New South Wales Government
Independent Planning Commission

TRANSCRIPT OF PROCEEDINGS

RE: OXLEY SOLAR FARM (SSD-10346)

APPLICANT MEETING

COMMISSION PANEL:	CHRIS WILSON (Panel Chair) WENDY LEWIN ALISON MCCABE
OFFICE OF THE IPC:	PHOEBE JARVIS OLIVER COPE BRAD JAMES
APPLICANT REPRESENTATIVES:	BRUCE HOWARD BROOKE MARSHALL KYLE MERCER DIANA FORRESTER ELIZABETH PICKER MARK VILE
LOCATION:	VIA VIDEO CONFERENCE AND AT IPC, SUITE 15.02, LEVEL 15, 135 KING STREET, SYDNEY NSW 2000
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MR CHRIS WILSON: Before we begin I'd like to acknowledge the traditional owners of the land in which we meet the Gadigal people of the Eora Nation and I acknowledge the traditional owners of all the country from which we virtually meet today. I pay my respects to their Elders past and present. Welcome to the meeting today to discuss the Oxley Solar Farm currently before the Commission for determination. The Applicant, Oxley Solar Development Pty Limited, proposes to develop a 215 megawatt solar farm and a 50 megawatt battery approximately 14 kilometres south-east of Armidale in the New England Renewable Energy Zone.

My name is Chris Wilson, I am the Chair of this Commission Panel. I am joined by my fellow Commissioners Wendy Lewin and Alison McCabe. We are also joined by Phoebe Jarvis, Brad James and Oliver Cope from the Office of the Independent 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 upon which the Commission will base its determination. It is important for the Commissioners to ask questions of attendees and to clarify issues whenever it is considered appropriate. If you're asked a question and not in a position to answer, please feel free to take the question on notice and provide any additional information in writing which we'll then put on our website. I request that all members here today introduce themselves before speaking for the first time and for all members to ensure they do not speak over the top of each other to ensure accuracy of the transcript. We will now begin.

So Bruce I understand you may have a presentation or - - -

MR BRUCE HOWARD: I do. If you want to introduce people first quickly then we can go through it.

MR WILSON: Well, we've done a roll call. So we understand you'll give the presentation and then the others are here to answer questions, is that correct?

MR HOWARD: Okay, that's fine. Yes.

MR WILSON: So over to you Bruce.

MR HOWARD: All right, thank you for this opportunity to present to the IPC Panel and we welcome your involvement. So we've had a long journey on this. So Phoebe you might put the slide deck up. We started in about 2018. But I've got a brief slide

looking at our time line. So next one. So I've just got a couple of slides on the overview of the project. Then I split the rest of the presentation up into the submissions in order of, number of submissions on topics. So there's some relationship to what was said to the DPE in response to the EIS. So that's the general format. So three or four slides on the general ones and then we'll go into the actual issues which hopefully will cover most of your agenda items. But please feel free to ask me questions. But just with myself, yes, I'm the general manager of the development. I've been involved since its inception around 2018. We probably lost about a year and a half due to COVID. We couldn't do studies on site. But I'm sure that was the same with most developments.

All right, so the regional context about 14 kilometres south-east of Armidale township in a rural area largely RU1 zoning. South of the Waterfall Way or Grafton Road and north of Oxley Wild Rivers National Park. So the red outline there is our project boundary not our solar panel layout. You'll see that later. But that's our project boundary. Solar panels are much less. In the area there's a waste facility next door to the north-west. There's a future solar farm, a smaller one at Olive Grove, which hasn't commenced yet, although being approved. And the Metz Solar Farm north-east which is probably about a half, less than half the size of our proposal and it was commissioned about six months ago but not visible from the project site. Any questions on that?

MR WILSON: Yeah, I do actually. The Metz Solar Farm where did the majority of their workers come from in terms of construction?

MR HOWARD: As far as I know it's not our project. But as far as I know they employed as many people locally as they could and which will be our policy as well. But for some of the more specialised areas, for example, electrical commissioning we'd bring in specialists.

MR WILSON: I understand that.

MR HOWARD: For the general semi or low-skilled workers, yes, they employ locally.

MR WILSON: And their construction period, I understand it's much smaller.

MR HOWARD: Yes, ours is normally 18 months. They had some trouble with finding rock they didn't know that was there. But that probably, I'm not sure of the exact time, but it probably took a year or two.

MR WILSON: Okay. All right. Thank you.

MR HOWARD: Next one, Phoebe. Just a very brief project time line. We've done a couple of loops or rounds of negotiation and feedback from the community. But it all started back in 2018 when we negotiated with the land owners. We dealt with the Department of Planning. We published a scoping report. They've given us the SEARs back which is our guidance on how to prepare the EIS. We held open days during that period for the public to make comments. Then we did the EIS proper and as I said there was a delay due to COVID issues and it was published in March and April '21 and we had another public exhibition, one with DPE. Feedback from that round we did some major design changes to address the submission concerns. And in October '22 we gave a submission report and an amendment report in November last year to address how we downsized and modified the project to address the submissions. And then in September this year, early September we did an RFI response to some questions from DPE. And in late September the DPE made their recommendation or referral to you for determination. So that's a very broad time line.

MR WILSON: Just before we move off this slide, I mean, there was some criticism in submissions in relation to the community consultation undertaken prior to releasing the EIS.

MR HOWARD: Yes.

MR WILSON: I can't remember seeing it in your response that you undertook, you did site - can you just explain the process you went in relation to 'cause the SEARs asked you to do community consultation. Can you just elaborate on that a bit if you can?

MR HOWARD: I can. And I can get a week or month by month detail what I did.

MR WILSON: No, no, it's all right.

MR HOWARD: But broadly speaking, we set up a website with an email feedback phone number which comes to me from the very beginning. And we kept a log of all communications. Also from the result of the various community consultation meetings we had we took details where people would give them to us, so we put them on our database as well and we asked people if they'd like me to visit their site. So of the concerned people I probably visited 80%, 90% of - - -

MR WILSON: Those who wanted to --

MR HOWARD: Those who wanted to meet. That's with all of them. Probably 80 or 90% said I could come. And so I physically went out there and spoke to them about our, at that early stage, what we were proposing and where it was in relation to their homes and answering any of their questions. And they formed part of our mailing list. We'd put newsletters out when there was something to say. Sometimes every few months, sometimes, maybe it was six months in the COVID time there wasn't much to report. But so we had that database. And then when people contacted us we responded and we (not transcribable)

MR WILSON: No, that's fine. I was just trying to understand. Thank you so much.

MR HOWARD: - - and so we did - - proactive email communication. Any more on that one?

MR WILSON: No, that's fine. Thank you.

MR HOWARD: Okay, next one Phoebe. Just a very quick overview of the key features. It's 215 megawatt solar panels, a 50 megawatt battery. Part of the reason we also chose the site as you probably gather is there's powerlines across the northern edge of the site which then introduced another project to get to the power grid. We negotiated with the northern landowner of having a new access way from the Council landfill road. We also dealt with Council and Crown Lands on that using the exiting turnoff from the main highway. So we don't need to build a new intersection. That's in the top left. The site's largely RU1 which was general rural. And as a general approach with our modified footprint which this is we designed it to avoid environmentally sensitive areas. We might go a bit more into that in subsequent slides.

MR WILSON: We do have some questions on terms of upgrades. But we'll deal with that when we get to it - - -

MR HOWARD: Sure.

MR WILSON: - - - traffic and transport.

