I mean, I hope we have time to talk about who's going to clean up the industrial wasteland when it's all over. Because the companies always just on-sell. Now, you've got Brookfield, which is a global corporation, of which Vanguard, Nature Shareholders, they're just – they've now bought now. So, they just on-sell, so our country, our beautiful country is being exploited and they're actually injuring and killing our wildlife. We have huge evidence to support this. Now we've got involved in two court cases.

So, we've got the impact in the Box Gum Woodland, the Eucalypt forests, we've got the critically endangered regent honeyeater, the grey-headed fox, striped legless lizard, swift parrots, koalas, spotted-tail. I mean, they cannot live with all this industry. It's a terrible thing, what's happening now to our country. There is a better way and that hasn't been addressed.

And it appears that there's just a huge wealth transfer at the expense of the Australian national interest, our national security, biosecurity, and the future wasteland still can't be addressed. So, even if we consider CO_2 and ignore all other greenhouse gases, we can't ignore the toxins, the plastics and the waste products. We can't ignore the loss of pollinators, insects, biodiversity, clean freshwater, clean air, and a stable climate. So, we've got a drying-out effect. It's very hard getting everything out in five minutes, but the CO_2 level of the atmosphere is now rising rapidly.

PROF MENZIES: Carolyn, you've done a very good job in your five minutes of getting across your concerns about impacts on the insects and hence agriculture and on the natural environment, and issues with cleanup. I wondered whether there was any additional submission you wanted to make to us.

MS EMMS: Yes, I would, I would.

PROF MENZIES: We have your original submission.

MS EMMS: Yes.

PROF MENZIES: And let me take this opportunity just to stress once again, conditions that might help us to avoid some of those problems if we do decide to approve this project, are certainly very welcome as well as your expression of concern about what it might do.

MS EMMS: Yes. Thank you. And can I ask a quick question? Are they applying for subsidy? Because this industry is run on subsidy.

PROF MENZIES: That's not a matter that the Commission is considering, Caroly, so …

MS EMMS: Okay. And we do have a common need to consider. Okay, no worries.

PROF MENZIES: We need to move on. Thank you.

MS EMMS: Thank you.

PROF MENZIES: Our next speaker is Edward Fernon. Edward, are you ready to go?

MR EDWARD FERNON: Yes, I am.

PROF MENZIES: Then fire away.

MR FERNON: How are you? My name is Edward Fernon, I'm the director of Brightlands Living. I'm also the director and shareholder of Green Timber Technology, which is the largest prefabricated home building business in New South Wales. We're set up in Orange and have the capacity to deliver 2,500 homes per annum.

Today I'm not talking about the project itself, I'm talking about accommodation and the long-term benefits that this project will have for accommodation, and that is really what I'm proposing to talk about.

So, we're currently the largest accommodation provider in the Muswellbrook area. We've also got significant developments happening around regional New South Wales. This project is quite different and probably as many know, renewable projects are difficult for accommodation. In that, they bring a huge number of people into an area for a short amount of time, typically a two-year build, and then they leave and move onto a next project.

So, in many cases they're building camps, they're coming in and spending a lot of money building camps. But this is quite different where we're developing 624 homes in Muswellbrook. We've got the strong support of Council and the Mayor, Jeff Drayton. And what we are doing is building permanent housing. At OX2, we've got an agreement for them to lease at quite significant market rates, quite significant to-market rates, 28 of these homes. And these homes, once they're built and OX2 is finished with them, then they're going to be available on the open market providing more housing stock.

The issue with Muswellbrook, coming to is … One of the largest issues, and at the recent Chamber of Commerce events, the number one issue in the area was housing. The vacancy rate is consistently between 0.4% and 0.6%. There's a large number of FIFO workers for the mines coming in. In the last census period, 4,000 new workers were created and new jobs were created in the area, but the population only increased by 352.

So, what the Council and ourselves are really focused on is building Muswellbrook. And as we transition away from coal into renewables, not only projects like this will be new projects that Muswellbrook and the town can use and

create employment, but more so creating a legacy for the town, people living in the town, raising their families, building/increasing disposable income into the businesses. So, the fact that OX2 has committed to the agreement to lease these, a long-term basis helps us move forward with building these houses and then able to leave that long-term legacy for the town of Muswellbrook.

PROF MENZIES: Okay, Edward, thank you very much. It's great to have a different facet to the problem raised. Certainly, accommodation was something that came up in our discussion as a Commission with the Council and with the applicant. So, really good to hear your analysis of the situation and how your company could be involved.

Commissioners, any questions for Edward?

MS SUELLEN FITZGERALD: No.

PROF MENZIES: Okay. Let's move on. Our next presentation is from Kevin Loughrey. Kevin, are you set to go? Kevin, over to you. Kevin, at this point, we can't hear you but we can see – your name's up on our screen, so we're connected to you.

MR KEVIN LOUGHREY: Yes, yes.

PROF MENZIES: Okay, we've got you now. Yes.

MR LOUGHREY: Excellent. Okay, can you show my presentation please? Slide 1, the role of the IPCN.

PROF MENZIES: Yes, we can see your presentation, Kevin.

MR LOUGHREY: Excellent. The role of the IPCN or the Independent Planning Commission of New South Wales is to determine if projects being carried out by the government are in the public interest. The point of the IPCN being independent is so that it will not be pressured by the political influence exerted by the government in its decisions.

Slide 2 please. The justification for implementing wind and solar systems is broadly twofold. Firstly, it's to reduce CO_2 emissions on the pretext that it will reduce global warming. That is to say that CO_2 appreciably affects the temperature of the Earth's atmosphere. Electricity supply systems based on wind and solar will produce cheaper electricity than those based on coal-fired generators. That is the second justification.

Move to slide 3. My opinion is that the IPCN is delinquent in the discharge of its responsibilities to the public in that those involved in the implementation of these projects have not been compelled to commit to a meaningful performance specification, which would prove that these systems are indeed cheaper than those which are based upon coal. The cost of these projects far exceeds any benefit that

they may confer upon the public.

Slide 4 please. We'll deal with the first justification – that is, the reduction of CO_2. The amount of CO_2 emitted to create and install wind and solar systems is far more than they will ever save. For 8,000 years, Earth has been cooling. It has been much warmer in the past. The suggestion that CO_2 somehow magically warms the Earth's atmosphere is totally fallacious. As someone who has studied thermodynamics to fourth year university level with honours, I'm assuring you that there is no way within the laws of thermodynamics that CO_2 can appreciably the warm's atmosphere.

In this opinion, I am joined with Professor Will Happer, who is a friend of mine and with whom I've spoken to extensively. Professor Richard Lindzen and Professor John Clauser, not to mention Professor Willie Soon and Vladimir – sorry, my apologies, Professor Valentina Zharkova, and the list goes on.

This is one huge scam. Here is archival data, PMG written data, and data from the BOM showing that from 1880 to the present day, the temperature trend has been downwards. Did the IPCN check this?

This business of justification number two, that cheaper electricity will be derived from wind and solar systems. This is the cost of electricity compared to CPI, with the gradual introduction of intermittent power producers. As somebody who studied power engineering in Year 2, we all know that if you inject intermittent power into a grid, you will destroy the efficiency of the grid. Did the IPCN check this?

This further reinforces what I'm talking about. The green line is the volume of intermittent power being injected into the grid. The red line is the cost of the electricity. You can see that there's a strong cause and correlation here.

The absence of a meaningful performance specification. The purpose of any electricity supply system is to reliably provide cheap, abundant electricity without subsidy. A meaningful specification would state that a system would provide electricity at X cents per kilowatt hour with a confidence level of supply satisfying demand at Y. For a system typically based on brown coal, this performance specification is 3 cents approximately per kilowatt hour, with a confidence level of supply satisfying demand at [unintelligible 00:33:09]. What is the performance specification of these wind and solar systems? Has the IPCN checked probity?

Did the IPCN check if CO_2 actually causes warming of the atmosphere, that wind and solar systems will reduce CO_2 emissions, that wind and solar produce the most reliable electricity, and whether the suppliers of these systems have committed to a performance specification that would substantiate the core justification for these systems? I suspect the answer to this is these preceding questions is no, and I can only conclude therefore that the IPCN is not acting in the best interests of the people of New South Wales.

On the basis of what I have shown you, to do your duty to the people of New South Wales, you must stop all of these projects until there is a guaranteed relative performance commitment from the system suppliers that would justify the billions of dollars that are being spent.

Do you have any questions?

PROF MENZIES: Thank you for your presentation, Kevin. Questions? Sorry, I've just been speaking without my microphone on. Kevin, thank you for your presentation. My fellow commissioners don't have questions, but I wanted to acknowledge that you've sent us a great submission with all the datasets you're speaking to included, so thank you very much for that.

MR LOUGHREY: Thank you.

PROF MENZIES: Our next speaker is Ken Rubeli. Ken, if you are online, over to you.

MR KEN RUBELI: Good morning, Commissioner.

PROF MENZIES: Good morning, Ken. We can hear you and we can see you.

MR RUBELI: Social licence is the issue, and I'm here because I [unintelligible 00:35:13] not just around Muswellbrook but around the country and indeed around the world.

After 30 years [unintelligible 00:35:19] an appreciation of nature and sustainable living. My training is as a forester and yes, I do have a formal degree. My instinctive reaction to a solar farm is [unintelligible 00:35:44] countries around the world.

Philosophically, I feel it is our civic duty as [unintelligible 00:36:00] accommodate this change to renewable energy [unintelligible 00:36:06] children and grandchildren, it's their future [unintelligible 00:36:09]. But perhaps not in my backyard. [Unintelligible 00:36:18] at the end of the day, that will be the crux of the matter.

My reading on the Department of Planning's State Significant Assessment Report, December 2024, 116 pages, I think they've been very thorough indeed in setting out considerations, especially with biodiversity and with visual impacts.

I've also read [unintelligible 00:36:43] concerns about [unintelligible]. To a large degree, I think these concerns can [unintelligible 00:36:52] perhaps a failure to adequately address the visual imposition of such a large solar project on some residents living in the vicinity.

Last week I walked on the land that will be utilised in the development of the solar farm, and I visited the Woodland Ridge Estate, Woodland Ridge Road and

Babbler Crescent. And I spoke to a resident there who feels impacted by in particular the visual impact of the project. And I understand, I think, their point of view. Point of view is key here.

The Department of Planning has within it, a biodiversity conservation and science directorate, and this directorate in the solar farm report on page [unintelligible 00:37:43] in regards to the loss of Box Gum Woodland, the solar farm proponent has [unintelligible 00:37:49] to undertake restorative planting. I note some protection and restoration …

PROF MENZIES: Ken, can I interrupt you there just for a moment? We at points are losing your voice. Could you speak a bit closer to the microphone or a little bit louder, because we don't want to miss anything in your presentation?

MR RUBELI: Let's come back to this point of view. My guess is that the residents of maybe 25 houses in the Woodland Ridge development will have their point of view looking to the north of their land impacted in some measure, once this development goes in.

Here's the key. My feeling is that affected Woodland Ridge property owners can maintain or enhance their property values by planting trees on their land now. I believe [unintelligible 00:38:48] helping them in some way by employing, for instance, a landscape designer to assist each of those concerned property owners in the strategic location on their acreage of clumped small or larger suitable tree or shrub planting. These in time will help screen those owners' particular point of view from where they might otherwise see the former way. Screen planting and greening of the housing development at the same time as residents are [unintelligible 00:39:23] renewable energy and living their lives.

Psychologically, this then is not residents with their back to the wall, it's residents leading the way to a beautification of the land we live in. So it's not a step back, it could be viewed as an opportunity.

Let this be a win-win, and then the goodwill of the Woodland Ridge community [unintelligible 00:39:50] garden, culture, trees, shrubs, birds, shade, [unintelligible], there's beauty outside the window. And plenty of goodwill [unintelligible 00:40:00] future for the grandchildren of all of us.

PROF MENZIES: Thank you very much, Ken. We were struggling with you at the start of your presentation, but you were very clear for your main message, so we got that through. I also have a written submission from Ken. Thank you very much, Ken. If there are suggestions that you wanted to provide to us for inclusion as potential conditions, that would be great. But we certainly logged your suggestion that tree plantings would be a means of addressing the visual impact of the development, and also that OX2 may have a role in helping people with landscape design. So, thank you very much for that presentation.

MR RUBELI: Thank you.

PROF MENZIES: Commissioners, are we good? Okay. At this point, we move onto a presentation by Ali Cairns. Ali, if you're on … No, I've got it wrong. Okay. I'm sorry. We're moving onto a presentation by Dennis Armstrong.

MR DENNIS ARMSTRONG: Hello?

PROF MENZIES: Dennis, we hear you loud and clear.

MR ARMSTRONG: Oh, that's good. Okay. Hang on, I'm getting feedback. Anyway. Good day, commissioners. If I may ask the Chair, I need seven and a half minutes to do this presentation. Is that okay?

PROF MENZIES: No, Dennis. We are limiting speakers to five minutes, so please stick to the main points.

MR ARMSTRONG: That's what I'm doing. Okay. Well, good day, commissioners. SOS has many concerns with the Department's assessment of the Muswellbrook solar and BESS works.

For instance, one, reporting of Scope 1, 2 and 3 emissions were legislated in January 2025, yet they were found as not even disclosed how the project offsets the stressed embedded emissions which we know will be substantial.