MR HOWARD: All right. Next one, Phoebe. So I thought I'd do the rest of the presentation basically having them on one slide and maybe two on some of them on each land on public submission topics. And that hopefully will answer most of your questions. But feel free to ask at any time. So obviously land use visual amenity were probably the remaining two obviously. Next one, Phoebe. I've chosen -- going back but I just wanted to start with this one before we dive into the detail of how we, in a

big picture point of view, how we modified the project from the EIS stage to the amended EIS stage or amendment to the project. So we reduced our development footprint which was the project area by about 70% from 895 to 268 hectares. The solar panel areas themselves we reduced by 27%. The number of panels we were able to reduce by almost half, 46%. We increased set back distances from the residents as we considered to be closest. R5 we increased it by about 69 metres which is about 12%. From R7 and 201 which were across the river to the south we increased those distances eight or 900 metres which is about 113, 154% increase in distance for R201. So they're across the river. And from the Blue Hole picnic area which is the National Park we increased the distance from that by about 170%.

MS WENDY LEWIN: That's at the entry to the - - -

MR HOWARD: National park.

MS LEWIN: Through the picnic area.

MR HOWARD: That's right. Picnic area and the track just goes a little bit north. But to the actual national park boundary which I think is a bit further north-east. Sorry, the Blue Hole picnic area, sorry, that one is to the picnic area, yes, that one. Into the biodiversity items, the first one does show a slight increase but that was not because we effected more of it, some of the vegetation was reclassified. So that's why that's a slight positive. But the other ones box gum and hollow-bearing trees we reduced our impact by 70% odd. And the generation capacity compared to the EIS we've reduced about 15%. Now, the reason we've been able, just before anyone asks - - -

MR WILSON: I was about to ask.

MR HOWARD: Yeah, I thought you would. It is a small paragraph, bracket the thing underneath that difference column. The reason being when we, shows you how fast technology's changing, the efficiency of the panels is increasing so quickly. We had a 360 watt panel back in 2019 or 360 watts output per panel. On that last, maybe a year ago, we can now get 670 watt per panel output.

MR WILSON: Same size panel.

MR HOWARD: Or it's about 100 or 200 mils longer. But that doesn't translate to a higher increase of angle. So it's a little bit longer. But there's a lot more output. So that's where the - and maybe by the time if it's approved, by the time it was constructed there may even be more efficiencies in panels. So that's the reason panel efficiency.

MR WILSON: Thanks.

MR HOWARD: More output per panel. And also down the bottom some wordy or descriptive improvements, we've improved the site access by coming off the Council access road and we're going to upgrade the Gara River causeway in height and improve it for fish migration as in accordance with the fish guidelines. So that's a quick overview and that, as I said, the context at a high level. Next one, Phoebe. So the agricultural land use, this is the first key issue. Again, there's much more details in the detailed reports but it's an overview. It's not mapped as BSAL which is a, if you're aware of that, 67% of the land is Class 5 which if you go into the definitions is severe in limitations more suitable for grazing and occasional cultivation and for fodder crops. In fact, in one of the corners of the existing property the farmer does grow some fodder. But not what you'd call large-scale cropping. And the balance of land is Class 4 and 6 which is moderate to severe land use, land capability. And you'll see the map to the right shows that in colouring. Any questions on that one?

MR WILSON: No. Only that you will be planting trees, is that right under the arrays?

MR HOWARD: Under the arrays, normally there's just a cover. We're doing screen trees not, you know - - -

MR WILSON: Okay. You'll keep the grass cover, that's my understanding.

MR HOWARD: That's right. Yes.

MR WILSON: So that doesn't change the classification then?

MR HOWARD: No, no.

MS LEWIN: It still retains grazing capacity?

MR HOWARD: It does, yes. The exact way to do it, as you probably know, there are a few ways to do it, you can use sheep or but I'll come to it later. But one thing we're looking at, again if it's approved, partnering with University of New England, they've got some academics there who are looking at how to increase the biodiversity flexibility in the panel area. So that's really a "watch this space" academic research activity. So there's some possibility of teaming up with them to get some value.

MS LEWIN: And does that also introduce into that discussion the elevation of the panels above the height of the ground plain to have more incident -- sunlight?

MR HOWARD: Possibly, yes. And also another question which comes up, are they going to be fixed or you can also tilt them. We haven't come to that engineering decision probably it's often due to the slope. And we may even have a combination -- of fixed and tilting. But, yes, that would probably be how we'd treat it.

MR WILSON: Tilting to attract the sun, yeah?

MR HOWARD: That's right, yes, basically east-west. Yes.

MS LEWIN: And that would in the cycle -- also contribute to the efficiencies of the general output?

MR HOWARD: It would, yeah, that's right. That's normally why I do tilt it's better energy output.

MR WILSON: It can also attribute to solar access to the land --

MS LEWIN: Ground plain. That's right. So that will be an interesting collaboration.

MR HOWARD: So, in fact, I'm meeting the people from University of New England when I'm up there next week or week after to talk about these issues, the possibility. Next one?

MR WILSON: Yep. Thank you.

MR HOWARD: Visual amenity. This is a major one as you've probably gathered. We've reduced, that was in the table, these various parameters. We will be putting visual screening and we've modified the project to set it back from sensitive receivers. That right-hand one basically the orange and the green was our original EIS footprint. We've basically removed the orange and we now have the green and the hatched area. So it's basically contracted north-east from the original proposal – the various numbers you saw in that table. And Blue Hole is the very bottom middle. That's the picnic area, the very bottom.

MR WILSON: So is that the Blue - I can't see - - -

MR HOWARD: That's it there, that's the Blue Hole. And the park, you can see the very tip of the park, very tip of the northern park. The rest of it goes south.

MR WILSON: Is that the walking track to the right?

MR HOWARD: Yes. I've got a photo later. The walking track's probably 10 or 20 metres from the boundary.

MR WILSON: Okay. Yes. So - - -

MR HOWARD: South of the boundary.

MR WILSON: South of your boundary?

MR HOWARD: Yes.

MR WILSON: Yeah, okay.

MR HOWARD: I've got a photo later on, I'll show it to you, of a photo from about that middle bottom spot. Any questions?

MR WILSON: No, it's fine. I guess we'll come back to that. We'll come back to that in more detail.

MR HOWARD: This is another one about a different way of looking at the sensitive receivers. Basically the closest one is R5 which is the top right. Can you see that, Phoebe? But there is a hillock. Can you see the top right hand corner of our property boundary, just go bottom left from the R5, it's all white. There's nothing there that's because it's a small hillock, there with trees on it which obstructs the view from R5 you'll see that.

MR WILSON: I think we are visiting R5. Yes.

MR HOWARD: I believe so. That's one of the spots. Then coming across the other side of the river down the bottom left R7 and R201. They're probably the visual point of view that you can see across the valley. But they're about a kilometre or more, 1,500 metres from the closest panel area.

MR WILSON: There's one that's considered to have a moderate impact in your visual impact statement.

MR HOWARD: That's 201.

MR WILSON: Sorry?

MR HOWARD: R201.

MR WILSON: Where's that one, sorry, just for context?

MR HOWARD: There.

MR WILSON: There. Okay. Thank you.

MR HOWARD: Then we'll be driving over to that site as well. So, yeah, by pulling it, contracting north-east we've, and plus screening, where appropriate and agree with the landowners we'll mitigate that impact, the details in the visual report. Any other questions on that one?

MR WILSON: No, we'll come back to it.

MR HOWARD: Next one. This one is a bit more detailed about that northern boundary of the national park from a visual point of view. So probably one before that middle bottom bit was basically where the green tree line is. So the green is national park. The purple are our panel footprint. And the bottom one is probably a little bit to the right of where that arrow is from the track you can pretty much - - due north (not transcribable). Yeah, there's a (not transcribable) north is above the on the view.

MR WILSON: So the arrays on the right hand side in the distance, yeah?

MR HOWARD: Yeah, that's right.

MS LEWIN: Beyond the vegetation.

MR HOWARD: So can you see that red dotted on the top of the photo?

MR WILSON: Yes.

MR HOWARD: That's a theoretical where the project is but you can't really see it because of the rise.

MR WILSON: Is it the theoretical where your land is where the development not necessarily the arrays?

MR HOWARD: Yeah, the land fence sort of goes left to right beyond those trees. But the development is sort of over the hill between those, the red dashed line. It doesn't come down to the fence, anywhere near it. No.

MR WILSON: Well, we need to - as you said we haven't been out there so context is a bit difficult.

MR HOWARD: At that point where that photo was taken there's only about a five minute walk from the parking area. It's easy to get to.

MR WILSON: On the track?

MR HOWARD: Yeah. It's the very beginning of the track. So, I guess, my point is there's a bit of a curve in the hill and the panels are over that curve.

MR WILSON: Okay. And you're proposing to put in more vegetation?

MR HOWARD: More vegetation. Yeah.

MR WILSON: To fill in the gaps. Is that what you're proposing?

MR HOWARD: That's right, that's right. Effectively about 20 or 30 metres to left of that track is the boundary fence. And we plan on our side of the boundary fence appropriate vegetation.

MS LEWIN: For the full length to the boundary?

MR HOWARD: Yes. Yes.

MS ALISON McCABE: But do you say because of the curve of the hill do I not see it anyhow? What are you saying?

MR HOWARD: We don't believe, we don't believe you will. But we're still comfortable with putting screening there as well

MR WILSON: Thanks.

MR HOWARD: That photo is from our visual report. There is commentary words associated with that photo. The biodiversity impacts, we're going to talk about, I've got Brooke online who can talk in much more detail about this. But that's just a very quick summary. We tried to avoid impacts wherever possible and build around (not transcribable) around them. That's our broad approach. But if you've got any more detailed questions?

MR WILSON: No, we'll move on - - if we've got any questions on biodiversity we'll pose them.

MR HOWARD: Next one. Community consultation we talked about that briefly before. But, yes, we have reached out to the community and part of the challenge for a developer is finding out who is interested and who to speak to. So we did, with the public meetings we put newspaper ads out, we've had the website email and phone number since the beginning of the project. Basically every time someone enquired we tried to get them on our email distribution list. So and I visited as many people as possible who were, who requested or asked to visit them. We've also supported some local charity events, Children Cancer Research Fund, you can see on the right-hand side. In fact, there's a walk out there on the 15th which I'll be going on. They have a yearly charity walk "19 for 19" which happens on the 15th, just before the convenient time. Just before our meeting up there. And I've done, over the last couple of years it normally coincides where groups of publicity are radio interviews, if you want TV, Channel 7 northern region interviewed me last Friday for their local news. So we're always available for that. And there'd be comments but no objections from government agencies, councils, (not transcribable). I'm happy to fill out - - -

MR WILSON: No, no, it's fine. Thank you.

MR HOWARD: Next one. Issue 6 waterways and flooding. Bottom line is for our waterways and flooding report is that it's not significantly affected by flooding. And the project would not have a significant effect on flood behaviour. And also we are going to operate a causeway across the Gara River because when there is high rain levels that causeway isn't passable. And in fact, over the last couple of years, speaking to local landowners, about half a dozen cars have been washed off and they're amazed someone hasn't been killed. Because people misjudge the depth, non-locals usually drive across and whoosh they get pushed off. So, yeah, that's one positive for local landowners see raising that by about 1.3 metres that causeway. And, of course, all the appropriate control or management plans would be produced to manage those issues associated with - - -

MR WILSON: Can I just ask a question about the type of fencing you will use around the site? Like is it chain-mesh fencing like security fencing?

MR HOWARD: Normally, around the substation there's probably a little bit higher security with chain mesh and probably barbed wire or razor wire. But around the solar panels themselves it's probably more chain mesh. It's really to stop public safety really. So people don't get in and do any harm to themselves. That's the main reason.

MR WILSON: Sure. The reason I ask is when there's water flowing across the site sometimes it has a tendency to build up debris on the edges of those fences if they haven't, they can't pass underneath?

MR HOWARD: That's right. Well, that will be part of our, I guess, management plan for the site of regular inspections and clearing of any debris that - particularly after a high rain fall event you'd do a safety inspection to see how that asset coped. We wouldn't be putting it high just to allow the floodwater because that would defeat the purpose of the fence. But the fence is mainly for public safety.

MR WILSON: Yeah. Okay.

MR HOWARD: Next one, Phoebe. Economic impact. Apart from money in the construction phase particularly in construction of jobs and the like which is about 300 jobs at the peak of construction and probably five full-time equivalent post construction through operation we're funding through a voluntary planning agreement with Armidale Regional Council a total of 5.58 million. Also we're committed to install electric vehicle charging stations. We're sponsoring a Project Zero30 through the Council. And as I said before we intend to continue to sponsor some local charities. And on another area I've been working with the Armidale Tree Group - - they're very keen on wildlife corridors. So we've committed to help establish a wildlife corridor through the site to link Oxley Wild Rivers National Park up to the Travelling Stock Group at the north at Waterfall Way. Also as I mentioned that bottom one the University of New England are discussing with me about the potential for joint research.

MS LEWIN: What species are endemic to this wildlife corridor?

MR HOWARD: Brooke is our environmental specialist. Brooke, any comment on that how the wildlife corridor could encourage species?

MS BROOKE MARSHALL: Yeah, yeah. So the wildlife connectivity corridor is an issue that came out - - -

MR HOWARD: Can't hear.

MS MARSHALL: - - - of some consultation at (not transcribable) that's certainly our - - -

MS PHOEBE JARVIS: Brooke, we can't hear you. Are you able to adjust your mic?

MR HOWARD: Your volume.

MS MARSHALL: Can you hear me at all?

MR WILSON: It's soft, softly.

MS MARSHALL: I'll stand a lot closer. Is that any better?

MR HOWARD: It's a bit better.

MS MARSHALL: Ah, sorry, just give me one sec and I'll try and adjust my settings. Do you want to keep talking about something else while I do that?

MS LEWIN: Yes.

MR WILSON: Yep.

MS LEWIN: Just keep going.

MR HOWARD: Okay. We'll come back to the, so the species through the wildlife corridor. Yes. I'm the engineer not the environmental specialist. Project operations. Of course, we've, there's quite a number of plans we've committed to do and required to do including traffic management plans, impact assessments. We'll design the infrastructure as much as possible to blend into the landscape particularly the substations (not transcribable). Although the substation's not viewable from any places.

MS LEWIN: Short question, how high is this substation going to be?

MR HOWARD: Ah, normally, there could be lightening masts which are a bit higher maybe 20 metres. But the building itself it's a normal industrial type building maybe three to four metres. So it's not huge.

MS LEWIN: Okay. (not transcribable)

MR HOWARD: The only high structures will be associated with lightening protection. But they're very thin. And the power lines coming in etc.

MS McCABE: So the blending into the environment, on my understanding, the battery stuff they're usually, they're pre-constructed and they're coming in, they come in white - - -

MR HOWARD: They're containerised.

MS McCABE: - - - as I understand, yeah, they're not - - at the very best an off cream. I haven't, we're not seeing, that's about as good as you're going to get, isn't it?

MR HOWARD: I haven't - - -

MS McCABE: We're not going to get green or greens or muted colours?