Two, misleading of inconsistent statements, such as project life, the ability to service 54,000 households, construction workers numbers, justification for destruction of Box Gum species, post-agreement responsibilities, no toxic smoke consideration, all public liability insurance for host and neighbours is impractical, and no validation against similar projects.

Three, overstating financial benefits by ignoring the taxpayer subsidies and ever-rising electricity cost to consumers associated with the project.

Four, unachievable sustainability is ignored.

Five, toxicity risk to nearby residents and others is understated and ignored.

Cumulative impacts, six. Cumulative impacts are understated and/or ignored.

I just wish to touch on three of these. Sustainability, toxic contamination, and cumulative effects.

Sustainability. The United States Department of Energy quad reading review table 10 shows materials throughput by type of energy source. The mass of materials in tonnes per kilowatt (sorry) kilowatt hour for just the solar works component is many times that of other types of electricity generation. Understandable when the solar works is idled around 75% of its lifetime.

Using Australian data, SOS has calculated that solar works, excluding a BESS and other components, require up to 6.8 times more tonnes of materials per megawatt-hour of lifetime generation. Our result is consistent with that of the DOE, and we use project-specific data obtained from manufacturers, project proponents, government agencies and verifiable research.

As the Victorian Government's Sustainability Department states in January 2025, one, an estimated more than 100,000 tonnes of solar panels will enter the waste stream by 2035, which can leach into the soil and groundwater, causing environmental contamination and safety concerns. This is the fastest growing waste in Australia and no current solution to dealing with it.

Two, the average lifespan of a solar panel is approximately 21 years, and recycling options are limited. Three, despite the number of recycling plants in Australia, up to 17% of panel by weight is recycled or reclaimed. The remaining 83% of a solar panel's materials, including glass, silicon, polymer-backed sheeting is not currently recyclable in Australia.

This is not all that's not sustainable. The BESS materials and lack of recycling of batteries is a further waste of resources compared to the less material-intensive methods of electricity generation. Sustainability of Victoria states that (quote), "The most common battery storage for solar and lead-acid and lithium-ion batteries which last between 5 and 15 years," (end of quote). For the Muswellbrook BESS, that is about 1,500 tonnes of lithium-ion batteries that are disposed of every 10 years. Little recycling of these batteries currently occurs. Clearly, the Muswellbrook solar works and components are not the sustainable source of energy generation as claimed.

Next topic. Toxic contamination. The Department claims that the PVC solar panels, of which there are many types, are safe and less ground in a powder. There was a great deal of research and evidence that this is not the case. The Victorian Government and the European Union declare that all solar panels as e-waste because of their toxicity. Solar panel toxicity is fact, not a renewable scepticism.

Damage to a solar panel and toxic danger can occur at any stage of its life. We have already had B-double trucks loaded with thousands of solar panels rollover in the Hunter region. We have had 18 hectares of solar panels damaged by fire at Beryl solar works in 2023. In-situ solar panels in Australia have been widely damaged by hail, wind and fire. Burning panels, inverters and batteries give off highly toxic smoke. With in mind batteries burn for days and the toxic smoke has already caused large-scale evacuations, injuries, water and soil contamination.

The two BESS fires, 10,000 lithium battery fires across Australia and a lithium mine fire in WA. These examples highlight how dangerous and unpredictable these fires can be. This and nearby projects are located in a fire prone zone and only a short distance from housing estates. People with water tanks are particularly at risk. The assumption that such risk can be ignored shows little regard to the safety and wellbeing of the people and animals.

Cumulative impacts. I'll skip the cumulative impacts, but they are several and worth talking about.

I'll go to conclusion. May I conclude by asking the Commission to impose conditions that address some of the risks of this project. Namely, one, an index bond be lodged upfront to provide for any future end-of-life activities, including disposal. Two, widespread soil testing of the toxic components of solar panels and batteries, including nano-formed materials, be done prior to installation, again when any panels or BESS components are damaged, and every three years regardless.

Three, the site is protected by a boundary sprinkler system strategically located and pressurised fire hydrants and safety structures. Four, the VPA with the Council be increased to reflect the DA lodgement so you're 1% of the capital value, not the under 50% on offer.

Five, the proponent provide analysis of embedded emissions and how these will be abated as a result of the project. We have only touched on a few issues, many of which I've detailed previously to the Department and Commission. The Department, as SOS does, should create benchmarks to compare similar projects.

PROF MENZIES: Let me stop you there, Dennis. You are quite right. You have – we have a submission from you that we've worked through. I particularly note from your presentation your concerns about contamination risk and the issues that might arise if there's a fire or damage to the panels. I also noted that the concern regarding current lack of recycling opportunities for the components of the system.

And I also wanted to just touch on, you raised cumulative impacts. As a panel, we are very sensitised to the issue of cumulative impact, so while you didn't cover it in detail, it's certainly within the scope of what we are thinking about as we are considering this matter.

Commissioners – we're happy? Okay. Ken – sorry, Dennis, thank you very much for your presentation and thanks for keeping it to the time we could allocate to you.

Our next presentation is from Ivan Kennedy. Ivan, if you're online, you're set to go.

MR IVAN KENNEDY: Cumulative impacts.

PROF MENZIES: Ivan, we can only just hear you, so if you could speak up.

[Glitch in recording – live feed delayed 00:49:09 to 00:49:32 in italics]

MR ARMSTRONG: ... Asking the Commission to impose conditions that address some of the risks of this project. Namely, one, an index bond be lodged upfront to

provide for any future end-of-life activities, including disposal. Two, widespread soil testing of the toxic components of solar panels and batteries, including nano-formed materials, be done prior to installation, again when any panels or BESS components are damaged, and every three years regardless.

PROF MENZIES: Ivan, Ivan …

[Glitch in recording – live feed delayed 00:49:33 to 00:50:21 in italics]

MR ARMSTRONG: Three, the site is protected by a boundary sprinkler system strategically located and pressurised fire hydrants and safety structures. Four, the VPA with the Council be increased to reflect the DA lodgement [so you're 1% 00:49:46] of the capital value, not the under 50% on offer.

Five, the proponent provide analysis of embedded emissions and how these will be abated as a result of the project. We have only touched on a few issues, many of which I've detailed previously to the Department and Commission. The Department, as SOS does, should create benchmarks to compare similar projects.

PROF MENZIES: Let me stop you there. You're quite right, you have – we have a submission from you that we've worked through. I particularly note from your presentation your concerns about contamination risk and …

PROF MENZIES: We've had a technical hiccup there. It would appear that Ivan's listening to our live feed, which is delayed by some number of seconds, so that was coverage of our conversation with the last speaker. Ivan, if you can hear me delayed, etc., please turn off and … Anyone speaking to us, please turn off the live feed well ahead of your moment to speak.