MR HOWARD: I haven't personally bought one. There must be some flexibility in the supplier to make them. I mean, they're basically containerised type units. And they're steel, there's no technical reason why you can't spray paint them. So I think that would be a minor - - -

MS McCABE: Is that what you're saying that you're going to be doing that or not?

MR HOWARD: Oh, without getting into the design level we're happy to consider that if it's technical feasible. I can't see why it wouldn't hurt.

MR WILSON: I think there's a condition that require you to - - -

MR HOWARD: Make it blend into - - -

MR WILSON: - - - make it blend in with - - -

MR HOWARD: We see that as part of blending in.

MS McCABE: There was another, just again, there's a worry about them being too dark because of heating. Though I think - - -

MR HOWARD: The solar panels?

MS McCABE: No, the battery - - -

MS LEWIN: The batteries.

MS McCABE: - - - the battery storage.

MS LEWIN: In case of fire.

MS McCABE: Yep. So I think there's been, is it the ones that I've been familiar with, there's been a bit of pushback about darker colours. So I was just wanting to make sure that - - -

MR HOWARD: So on one hand you've got - - -

MS McCABE: - - - what you're saying is actually able to be done.

MR HOWARD: Well, I take the advice of the battery manufacturers. But - - -

MS McCABE: And what do they say?

MR HOWARD: I can take that on notice. But as far as technically feasible it will blend into the - - -

MS MARSHALL: I'm sorry, I can't seem to fix my audio. Can you hear me okay if I just answer briefly that question about the wildlife corridor?

MR HOWARD: Yeah, the species that might use it, Brooke?

MR WILSON: That's a bit better. That's better.

MS MARSHALL: Primarily it's a habitat enhancement program that's on top of what's required for offsets recognising that it will help erosion, it will help water quality as well as create some habitat connectivity. In terms of the species that would use it I would expect they'd be a bit more common species and none of the key threatened species I think it would be fair to say. Most of the threatened species, surveys we did we didn't find the threatened species. But some are assumed to occur and generate credits. So it's probably low likelihood of threatened species usage. It's through fairly degraded country and you can see that the projects being developed to avoid the better quality vegetation as much as possible.

MS LEWIN: And it's non-specific?

MR WILSON: No, no, common species are probably the answer to that.

MS MARSHALL: It came out of some consultation activities that Bruce was doing with the Armidale Tree Group as part of their submission. So it wasn't a recommendation of the Biodiversity Report. It was just seen as an extra valuable contribution the project could make to improve habitat connectivity, water quality and erosion all at the same time by repairing some of the riparian vegetation.

MS McCABE: Thanks, Brooke.

MR HOWARD: Any more on that one?

MR WILSON: Just before you - the last point lighting. I thought I read somewhere in the submissions response that maybe you weren't going to have lighting on site at night time during the operation?

MR HOWARD: Certainly not around the solar panels. The only area would be the substation and the battery area, the contained area. There would have to be enough safety lighting so staff can approach it safely out of hours. But it's all lower than 90 degrees and - - -

MR WILSON: Yeah, yeah, pointing down.

MR HOWARD: - - - down lights, yeah. It certainly wouldn't be flooded with top lighting.

MS McCABE: And just motion sensitive? It's not (not transcribable)

MR HOWARD: And probably motion sensitive. No, no, no. But there has to be a minimum amount on but it's pretty background.

MR WILSON: Okay. Thank you.

MR HOWARD: Soil quality. That shows a typical type of land with a lot of it open grazing and scattered woodland. That's typical of the site to varying degrees. I mentioned this before but 71% of the land is Class 5. It has severe limitations for land capability for cropping. And the land would be returned to its original use when the project's decommissioned. I've got another one I'll show - - I'll talk about that - - That's a nice bit of a panorama of difficult sort of landscape. Lot of grazing, occasional clumps of wooded areas and rocks. Next one? Next one, Phoebe. Oh, decommissioning. All right, so we need to develop a decommissioning and environmental management plan and it would commence within 18 months of cessation of operation of the project. We'd remove the solar, the relevant solar farm infrastructure to 500 millimetres below ground level to return it to its original form. The only exception I would say is it's likely the trasnmit substation because that would then form part of the interconnected transmission network. But that's a fairly small area compared to the rest of the site.

MR WILSON: So throughout what I've read at the moment, all the detail I've read so far, there's a little bit of inconsistency between what is and what isn't coming out of the ground and, I guess, what we're asking you now will, notwithstanding was it the substation, everything will be removed, is that correct?

MR HOWARD: That's right.

MS McCABE: All the below ground?

MR HOWARD: All the below ground.

MS McCABE: Cabling and 500 deep?

MR HOWARD: To 500 millimetres.

MS McCABE: So what's below 500?

MR HOWARD: It says there.

MS McCABE: What is below 500?

MR HOWARD: There could be some cabling and maybe piling, steel piling. We will cut off to within 500.

MS McCABE: For the solar panels. So all the solar panels would have their own steel piling - -

MR HOWARD: That's right. I couldn't tell you off-hand how deep, it depends on the ground conditions how deep we have to pile or what sort of foundations we produce or use. But if the foundation steel went below 500 we're committed to cutting it off 500 below ground level.

MR WILSON: Why is that? Why 500? Why not - - -

MR HOWARD: I think it comes back to what's sensible and - -

MS MARSHALL: I can answer that.

MR HOWARD: Thanks, Brooke.

MS MARSHALL: I think I fixed my audio now too. Is that easier to hear?

MR WILSON: We can hear you clearly. Yes.

MS MARSHALL: Oh, great. Yeah, so consultation with the Department of Primary Industries and Agriculture has set a bit of a standard for these projects that a 500 mils deep, if you've got nothing in that zone then you're not impeding their regular land use activities of the farming operations. We have seen them extend that to a metre deep in good cropping land. But essentially it is just so that the farmer can continue to do his work without worrying about infrastructure underground.

MR WILSON: So ostensibly you could have, you've got 365,000 arrays each with - - I don't know four or two pylons?

MR HOWARD: It depends on the ground what sort of design we do. Because you can do everything what we call a screwed pile to a round bit of steel to actually even having a slab of concrete that's only two or 300 thick and the panels are on top of that. So it's very load-bearing dependent.

MR WILSON: I'm just trying to understand how much is going to be left in the ground. So if you do penetrate the five - - -

MS McCABE: The whole array.

MR WILSON: - - - the whole array you're left with all that steel in the ground? Is that correct?

MS McCABE: That's a lot of steel.

MR WILSON: It's a lot of steel.

MS McCABE: Wouldn't just, I understand Primary Industries, well, I don't quite understand Primary Industries because if I, yeah, this isn't good cropping land. But if I took a tractor and ploughed out the soil I'd probably hit something at some point. But isn't there value in recycling some of that as well like from a sustainability point of view? I'm thinking if it's all the arrays got steel pile stuff - - -

MR HOWARD: Yeah, because Brooke's done a number of other projects, she might have some experience of how it's been handled in other projects?

MS MARSHALL: Okay, yeah, I mean, and that is generally is what developers say to us is that there is going to be really good reason to pull out all the cabling and all the

steel for the recycling value of it. I guess, the intention is not to though make the commitments more onerous than they need to be to keep the consent fairly flexible for these decisions. So we expect, yeah, that the commitment to remove everything below 500 considering the land use of this site is appropriate.

MS McCABE: Okay. I think, because a lot of this says in terms of the solar panels and the solar farm proposals a lighter touch on the land because it can be turned back to essentially what it was originally. So, I suppose, I'm just question mark if I'm going to have an array worth of all this, these, I'm just going to call them footings for the moment, below 500, it's not quite kind of what we have at the moment. You know, it's a lot of, it's a lot of structure in the ground considering the size of the panels.