So, we're moving now to Stan Moore. Stan, if you're online, you're up.

MR STAN MOORE: Oh, I am. Thank you. Thanks very much. I'm getting echo there.

PROF MENZIES: Yes, we don't know what's causing that, Stan, but if you'd tolerate the echo and keep going. We can hear you quite clearly.

MR MOORE: Okay, I'll try that. Thanks for the opportunity to talk to you today. There are three issues – there are many issues – but three that I would raise with you.

The first issue is around solar panels and then leaching some of their contents into soil and water. The Commission in the past and so has New South Wales Planning, have relied on a New South Wales EPA report and study which showed that if you were to soak panels in water for a period of 24 hours, there was no leaching occurring.

Now, I know that the Commission in its report and decision in relation to

Wallaroo raised that issue because the issue of contamination along the Murrumbidgee was a big issue at the IPC hearing.

I have sent you a PDF which hopefully you have got, and I've only sent you the front page, but it does reference where you can get the article from. The work that came out of Stuttgart University clearly says, and in the last line of the abstract, it said, "It is therefore not sufficient to carry out experiments just over a 24-hour period to conclude on the stability and environmental impact of photovoltaic modules." And if you were to look at that article, that is pretty robust evidence that these things do leach and therefore there are issues in waterways and soil, water runoff is a big issue.

And in my particular situation, there's a proposal for a solar factory of some 3.7 kilometres against my property, and there are a number of watershed points which will run across my property. That raises significant issues for me as a grazier. My livestock will be drinking and eating contaminated product which could effectively end up in either wool or in the meat that we produce. And that has been identified as a risk because of having a solar factory as a neighbour.

So, I bring that to your attention because I know that the Commission was after some robust evidence, and I would suggest that this work carried out at Stuttgart University went for a period of one-and-a-half years, is a report that you should take seriously.

The other issue is in relation to big-scale lithium batteries, and this project proposes one. The biggest danger of lithium batteries is fire. You need to ensure that there are sufficient fire avoidance treatments, well, if a fire should occur, what do the owners of that facility do. Lithium hydro fluoro, hexa-fluorophosphate batteries burn and they release not only the heavy metals, but they also release lithium hydro fluorophosphate into the atmosphere. And that, when it gets into the atmosphere it becomes hydrofluoric acid. And that is a very, very nasty acid. It's a contact poison and in low levels it can cause serious health impacts and even death.

So, it is a requirement that [unintelligible 00:56:00] that they don't catch fire, but if they do, there isn't a thermal runaway across all of the batteries, like we've just recently seen at Moss Landing in California.

And quickly, the last thing, the issue of decommissioning and the issue of the requirement for a security bond for the, so that the owner at the time of decommissioning has sufficient funds to carry out that decommissioning and also for any remediation that may occur from the panels' contamination and pollution.

PROF MENZIES: Okay, Stan, I'm going to stop you there because we're a little over time. But I wanted to allow you just that little bit of extra time so that you could flag those two points. They are very much in our thinking. The issues that you raise of contamination, I wanted to thank you for providing the Stuttgart University report to us. As you rightly note, additional useful information that we

can use to understand the problem is certainly welcome.

Once again, I wanted to stress if there is something that could be put into conditions that would help to address your concerns, please write to us, flagging what those conditions might be. That would be very useful input to us.

MR MOORE: Look, I can do that in relation to batteries. I'm not sure what you would do with solar panels, but I will lodge a submission and I'll include the complete report from Stuttgart.

PROF MENZIES: Thank you very much, Stan.

MR MOORE: My pleasure.

PROF MENZIES: We are now going to go back to Ivan. Ivan, if you're online, you're now up.

MR KENNEDY: Hello?

PROF MENZIES: We still have a problem. Ivan still has the live stream on, so we will get that delay coverage. Ivan, please turn off your radio or whatever you're on. We will come back to you again later.

Okay, we're now going to Steve Fordham. So, Steve, if you're online – ah, Steve, I can see you.

MR STEVE FORDHAM: Thanks, mate, I've got the majestic beard going on.

PROF MENZIES: You absolutely have, and we can hear you clearly, so over to you, Steve.

MR FORDHAM: That'd be great. Look, first off I just want to tell everyone I think this is actually going to be a great project for our local area. I know originally, I'm a fourth generation coal miner and to be honest, the renewable aspect in any aspect has been something sort of a sore topic within our region due to the fact that mining is such a pivotal point within what is within our community.

The OX2 guys actually came to the Hunter Valley and have done multiple consultations with the community groups and different partnerships and the local businesses, and just sort of getting out on the ground roots to work out what are the opportunities and what can we do that's going to be that bigger and beyond on the scale of the project.

Meeting with the team, I think it's – I'm actually quite happy for the fact that we've sort of set that bar early days with this first group that's come in, putting those standards in, even our Christmas this year, we have our local food and toy appeal, and the OX2 guys were straight in it, "What can we do, how can we support, and what do we do needing to go forward?"

So, I think those local engagements, there's a huge part of the onset. The other thing I think at the moment, diversification within our industry, within our local community is going to be a massive point. At the moment, we've got a large number of coal mines, and don't get me wrong, I think renewables and coal aspects should have a long-term future. And I think it is in this project specifically for the fact that this is built on an old mining ground that is being turned into something new and something that we can actually flourish within the local and regional local community.

One of the big part is, being a proud Kamilaroi man, one of the greatest initiatives I can see coming out of this project is that Indigenous engagement and those opportunities. One of the big things that we've worked out within some of the scope is the fact that there's a large amount of general labouring and general opportunities and entry-level opportunities within this sector. And having this within our local community is going to create a large number of pathways to help us extend those opportunities.

But I think this is one of the great needs, and I think it's a great early project. But for what these guys can do and bring to the Hunter Valley, I think it's at starting point and that's where we need to be. We have met with other solar providers and to be honest, I probably will not be coming into the pack with some of those supporters. Because for the fact that they haven't got that same value proposition what the OX2 guys do, in that they want to support the community, they want to be a long-term partner, they want to find opportunities so they can have that engagement piece, and to do more for our local region.

And that's what it's all about, like, at the end of the day in regional Australia, we normally get the bummed end of the stick, we normally don't get those opportunities. It's always everything we get sort of goes to the capital. But having guys like this that are going to be in the area, that aren't just going to be a project, they're going to be a partner for our region, is a massive aspect in the way in which we can go forward.

We have also met with the OX2 and about a dozen other local businesses that are looking at that early engagement. And they're putting those targets within there. Even with their tier-one project, companies coming in, they're putting those lee ways and those projects to make sure that there is that local opportunity – that locals do get something out of this. Because at the end of the day, that's what we want. We've always been on the sideline and having these pathways and these initiatives are a huge part to any operation and any way in which we can step forward. And I think that's where we need to have it.

So, I'm really looking forward to seeing this project go through. I hope the pack make the right decision. Because at the end of the day, this is what we need. And it's great having you guys here today to replicate that, hear the voices, but for some people on the negative side, it's just not having that full understanding of what's in it for the opportunities that's coming with this project.

PROF MENZIES: Thanks, Steve, that was a very, very clear presentation. We got your message well. But I wanted to ask you, if you could elaborate just a little bit on what opportunities you see for entry jobs for the Indigeous community that you just touched on there?

MR MOORE: Yes, so our company currently runs a massive prison initiative. So, we actually employed over 222 incarcerated men from one of our local prisons. They get to work out during the day and go back to prison in the afternoon. So, they get those opportunities in those entry-level roles. But we're also one of the largest employers for Aboriginal people within our local community.

So, partly what we're looking at, at the moment is working out how can we create these jobs in that market. The great big thing is we've got a lot of this work, so a lot of civil work involved in the project, which has always got a large amount of entry-level opportunities. We're now actually skilling our guys in one of the pathway initiatives we're working with the OX2, we're actually putting a training budget together so we can upskill and have people ready for when these projects do kick off.

But the big thing is with the solar panel installation, a lot of this is general labourers. Everyone thinks that they have to have sparkies installing the panels. Most of the time that's actually done by general labourers, and the sparkie does and come and connect the power source at the end of the project. So, that's where we're looking at that great level.

Probably around 45% of these jobs are going to come from this project are in that general labouring market. And that's where those things that we want to tap into, to give people their opportunity. Because we've got a large number of these projects coming to the area, there's a billion dollar one happening up in Merriwa. There are multiple other projects.

So, having these opportunities – I know the construction phase is a temporary phase for a lot of people, but there's longevity opportunities too, whether it's mowing, maintaining panels, cleaning panels. But I think this is a first step in creating that next workforce for other projects that are coming together in the future.

PROF MENZIES: Excellent. Thank you, Steve, that was a great elaboration on the point. Fellow commissioners? Nothing. Okay. Thank you very much. That was a really useful presentation, Steve.

We're now going to go back to Ivan Kennedy. And hopefully Ivan's got his feedback – the feedback problem we're experiencing with Ivan might be addressed now. Ivan, over to you.

MR KENNEDY: Yes, I have switched off the streaming altogether. I didn't realise I had to do that.

PROF MENZIES: Yes, no, you're coming through to us clearly now, Ivan.

MR KENNEDY: Yes. Well, my interest in solar farms, and it has been touched on by other speakers, stems from my professional expertise at the University of Sydney in chemical risk management for farmers. I've also visited this site many times with university students regarding the rehabilitation of the land from coal mining.

I want to discuss just one heavy metal often embedded in solar panels, and its potential risk. Silver. Silver speeds electro and transport in a voltage gradient induced by sunlight. Another area I claim of expertise, and published expertise, is in meteorology. The solar farm may cause environmental risks, these two interacting with each other.

I understand each solar panel is rated for 400 watts contains 10 to 20 grams of disperse silver as well as copper and minor metals such as cadmium. Having been poisoned by cadmium in the past from corrugated iron roof water, I take it personally. A 138-megawatt facility could contain 3 tonnes of silver dispersed into glass panels. Silver may be the major contaminant in many solar cells. Even a small leaching rate could lead to serious contamination of a soil, preventing plant growth.

My first question involves risks of toxic contamination of soil. Mis-advantage such as thunderstorms with large hail destroyed much of a functioning Houston solar farm in Texas, USA, in March 2024. And this is not an isolated incident.

This toxic metal in panels can be oxidised in runoff water to an ionic form and then bound by organic matter or clays in soil. Silver ions are at the high scale of metal toxicity, just below mercury. They bind in ionic form to essential components of living systems. And silver is listed just after chromium on the list of mutative substances potentially carcinogenic.

According to available information, the concentration of silver in soil, toxic generally falls in the range of 1 to 10 milligrams per kilogram, depending on the soil type and the form of silver present. However, concentrations as low as 0.1 milligram per kilogram may show detrimental effects on soil microbial communities in certain situations.

For soil density of 1.3 or about 13,000 kilograms per cubic metre, and for a mid-range of 5 milligrams per kilogram toxicity, then a total release of only 1.3% of 650 milligrams of silver per square metre out of the 50 in the panel, would contaminate 130 kilograms of soil to a depth of 10 centimetres. Enough to kill all surface plant life. However, in low concentrations of silver near 1 part per billion in water and soil can be expected to show some toxicity to soil bacteria and other organisms. Once released, is leachate in water, all metal ions will bind firmly to soil irreversibly. And the contaminated area loss to agriculture is a hazardous site forever; that's my opinion.

A monitoring program for leakage from storm and hail damage should be a requirement for operation of solar farms. This leaching is expected to increase with time, as the pure metal gradually diffuses as a result of its thermodynamic gradient in its activity.

This is also risk research needed for toxic impacts, and also the likelihood that the wind farm itself may have meteorological effects particularly if it's well supplied with water, inducing storm activity. I heard a buzz, so I assume I have limited time. Is that true?

PROF MENZIES: You're in your last minute, Ivan.

MR KENNEDY: Yes, one minute. I will make a submission and I'm just doing this on the fly since I just learnt about this occasion. And I congratulate the authorities for setting up such an organisation. I think everyone's trying to do the best job possible and I appreciate that if risks can be reduced, it needs to be done now, not in future when the damage has been done. Thanks very much. I'll halt at that point.

PROF MENZIES: Thank you very much, Ivan. I'm glad we persisted, because ultimately we got through to you and you had a good message for us. Please do make a submission and as well as providing us with the information on silver and the risks that it might present. A suggestion of how we might condition, you suggested soil testing as a way of monitoring impact. How we might cast a condition to do that would be useful to us.

MR KENNEDY: Yes. Yes, well, there are a number of things I might mention. As far as hail is concerned, you might need to construct a –

PROF MENZIES: Sorry, Ivan, we can't give you more time to speak, but a written submission would allow you to provide all that for us.

MR KENNEDY: Happy to be of service.

PROF MENZIES: Thanks. Thank you very much. I believe we're going to Carol-Ann Fletcher next. Carol-Ann, if you're there, you're on.

MS CAROL-ANN FLETCHER: Okay. Sorry, I just – can you hear me?

PROF MENZIES: Yes, we can hear you clearly.

MS FLETCHER: Okay. Yes, I'm following on from what others have said, I think particularly Dennis. So, my concern is mainly, well, all the concerns that are expressed, I wholeheartedly back, I wholeheartedly support. Because my concern – yes, anyway, I'll get right into it.