MR WILSON: Over 215 hectares, I guess.

MS McCABE: It's a lot.

MS MARSHALL: Can we take that question on notice, please?

MR WILSON: Yes.

MS MARSHALL: Because I think we might come back with a clarification there. Thanks.

MR HOWARD: Comes back to almost a policy decision by government.

MR WILSON: Well, I would have thought, you know, it would be desirable to avoid putting anything less than five, what is 500 millimetres.

MS MARSHALL: Our assumption is generally that's the, the mounts come out entirely because they're bored in or drilled in and they can come out entirely rather than have footings. So if we could come back to you with that clarification.

MR WILSON: Okay. Thank you.

MR HOWARD: Okay. Any more questions on that?

MR WILSON: No, no. Fine, thank you.

MS LEWIN: I've got, just out of interest, have you done any test, I mean you must have I suppose, done test core drills into various areas of the site?

MR HOWARD: We have about two years ago. We had a geotech engineers go out there. We didn't do, we did them in areas where we thought, we were trying to find out how much rock there was around the place, like floating boulders we call them. Because that forces you to different sort of foundation because it's very hard to, you can't pile into a big rock. And there were areas scattered basically scattered rocks and maybe a third of the site we probably couldn't pile maybe. But we do have a report on that which I'm happy to give you. Bu it was a very high level drilling in areas where we thought we might be finding rocks.

MS LEWIN: Yeah, I mean it probably just extends the conversation about opportunities to identify whether to one metre you are able to remediate the site in a more comprehensive way than to 500 or whether you can reverse the screw piles and recover quite a lot of infrastructure. It's something that is always interesting.

MR HOWARD: But we have done an initial report on some test spots.

MS McCABE: And just following up, presumably you avoid the rock area?

MR HOWARD: Yeah, because - - -

MS McCABE: It's too expensive - - -

MR HOWARD: - - - look from an economic point of view it's easier to, that's why we were doing it really. It's cheaper to push a pile down than to do rough concrete foundations. So that's why we were doing it. Yeah.

MR WILSON: It could end up being a combination of both so - - -

MR HOWARD: I believe in reality, yes.

MR WILSON: Yeah, okay. I've got it. Thanks.

MR HOWARD: All right anymore? The next one? Just briefly on this one we will and we're required to do an accommodation and employment strategy for the project. We talked about the VPA before with the Council. That's, just the progress of that we've got an agreement in principle of the details and I think they're in the report from DPE. We're having our lawyers do the legal document now ready for signing if and when the project may be approved. But there's no point progressing that to a legal document until we know what happens with the determination process.

MR WILSON: We understand that. It just needs to be executed prior to - - -

MR HOWARD: Construction.

MR WILSON: - - - construction.

MR HOWARD: Correct. So, you know, the core details of that already.

MR WILSON: Yep.

MR HOWARD: I mentioned previously.

MR WILSON: But before you move off that one - - -

MS McCABE: Not so fast.

MR WILSON: - - - we would really like to understand, I mean, regional New South Wales, Sydney - - regional New South Wales there's a housing crisis.

MR HOWARD: I've read that, yes.

MR WILSON: Yeah. We really want to understand more from you how you're going to ensure that your employees particularly those that are coming outside the district will be housed during that peak construction period? So we understand this is a wider issue and it has ramifications for other developments as well. But, I guess, you know, you must have some understanding how it's going to occur if you're going to prepare a strategy otherwise you're not going to be able to prepare a strategy that's very meaningful?

MR HOWARD: That's right. Well, the detail does come out in the combination of employment strategy but we're happy to take that on notice and get back to you with some - - -

MR WILSON: Yeah. It's an issue raised by Council and it's an issue raised by the Panel. We just need to understand, we need more detail when, I don't know whether you've got empirical evidence or data to back up your, to be able to support your establishment of a strategy and how it's going to occur. We also understand there's a bit of a trade deficit - - -

MS McCABE: Generally.

MR WILSON: - - - or a labour deficit or a sort of - - -

MR HOWARD: Tradesmen.

MR WILSON: - - - tradesmen deficit in regional New South Wales as well. So these are two issues we would really like to understand more.

MS McCABE: And just picking up on that we did raise the question with Council and as to whether anyone like there's been regional development up there, other solar farms being built. There seems to be so far only anecdotal evidence about the impact of big projects on a combination and we're just wondering whether you or your consultants maybe aware of other empirical evidence or your experience with, you know, maybe the last, the Metz Solar Farm, and do you know whether that, what impact it actually had? As I said, it's, everyone, housing problem, trade problems and probably in your interest as well because you need to have the workforce to service it.

MR HOWARD: We're happy to get back to you on that one.

MR WILSON: Thanks. Yep. All good, it's fine.

MR HOWARD: Thank you. We're almost at the end of the issues. I think this is the last one. We can go back on it at any time - - Cumulative impacts. That's just in the report as well. But you can see how our project just put a circle around, right in the middle Oxley with a little star, blue star. Metz is north-east. There's some battery projects in the north-west, they're fairly small. Tilbuster which is a bit further north. And there's a very big one at New England which is quite a way away south. And also a potential pumped hydro at Oven Mountain in the bottom right. So having said that there are two approved but not constructed, I'd say very small solar farms immediately east of us. One next door and one a little bit further. They're about 25 megawatts each which is about roughly 10% of the size of ours. So they're fairly contained. But they've been approved but not, I don't know when they're, or if constructed. So that's the context. And we talk about local employment and we will work with the other projects. Although Metz is finished. So it's back to operational phase. There's no nearby construction apart from these two very small ones that I know of in the immediate area.

MS MARSHALL: Can I just jump in? From the work we did too looking at cumulative impacts Ovens Mountain there on the map was the only one that was looking at having onsite workforce accommodation. As far as we could see everyone else was not doing it.

MR HOWARD: I assume because of remote, it's remoteness, I assume.

MS MARSHALL: Yeah, yeah.

MS McCABE: Ovens Mountain, oh, I see it. Oven - - -

MS MARSHALL: Pumped hydro. So all the other sites as far as we can - - -

MR WILSON: Oh, yeah.

MS MARSHALL: - - - pumped hydro (not transcribable) impact. Yeah.

MS McCABE: On the other side of the range.

MR HOWARD: The lake at the bottom and the lake at the top and you pump it up and down. It's a bit like a small version of Snowy Hydro.

MS McCABE: So what's the nearest town to that?

MR HOWARD: Oh, I don't think there is a very near one, is there Brooke? It's pretty remote.

MS MARSHALL: Ovens Mountain, I'm not sure.

MR MARK VILE: It's a bit closer to Kempsey than Armidale. But it's in Armidale Shire.

MR HOWARD: Thanks, Mark.

MR VINE: Or Armidale Regional LGA.

MR WILSON: Thanks.

MR HOWARD: Next one, Phoebe. Oh, there were some other issues. Not that they were smaller just, I guess - - Heritage. Again, we designed the footprint to avoid heritage items. We didn't find anything unexpected to get reported. Also with Aboriginal Group Liaison they were actually physically involved with our digs on the pads. So we had close liaison with and I think we actually invited about six Aboriginal communities or their representatives to be involved in those digs. So we were quite closely involved with them. And also it was, I didn't mention it here, but it

was brought up about the non-listed items like Gara Homestead. We're not aiming to do anything with that. We're not going to knock it down. So we'll - - -

MR WILSON: So it's an associated?

MR HOWARD: It's an associated residence on the land we have a - - -

MS McCABE: It's on the site.