What I have done is I've taken different things to highlight my concerns about the

fire safety. And I'll just read them out to; I'll get started. Statistics from Australian PV Institute show that PV installations in the country increased from around 7.3 gigawatts in January 2018 to more than 20.7 gigawatts in December 2020. However, while the increase in PV installations in Australia during the period was less than threefold, data from Fire and Rescue New South Wales show that there was a sixfold increase in the number of solar fires attended by firefighters in the period 2018–2020, according to reports.

So, in 2020, Fire and Rescue New South Wales attended 139 solar fires, compared to 22 in 2018. That is disturbing and very concerning. And that was taken from Firetrace HIN Report, or Hidden Danger Solar Farms. And how solar farms can damage the environment? Well, from this – this is a quote I took from that article. Have you ever wondered what happens when a solar farm catches on fire? Well, earlier this year there was a solar farm in Australia that resulted in the loss of an area of grassland totalling 5 hectares, which is roughly the equivalent of 12 NFL football fields, which as an American I have an appreciation of because, you know, there was recently Super Bowl Sunday. So, if that gives you any idea.

Yes, and it's very challenging for firefighters to get to the scene of a fire in a short timeframe. And one of the other difficulties I have noted from that, that I'll send you on, is that it's hard for the firefighters to get underneath the solar panels in order to put out the fires. So, a fire at a solar farm can have devastating consequences for the surrounding environment.

This is in addition to the obvious risk fires pose to human health. The damage can include air pollution, water pollution, fatalities, bronchitis, the exacerbation of asthma and other lung diseases in the local population. Yes. This is a huge concern for me because my mom had asthma, so I know how stuff like that increased her asthma. So yes, this is a concern.

And what damage can solar farms do to the surrounding environments? Well, going on from what others have said, polluted water supply, yes. Stormwater runoff has been highlighted as one of the most noticeable impacts of forest fires, which you've already been told several times. Right?

After vegetation is destroyed by fire, the ground soil becomes hydrophobic, meaning it's unable to absorb water. This means debris and sediment is transported into larger bodies of water, resulting in the pollution of local supply.

Now there's an echo. Why is there an echo?

PROF MENZIES: We can't hear that echo, Carol-Ann, so please keep going.

MS FLETCHER: All right, yes. Filtering such water sources is often costly and time consuming, and I'm wondering who would exactly pay for that? Besides the damage that it would do to humans and to the environment, would it be the taxpayers per say that would be paying for that? We're already paying for this whole thing, because it's by subsidies, it's not by developers.

So, poor air quality. For example, if a forest burns, then large amounts of smoke are released into the atmosphere. This smoke includes microscopic particles often less than 2.5 micrometres in diameter, or around one 7/8th of the size of a human hair. These particles are so small that our bodies find it difficult to filter them out of our airways. Consequently, they get lodged deep in our lungs. That is a huge concern. Right?

Even the WHO speaks about this, serious damage to human health. The World Health Organization has highlighted how forest fires can have a major impact on mortality and morbidity, depending on the size, speed and proximity of the fire. The WHO says young children and pregnant women and older adults are most susceptible to the health impacts from smoke and ash. In addition WHO explains that smoke and ash from wildfires can greatly affect those with pre-existing respiratory diseases or heart diseases.

Meanwhile, as well as fatalities, like we're talking people's lives here. Wildfires can cause burns, decrease lung function, pulmonary inflammation, bronchitis, exacerbation of asthma, and exacerbation of cardiovascular disease.

And the thing is, they're connected to … Sorry …

PROF MENZIES: That's okay, Carolyn-Ann. We'll call your time to an end there. You're at time. But I just wanted to thankyou for bringing the risk of fire so much to our attention. It's certainly come up in a number of public submissions to us. It's certainly been part of our discussions both with the Department but also with the Council. So, you highlighting it is very useful in this public hearing, as a way of us reflecting on it being an issue that we need to consider as we look at this matter.

Our next speaker is Lynette LaBlack. So, Lynette if you're online, we're over to you. Lynette, you're our next speaker, if you're online, please proceed.

MS LYNETTE LABLACK: Oh, thank you. Can you hear me okay?

PROF MENZIES: Yes, Lynette, we can hear you well and we can see your presentation.

MS LABLACK: Oh, thank you. The approval of Muswellbrook solar and electricity generating works and battery energy storage system would defy all principles of ecologically sustainable development, Australian Drinking Water Guidelines, Stockholm Convention, the WHO, New Modern Slavery Condition, the Paris Agreement, the Livestock Production Assurance Program, and the National Electricity Law.

Most councils like Muswellbrook haven't a clue of the risk immoral hazard they're being cursed with. As they are inveigled into being the regulatory authority burdened with these retched, reckless renewable plans. As the Department and

Commission unjustly force these hideous experiments on us without due care and consideration of public health and safety. The exercidal impacts and the fact that pathetic weather-dependent, energy-depriving industrialised solar, wind and battery junk doesn't work most of the time.

A deceitfully orchestrated land grab and massive transfer of wealth to fake green carpetbaggers and predatory bully Transgrid is at the heart of New South Wales Renewable Infrastructure Roadmap. With the energy regulator pouring concrete around the worst ideas that come out of politicians' heads.

The idea that adding more and more renewable energy to the grid pushes prices down has been comprehensively dismissed. While a Department Planner and Environmental Assessment Officer confirmed that the Department doesn't have the resources to do the essential research regarding contamination, heat island effect impacts, etc., they are just trusting the developers.

This particular planner then conflictingly immediately became the Walla Walla Solar Project developer. It's shocking and totally unacceptable, but not surprising that this Department approval is typically so lacking in integrity that no weight can be placed on it.

Using confected evidence to deliberately ignore the truth, the vital facts paramount for public health and safety must not continue to be rubberstamped by this Commission. For example, whilst the New South Wales Large-Scale Solar Guideline has fudged a confected answer to 'Do solar panels contaminate soil', saying, "The metals in solar panels, including lead, cadmium, copper, indium, gallium, and nickel, cannot be easily released into the environment. This is because metals such as cadmium, telluride or cadmium sulphide are enclosed in thin layers between sheets of glass or plastic within the solar panel. Because of this," they say, "the use of metals in solar panels has not been found to pose a risk to the environment. To ready release contaminates into the environment, solar panels would need to be ground to a fine dust."

Well, as you'll see in the photos, some of the solar panels are ground to a fine dust when there's hail and when there's transport B-double accidents.

If only the RFS hierarchy would prioritise our lives and answer the essential fire hazard to solar and BESS questions in writing honestly, instead of disgracefully fobbing us off to do a GIPA request because it's too political to truthfully answer the most basic questions about the life-threatening inadequacy of exclusion zones, no ability to fight industrialised solar and battery fires, public health and safety risks from inevitable toxic contamination of surrounding land and water systems, and the damaging heat island effect, etc.