MR HOWARD: On the site. But we have, it goes back to when the horse and carts used to go from Armidale to the coast. It's on that route. Cobb & Co. route. So - - -

MS LEWIN: Occupied?

MR HOWARD: Oh, yeah, the owner lives there.

MR WILSON: And just another question, have there been any previous attempts to have it listed?

MR HOWARD: I'm not aware of any. Brooke, any idea?

MS MARSHALL: I'm not sure. I haven't got - - reference to that.

MS McCABE: It's just, it's nice example of an old - - -

MR HOWARD: Cottage.

MS McCABE: - - - farming house.

MR HOWARD: Yes, yes. Blue stone and - - -

MS McCABE: It's blue stone or something is it?

MR HOWARD: Oh, it's solid.

MS McCABE: Is it the stone from Armidale?

MR HOWARD: I'm not sure. But it's, it was a stopping like an inn, I think, on the way - - -

MS McCABE: Like Cobb & Co.

MR HOWARD: - - - Cobb & Co. trail from the northern tablelands to the coast.

MR WILSON: And so it will be maintained. The only implication is I would think is for the curtilage for a period of time while the development's occurring, is that correct?

MR HOWARD: That's right. We won't, but it doesn't, it's not covered by any of the development of the solar panels. We're not planning to do anything with it.

MR WILSON: Yep. Okay.

MR HOWARD: But it doesn't have a heritage listing on it though.

MS McCABE: But it's occupied?

MR HOWARD: Oh, yes. The landowner lives there.

MR WILSON: So it's associated development, gotcha.

MR HOWARD: It's associated.

MS MARSHALL: We summarise it as a house with workers' accommodations and working sheds associated with it.

MR HOWARD: It's a working farm house.

MR WILSON: Okay. Thanks.

MR HOWARD: Noise. We'll do it to all relevant standards and there's hours of work. We've done a noise study and make sure that's adhered to. The dust, I guess, that comes out of the solar water management plans to be developed including or reducing any dirt that goes onto the main roads or dust generated with water treatment like any normal construction site.

MR WILSON: You have a 20,000 litre tank I presume, sorry, not presume, I read and then there's a 1,000 litre water truck, is that right that will be used?

MR HOWARD: I think that was what our consultants recommended.

MR WILSON: Yeah. Okay. Thank you.

MR HOWARD: Hazards and risks. That covers things everything from fire and other floods issues. We have, we've had appropriate input from the fire authorities and there will be plans developed for emergency management and bushfire response.

MR WILSON: Just on that so we know there's a requirement for an APZ.

MR HOWARD: Yes.

MR WILSON: You've got room, I presume, the APZ hasn't been established yet - - any plans, is that right?

MR HOWARD: I believe, I don't believe it has. Brooke, has it?

MS MARSHALL: No. It would be contained within the development footprint. Basically it's that 10 metre defensible space between the asset and it can include roads.

MR WILSON: We may need to understand where, I guess, what we really need to understand is whether or not you have room for the APZ in the appropriate places? It would probably be useful for us to confirm that.

MR HOWARD: So commentary on the APZ.

MS McCABE: Well, usually you'd get it, there would just be a plan that just says where the APZ is.

MS MARSHALL: The indicative layout should show that the APZ is fully within the development footprint.

MR WILSON: Okay. All right.

MS MARSHALL: The intention is that the development footprint captures everything the project needs to do. So certainly there's no clearing, there's no trucks driving, there's nothing happening on the other side of that hatched area.

MR WILSON: Okay. We'll look at that. I'm not quite sure, we just need to understand, we just need to confirm that there is that space because the way it reads at the moment you're not going to have to establish it until after consent maybe forthcoming. So you know what I mean? So we just need to understand that the APZ can be accommodated.

MS McCABE: The indicative footprint's just colour on a map. It actually doesn't tell you the elements of it. So you just, that's the array. And then you're not sure whether the cross-section of the landscape plan which change the landscaping and sometimes an APZ. So again, it would be just diagrammatically it would be better to actually show it as either, you know, clearly on the footprint or - - -

MR HOWARD: We'll take that on notice.

MS McCABE: - - - it might just have to be a bigger scale or something.

MR WILSON: And whether there's any conflict between as Alison's saying between the proposed landscaping and the establishment of the APZ. On the landscaping, we'll come back to it, I guess, but it's all on your land, isn't it, is that correct?

MR HOWARD: Yes.

MR WILSON: Isn't there landscaping at the receptors as opposed to the source?

MR HOWARD: That would be under negotiation with the appropriate landowner. We'd offer it.

MR WILSON: Okay.

MR HOWARD: (not transcribable) appropriate species and locations. But obviously we'd have to get permission or agreement.

MR WILSON: Sure. I just didn't see any conditions in relation to off site landscaping.

MR HOWARD: In words we do - - a lot of the sites when I visited them.

MR WILSON: Yeah, yeah, no, I appreciate that and you're committed to it. I understand that. But I just don't see anything which requires you to do it apart from your own commitment.

MR HOWARD: It's a very site by site specific design too.

MR WILSON: Yeah. Which means you have to go to every house and you have to reach agreement with these - - -

MR HOWARD: True.

MR WILSON: So we need some certainty in relation to that occurring. Anyway, that's okay, we'll talk about that. We've got to time to talk about that so and how that maybe handled.

MR HOWARD: Accommodation workforce. I think we talked about that previously, yes, that's an important point. And community benefit I think we've covered that.

MR WILSON: Yeah, I think we've covered community - - - Do you have any more questions on that?

MS McCABE: No, I didn't have any more on the EPA.

MR WILSON: Are we at the end yet or - - -

MR HOWARD: Yeah, that's the end. I'll just repeat the table again and you've read this but that's just the closing paragraphs for the DPE which is approvable subject to determination by the IPC. That's it as far as - - -

MR WILSON: Thank you so much.

MR HOWARD: I'm happy to go back over anything that you might - - -

MR WILSON: No, no, well, we might just have a few questions that's all. Noting that we've already asked a few. I think, do you want to start talking about road upgrades?

MS McCABE: Yeah. Yeah. I'm happy to. Do you want me to ask?

MR WILSON: Yeah.

MS McCABE: Yeah. So your, the consent, I suppose, if I go to the consent Appendix 5, sorry, the draft conditions of the consent Appendix 5 identifies a number of road upgrades. Yep. And your transport traffic impact assessment also identifies a number of road upgrades. These I'm taking, and correct me if I'm wrong, they're fundamental and essential to this application? So they actually are required because of this application and it can't operate without them. So there's a few key questions with those. I haven't seen any particularly detailed plans. So I'm just wondering where you've got to in terms of broad concepts? And do we understand that these road upgrades are all fitting within existing road reserves? Is there any need, the Appendix

talks about widening but I'm not clear whether that's widening within the road reserve or whether that's taking other land? And then whether or not there's any and again, I haven't been out there, but is there any vegetation loss arising out of these roadworks in a general sense? And if there is, has the BDAR dealt with that. And I think the BDAR said you'd dealt with some. But I wasn't quite clear about the degree and extent of works. And the main one is, is it within all, within the road reserve and are we getting vegetation loss?

MR HOWARD: I'll just talk overview or broadly then Brooke might answer or speak in some detail about the BDAR aspects. On page 25 of 30 of the conditions, there's a Google image of a page - - - the conditions (not transcribable) of the assessment.