Now, you can see in the photos at the beginning, there's a big sign saying about PFAS contamination in our local area, Wagga Wagga, with a big PFAS moving down to the river. And in those photos, you'll also see that there's lovely productive, highly productive land that's now being entombed in solar panels.

There we've got about half a million panels to the south, in the middle of our food growing crops. It's going to poison our soil and our water and our food. There's been serious fence damage in a recent store. This is at Wagga Wagga right next to the panels, and who knows what's happened to those panels in there, 500,000 of them.

There's stacks of hail damage. In fact, there was 10 apparently palm-sized hail damage at Harden on Monday. The Woolooga solar development has been badly damaged by hail. Recently, just on the 4th, there was all this wind damage you can see to solar panels where they're blown all over the place, they look so fragile. And there you've got the B-double accident with ground-up solar panels on the ground in the waterways.

PROF MENZIES: Lynette, Lynette, I'll ask you to wind it up at that point.

MS LABLACK: Okay.

PROF MENZIES: If there are particular issues, we have submission from you, if there are particular issues you wanted to bring to our attention in addition to that submission, would certainly be welcome.

MS LABLACK: Well, you can see just there the waterways, how –

PROF MENZIES: Lynette, we've stopped your presentation at this point because we do need to move on.

I wanted to let you know that we haven't been able to reach Ali Cairns who was one of the presenters we'd hoped to speak to. We'll contact Ali and ensure that she has the opportunity to make a written submission to us.

At this point, the Commission's going to take a 20-minute break to give us the opportunity to consult with each other to make sure that we've drawn out everything what was presented to us during these presentations that we've heard this morning. And to ensure that we can adequately synthesise that and move on. So, we'll come back in 20 minutes for a discussion with the applicant and with the Department.

[Music plays during break from 01:24:06 to 01:45:08]

PROF MENZIES: Okay. Welcome back everyone who's joining us for this final part of the public hearing. We are now going to speak to the applicant and give them an opportunity to respond to the various issues that were raised by speakers through the course of this meeting. We've got Carla back, and Helen. Okay guys, over to you.

MS EVANS: Thank you. So, first thing, we'd really like to thank the commissioners, the Department and community members for their time and valuable contributions to today's meeting, including online submissions and

feedback on our proposed project.

We acknowledge the concerns and feedback that have been raised today and in online submissions, however, we won't address each of the concerns or feedback individually, as the majority of these concerns were raised during the EIS exhibition period and have already been addressed in detail in the Submissions Report prepared for the project.

The Department has assessed the project and determined that it would not result in significant impacts on the local community or environment, with any residual impact effectively managed through the recommended conditions.

The Hunter-Central Coast Renewable Energy Zone declared in 2022 was selected by the New South Wales Government for its strong renewable energy potential and existing infrastructure, including power stations, rehabilitated mining land, electricity networks, transport links and a skilled workforce. Modernising the region's electricity system will support industries in decarbonising and accessing cleaner, more affordable and reliable renewable energy through new renewable energy and storage projects.

So, the Muswellbrook Solar Farm and Battery Project will play a key role in securing New South Wales's renewable energy supply, while reducing greenhouse gas emissions over its operational life. OX2 is a signatory to the Clean Energy Council's Best Practice Charter for Renewable Energy Development, demonstrating our commitment to engaging respectfully with communities, safeguarding environmental and cultural values and contributing positively to the regions where we operate.

As Australia embraces the opportunities of a growing renewable energy sector, we recognise the importance of ensuring local communities share in the benefits our projects provide. And we look forward to continuing our collaboration with Muswellbrook Shire Council and other businesses and stakeholders to achieve this.

Our commitment is to maximise local employment and business opportunities while delivering the most suitable accommodation solutions for our workforce. Our priority remains to employ locally first.

We support the Department's assessment that this project would result in benefits to both the state and the local community and is therefore in the public interest. And in this regard, we think the Commission's approval of the project – yes, once again we'd just like to thank you for your time and consideration today.

PROF MENZIES: Thanks, Carla. During our little break, we commissioners had the opportunity to reflect on the various things that were raised and discussed by the public. And so we've got a couple of things that we wanted to raise with you. And Suellen, if you'd like to start?

MS FITZGERALD: Thanks, Chair. Carla, you talked about prioritising local employment and also you've got fairly high percentage targets for local employment in your EIS and your proposal. Could you tell us a little bit more about what actions you've taken or are proposing to take to achieve those local employment benefits, including skilling of the local community?

MS EVANS: Thank you very much. I'll handover to Helen to answer that question.

MS KENNEDY: Yes, thank you. Yes, we have an approximately 50% target for local employment for the project. With discussions with local existing businesses, we believe that's achievable, especially in terms of the general labourers that are required for the project.

Our aim is to work more with those local businesses and establish greater partnerships to establish the workforce locally, and also through working with Muswellbrook Shire Council. Part of the VPA is a requirement for us to establish a number of apprenticeships. So, we'd be looking to work with those providers in Muswellbrook and also training service providers to make sure that the workforce can be skilled and ready to work on our project once it's ready to go.

MS FITZGERALD: Thanks, Helen. Obviously, that's going to have an impact on accommodation, if you can maximise local employment. The accommodation issues have come up in this morning's presentations. Proactive actions that OX2 is taking to ensure you get that accommodation availability?

MS KENNEDY: Yes, so we began talking with local industry at the beginning of the project around accommodation, as we knew this could be a considerable impact for the project.

MS FITZGERALD: Yes.

MS KENNEDY: So, what we've done is to establish a memorandum of understanding with Brightlands Living, so, we heard from Edward Fernon earlier today. So, we have an MOU with them to provide us with the majority of the accommodation needs for the project.

We are still hoping to utilise some existing accommodation in town to be able to provide that economic benefit to those businesses that are already established. However, if that isn't available at the time of construction of the project, Brightlands Living do have additional accommodation available that we can utilise to provide accommodation for the total workforce needed.

MS FITZGERALD: Thanks, Helen. Thank you.

PROF MENZIES: Michael?

MR MICHAEL WRIGHT: Thank you, Chair. One of the issues raised in the

public meeting today was around fire and the impact of fire on both the battery system and panels in a solar farm, is the particular one. I'm just wondering whether OX2 could provide us with any further information on what it intends to do to mitigate fire risk or deal with fire should it break out, either in the context of the battery system or more broadly across the panel array.

MS EVANS: Yes, certainly. So, as part of the EIS, we undertook, or our consultant undertook a Bushfire Impact Assessment as well as a preliminary Hazard Impact Assessment. And those assessments looked at those risks. And mitigation measures were proposed to mitigate those risks, so all those mitigation measures are included in our EIS which we've committed to and are also conditions of consent in the Department's recommended conditions of consent.

MR WRIGHT: Okay, thank you.

PROF MENZIES: Carla, one of our speakers told us that he'd visited the site and walked around and visited some of the homes that were going to be impacted by the change in aspect that they would have. And he put the viewpoint that a lot of that visual impact could be addressed by tree planting on people's own blocks, and that that would improve the value of their block etc. And he flagged that maybe there was a role for OX2 in this by providing landscape design support etc. I wonder whether you'd like to elaborate on what the applicant's view on this would be.

MS EVANS: I'll handover to Helen again to answer that one for us.

MS KENNEDY: Yes. The assessment of the project in terms of its visual impact using the solar guidelines has determined that the views from the property at Woodland Ridge are low or very low and indicated that there isn't a requirement for additional screening at the properties itself. However, we have heard from a number of the residents their concern around the visual impact. And that's why the VPA, the Voluntary Planning Agreement with Council includes a neighbour benefit portion.

So, we believe that the funds that those neighbours will receive through that benefit payment could be used for individual planting on their properties, or to be used to go towards the design of potential screening.

PROF MENZIES: Okay, thank you. Other points, fellow commissioners?

MS FITZGERALD: No.

PROF MENZIES: No. I think that we're happy with what we've heard. So, thank you very much OX2 team. If there are other issues that we think of on further reflection or as a result of materials that speakers send us in after today's meeting, we'll come back to you to ask further questions.

Okay, I think we're now going to go to the Department. And Iwan Davies is

joining us from the Department of Planning, Housing and Infrastructure. Iwan, you're online, we now have the opportunity to talk to you.

We're probably a few minutes ahead of schedule because we didn't talk to the applicant for very long.

MR IWAN DAVIES: Okay.

PROF MENZIES: Ah, Iwan, you're with us.

MR DAVIES: Yes.

PROF MENZIES: Excellent. Thank you. We had sent a couple of issues that we were concerned about through to the Department. So, Iwan, did you want to – well, perhaps rather than leaving it entirely to you to cover this, we will ask you the questions. But just to let everyone in the meeting know, we'd sent these through to Iwan so that he had a little bit of time to reflect on what he might say. It's not our expectation that our questions are answered immediately. We're happy for things to be taken on notice and detailed feedback to be provided to us.

But Iwan, if you were able to provide us your thoughts on some of the issues. So, one of the concerns raised by several people was that the emissions that result from the manufacture of panels is so high that this doesn't make any sense. Could you give us some help in understanding Scope 1 and 2 emissions from a solar panel manufacture relative to what we are likely to see through the use of those panels to generate energy?

MR DAVIES: Thank you. So, the Department considers emissions – I'm getting a lot of feedback, sorry. So, the Department considers emissions – bear with me, I'm going to have – are you able to go on mute on that side, sorry, I'm just …

PROF MENZIES: We're on mute. We don't – well, I'm not on mute now obviously. We are all on mute and hopefully the echo will die off. We are not hearing it.

MR DAVIES: Okay, thank you. That's better now, yes, that's disappeared for me. So, the Department considers emissions in all types of projects. Clearly, in more detail for some projects than others. Ultimately, the Department's position on this is that renewable projects have been proven to reduce emissions, despite emissions that may be generated during processing or production of panels. That's the Department's position and perhaps it is for the applicant to respond in more detail on how the industry, with more detail on the industry's approach and any detail they can provide you on the manufacture of solar panels. But the Department considers the matter, but considers that renewable energy projects including solar farms have been proven to reduce emissions.

PROF MENZIES: Okay. And just for my clarity on this, so proven this is whole-of-life analysis of solar panel systems?

MR DAVIES: That is correct.

PROF MENZIES: Okay, let's move on and we'd certainly – I'm confident that Carla and her team are still listening, so if they wanted to provide us with a bit of additional information, it would certainly be welcome.

Another issue that came up from a number of speakers was concern around metal release from panels and particularly if panels were damaged by hailstorms or perhaps by fire. Could you give us a bit of insight there, Iwan?

MR DAVIES: Absolutely. So, the Department considers that there to be a low risk of contamination arising – sorry, I'm just hearing myself back very loudly again. That's better, thank you.

The Department considers there to be a low risk of contamination arising as a result of the project. The Department's position has not changed from its response to the IPC on, I think, most other projects including the Wallaroo Solar Farm. So, I'd like to point the IPC to our response there. That is in summary.

But the metals in solar panels cannot be easily released into the environment. This is because these metals are enclosed in a thin layer between sheets of glass or plastic within the solar panels. Because of this, the use of metals in solar panels has not been found to pose a risk to the environment.

To readily release contaminants into the environment, solar panels would need to be ground to a fine dust. This was informed, or the Department's position was informed by advice from the New South Wales Environment Protection Authority, which is the primary environmental regulator for New South Wales. So, the Department's position has not changed on the matter, and I'd like to point the IPC to the previous responses provided by the Department.

PROF MENZIES: Thanks, Iwan. So, that was provision of information around Wallaroo Solar Farm, so we'll certainly pull that and have a look at it.

The other one that I had was – one of our speakers expressed concern that the solar panels would attract insects, would attract birds, would attract bats. I understand this is called the "lake effect". Could you comment on that for us?

MR DAVIES: Thank you. So, ultimately the Department consults closely with the New South Wales Government Biodiversity Division or Department. This has not been raised by that agency on solar farms, unlike potential impacts on birds and bats from other types of projects. It is not a concern for the Department or the New South Wales Government's Biodiversity Division.

PROF MENZIES: Okay. Fellow commissioners, other questions for the Department?

MS FITZGERALD: No, no.

MR WRIGHT: No.

PROF MENZIES: Okay, Iwan. Thank you very much for those brief but useful comments, and we will certainly look at the more detailed material that you provided in response to Wallaroo.

That brings us to the end, so I have a closing statement that I'd like to read to conclude. So, this brings us to the end of the public meeting into Muswellbrook Solar Farm (SSD 46543209). Thank you to everyone who's participated in this important part of the process, Suellen Fitzgerald and Michael Wright and I have all appreciated your input.

Just a reminder that it's not too late to have your say on this application. Simply click the 'Make a submission' portal on our website and you can send us a submission via email or post. The deadline for written comments is 5 p.m. next Wednesday the 19th of February.

In the interests 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 its decision-making process.

Finally, a quick thank you from me to my fellow commissioners, Suellen and Michael, and thanks to all of you who've joined and watched our meeting today. From all of us here at the Commission, enjoy the rest of your day, and good afternoon.

>THE MEETING CONCLUDED