MS McCABE: Which condition? I was looking at - - -

MR HOWARD: At page 25 of 30. So that's the crossing. So that's, the section of the road we're talking about 'cause our, the property goes both sides of Gara Road. So we're upgrading the section of Gara Road. It's probably less than a kilometre that joins up different property access points which includes a causeway across the river. So because we'll own the land both sides of the road, if we need to realign the road easement it will be between us and the Council because we're not dealing with any other landowner. And we're looking to realign it as per that photo at the bottom to improve the curves and the upgrade the causeway across the river.

MR WILSON: Okay. I guess, the question is did the BDAR cover that?

MR HOWARD: All right. Brooke?

MS McCABE: Yeah. All the road upgrades are even if they're not in the road reserve you own the land either side - - -

MR HOWARD: That's right.

MS McCABE: - - - so you will be able to dedicate - - -

MR HOWARD: We'll work with Council.

MS McCABE: - - - well, again, if there needs to be dedication we need to understand that, I suppose. So just trying to understand whether or not - - -

MR HOWARD: We'd work with Council to realign the road easement - - - where it's going to be. Make a better road.

MS McCABE: So when I looked at Appendix 5 there's the Armidale landfill access road - - -

MR HOWARD: Yes, that's one part.

MS McCABE: - - - that's to widen and seal. That's the same, is that Gara Road as well?

MR HOWARD: No, that's quite separate.

MS McCABE: Yeah. So again, I'm just trying to get - - -

MR HOWARD: The Council landfill roads are far north. That's the main access to the site. So we're going off an existing tarred road into the landfill.

MS McCABE: Yes.

MR HOWARD: Building an intersection - - -

MS McCABE: Yes, I saw that.

MR HOWARD: - - - about 150 metres south of the highway. Again, that will be under our control that road. The Gara - - -

MS McCABE: Either side, is that all your land around - - -

MR HOWARD: Council -- our land or Council. So - - -

MS MARSHALL: Am I able to share a screen, would that be all right?

MR WILSON: Sure.

MR HOWARD: Yeah, there's page 24 shows it.

MS MARSHALL: Are you in the amendment report? Like page 30 for the amendment report would be nice to show. So I'm not very good with Zoom. I'm much better with Teams in terms of sharing. I'm not sure how to do it. Can anybody share the amendment report page 30?

MS McCABE: Yeah, my 34's not - - -

MS JARVIS: What page number was that, sorry, I can share it?

MS MARSHALL: Page 34, which shows figure 6.2. It's just a nice summary of how the BDAR dealt with the road upgrades. It shows the footprint we assessed. Is anyone able to share that on the screen?

MS JARVIS: I'm just pulling it up. I'll be sec.

MS MARSHALL: Perfect. Thank you. So it shows you the road upgrades at the top are captured for the site access. We actually worked pretty closely with the heritage and the biodiversity teams to find that route that then travels north-south through the project site down to the array area to minimise the impact. So you'll see that there's, there's not much native vegetation clearing at all on that route. That is, as such it's not generating any offsets it's coloured blue.

MR WILSON: But it's being considered, yeah?

MS MARSHALL: Yeah.

MS McCABE: So it's important that it stays on that route presumably?

MS MARSHALL: Absolutely. Yeah, that's our development footprint. Yeah. So if you look just south of the array there you can see the red hatched Gara Road Reserve as well. It's captured, you know, as a worse case, a nice broad corridor along that road and we're offsetting that because it is mainly vegetation so it's captured.

MS McCABE: It's a very closed small plan. So that hatched area for the Gara Road, so did you just do the Gara Road Reserve? Is it 20 metres? Did you do 25 metres? Did you do 40 metres? I'm not clear.

MS MARSHALL: Yeah, I'll come back to you with that.

MS McCABE: Yeah, just again because if I'm hearing oh, we might do a bit of realignment and dedicate some land and bit here and a bit there, what did you actually accommodate? So the Gara Road and the entry up the top they're the only things happening on public roads. So Appendix 5, so Waterfall Way and Grafton Road, is that the top one?

MR HOWARD: That's the top one.

MS McCABE: It's the top one. And again, that looks like there's some vegetation there. So that width and what you considered there and do I take, Brooke, do I expect that you would say that has to be fixed because if I go and deviate from that it's going to upset the BDAR, isn't it?

MS MARSHALL: Well, yeah. And that's why that development footprint that shown in black there, that's what we're asking for consent for. So all project impacts must be confined within that area. As soon as you're outside that area you've violated the assumptions of the assessment. So that's one of the strictest kind of requirements of the consent is that is included as Appendix 1 and there's approval only for impacts within that black development footprint.

MS McCABE: So it's just so just being clear that if there's that wiggle room in terms of road alignments 'cause there's no detailed plan. So but that's been accommodated. So those depths or widths you said that becomes specific to where - - -

MS MARSHALL: Yeah. And they've all been (not transcribable) by heritage as well.

MS McCABE: You've got one heritage and two engineeringly because the engineers will come along and say, gee whiz, we need to do this and flatten something out. But it can only occur in those, in the - - -

MR HOWARD: We have done a degree of detail there. If you look at that one with that photo down the bottom we just looked at page 24, 25 and 30. You'll see there's a diagram above it. He's done actually quite an accurate land, our civil engineer - - -

MS McCABE: There's not one dimension on the plan though.

MR HOWARD: It's to scale. Across the causeway. There's quite a bit of engineering detail there.

MS MARSHALL: Yeah, I think something that is actually surprisingly unusual about this project is while you might still think it looks quite broad, it's actually a lot more detailed than most of the state significant solar farms we've worked on. And that's because of the number of the submissions we got, we did a lot of extra work between the EIS and responding to the submissions. So it has become a lot more defined in terms of where we will impact and won't impact. Generally, the developers like to keep that as broad and flexible as possible before the detailed design phase. But a lot of that thinking and there's some engineering concept drawings of the Gara River crossing have been undertaken for this project which wouldn't usually, you know,

happen until post approval and when the EPC contractors are brought on and we have a detailed design being developed.

MS McCABE: Except there's stuff here that would need to be known 'cause it impacts, you know, the Gara River crossing, for example, you know, crossing a river, crossing riparian areas. You'd have to have at least a concept for us to understand the impacts of that. So that would have been needed.

MS MARSHALL: Yeah, yeah.

MS McCABE: Just sticking with roads for the moment, we spoke to Council and I didn't quite understand. But there's something about your access through the landfill that is coming through an existing Crown - - -

MR HOWARD: At the moment, yes. The existing road which by the way garbage trucks drive down it. It's a decent road. It's a two-way asphalt road. It's actually what happened when they built it they didn't get an easement through the Travelling Stock Group or Crown reserve. So they're now doing an administrative fix up with Crown Lands and they've started it, the surveyors are up there the other week, to actually dedicate that as a council public road. So it's purely an administrative tidy up. So but at the moment, yes, I guess, you'd call it a private council road going through a travelling stock group that's its legal status at the moment. But it will be dedicated and raised as a public road in future. Does that answer your question?

MS McCABE: All right. I think Council's going to try and give us a bit more information about that as well. And just what type of arrangements do you need for - I understand you're coming through the landfill site and using the access through the landfill?

MR HOWARD: We'll be coming about 100 metres on the road into the landfill site and then turning east.

MS McCABE: Left.

MR HOWARD: Left or east. So we just, once it becomes a public road we just need to get to the intersection appropriate road standards and we have a right of access. Of course we'll work with Council from a legal point of view. We just need to do the appropriate road standards to an existing public road. And then the rest of it's on the land which we'll have an easement across.

MS McCABE: An easement across.

MS MARSHALL: And seek a permit from Council as (not transcribable)

MS McCABE: Yeah, that's what I'm just trying to, what are you actually seeking from Council? Are you getting an easement or a licence agreement?

MS MARSHALL: It will be a permit for any road upgrades because they're the asset owner. So they have to sign off on the detailed designs through a section 138 road permit. As, yeah, if there's no other improvements I would say roads are just a right of access agreement. I'm not sure about the legality.

MS McCABE: Just so I understand you, you're coming in off a public road but I thought you were coming through the landfill? You're still on Council land across the landfill site?

MR HOWARD: No, we're not coming across the landfill. No.

MS McCABE: It's just, you're just using it - - -

MR HOWARD: The landfill's probably another 800 metres further south. So we're just using the landfill access road not the landfill site proper.

MS McCABE: So you're not using any Council land to access your facility?

MR HOWARD: I suppose only where the intersection is between where the tar, the edge of the tar is and the fence which is probably about three metres we are. Yeah, but not Council land per se, no. Yeah. We're not going anywhere near the landfill site proper.

MR WILSON: We're visiting that site aren't we?

MS McCABE: Yeah.

MR WILSON: We are. It's our number one stop. Just look, just look we're taking too much time, can I just ask you about waste management? I guess it comes down to the lifecycle of the panels in essence. What is the life span of a panel generally?

MR HOWARD: The advice I've had is 20 to 30 years. What would happen in reality you honour to the efficiency, 'cause they do degrade very slowly, the electricity output. So we'd make an economic decision somewhere in that 30-year lifetime whether it's worthwhile or not - - -

MR WILSON: Right.

MR HOWARD: With whatever technology is available at that time. For a starting point suggesting a 30-year lifetime.

MR WILSON: Okay. So on that basis, there's unlikely to be parts of, I presume, some might fail or be damaged or somewhat. What's the likelihood of the need to replace them in that 30 years? And how would you, I've heard from Council that they may be recycled or what's the word?

MS LEWIN: Or taken interstate.

MR WILSON: Taken interstate or somewhere else to be reinvented or something.

MR HOWARD: What's happening with the recycling - there's a big debate at the moment or discussion about this about recycling solar panels. There's a lot of research happening with it about how to cost effectively recycle them and separate the elements to reuse them. What we can commit to and will commit to is we'll use whatever technologies are available at the time to recycle as much as possible. But the fact at the moment is probably the way they're going to recycle in 20 or 30 years' time doesn't exist now. So we are happy to commit to recycling to whatever the best technology at the time is to recycle. But - - -

MS MARSHALL: Separately we're some good work come out of Wagga from a group called Solar Professionals. So where a number of panels might be shown to be performing poorly, they might take those panels off the site put them on the surf lifesaving club or use them for some other purpose. Repurpose them and replace them with better performing panels. They're also pioneering delaminating technology so that all of the elements could be recycled. So it's certainly a growth industry. There's some, yeah, university involvement in it.

MR WILSON: I guess the emphasis behind my question is more about avoiding landfill than - - -

MS MARSHALL: Yeah, yeah, yeah, absolutely. That, we feel in a strong position to make commitments around that at this point in time all of the end chain people aren't there to decommission this plant today but I have no doubt that in 20 to 30 years' time and that there will be a number of other economic opportunities coming out of outfits like the Solar Professional Group that are pioneering kind of optimisation of the cells and reuse rather than just recycle and disposal.

MS LEWIN: Yes, and Council did say that they're interested in discussions that would provide in the not too distant future expertise in the REZ to do exactly that. A discussion that could be had to support such socio-economic benefits.

MR HOWARD: I'd support that but it's an emerging industry - - -

MS MARSHALL: I think the strength of the commitments of all of these projects that are coming out are all the same and are going to drive this industry - - - 100% recycling commitments.

MR WILSON: Okay. Thank you. That answered that question.

MS McCABE: I had two questions. At the moment your report talks about your PV solar panels mounted on either a fixed or tracking system both about which you consider feasible. And you've talked about fixed tilted structures in the northern rotation or a east-west horizontal tracking system. So I take it you haven't chosen which one and you did mention earlier that you might have a combination.

MR HOWARD: Between fixed and tracking, that's right.

MS McCABE: And then I just wanted to understand 'cause the glare report and I'm not sure what the visual assessment report assumed. But the glare report then assumed the PV system orientated north-south mounted on a single axis horizontal tracking system overall height of four metres. My question is does the different product, if you like, make any difference to the visual assessment and glare reports? So if you've got, either use fixed mounted - I'm just going to say at four metres or a tracking system, what does that do to the assumptions and the report findings?

MR WILSON: And in answer to that question can you please explain to me the difference between red and orange glare?

MR HOWARD: It's to do with wavelengths.

MS McCABE: - - - now we know.

MR HOWARD: But just going back a step the whole point of a solar panel for its efficiency purpose is to absorb sunlight not to reflect it. That's the very essence and what the researchers are pushing the boundaries on. So inherently solar panels themselves are not inherently reflective, right. In fact, I'd suggest probably you might get more off the structure reflections than the panels themselves. But Brooke - - -

MS MARSHALL: Yeah, in terms of - - -

MR HOWARD: Brooke, have you got any comments on that?

MS MARSHALL: - - - in terms of impact assessment assumptions obviously because the developers want enough flexibility to make decisions later on and their assessment can't be too complex. We're always looking for a worst-case assumption. So if the tracking at a certain time of day is going to be the worst impact we could have in terms of glare then that's what we're looking at.

MR HOWARD: They assess that.

MS MARSHALL: That's what we drive their consultants to look at. But we can come back to you with specifically those assumptions.

MS McCABE: It's quite critical, I think, because visual assessment and the glare is being, in particular in submissions, so if you haven't landed then it's just understanding how those reports and - - -

MR HOWARD: They're the basis of it.

MS McCABE: I don't know whether there is or isn't any difference. But it's just that the reports have dealt with both and the conclusions don't change or they've dealt with one and actually we say this. So it's, as I said, the glare report and I happen to, the glare report was specific. And I don't, again, you know, I understand your point about solar panels wanting to absorb sun. But it's been specific and made an assumption but that's actually not what the application is at the moment.

MS MARSHALL: It will be a worst-case assumption to cover us down the line and we make those kind of assumptions in a number of different ways even to support, you know, the project post-approval and reduce the need for modification applications. We're always trying to lean into that, that worst-case assumption. But I'll clarify what that is.

MS LEWIN: Do you have the data on the panels that you're currently working on?

MR HOWARD: The exact panel, well, we did some panels which are 670 watt panels that we use for our layout purposes. But with the advance of technology if the project were approved - - - it may be 12 months or more before the EPC contract has started to

actually look at really buying panels. The technology may have improved again even. But - - -

MS LEWIN: Is the efficiency increase also related to the surface treatment of the panels?

MR HOWARD: Yeah, it's related to it. They're a slightly bigger areas but not much. Plus more efficient technology going into how to convert sunlight into electricity which comes out of the technology industry research. They're just becoming more efficient quite quickly.

MR WILSON: So Brooke before we move off the glare, what is the difference between - - -

MS MARSHALL: Red, yeah, red, I understand has potential to injure you. Yellow, I think, you still have potential for that an after effect, like if you look at the sun and then look away you can see the image still.

MR WILSON: Okay. So it's like looking at the sun without sunglasses?

MS MARSHALL: It would be nothing like looking at the sun without sunglasses.

MR WILSON: I'm not talking about the intensity. I'm just talking about the difference in terms of - - -

MS MARSHALL: Yellow. Getting that after effect. Yeah.

MR WILSON: Does it harm?

MS MARSHALL: Yeah. We've got a nice graphic we can find somewhere. But basically solar panels are just nudging into that yellow territory of, yes, there is potential for some of that after effect but not there is not any potential for retinal damage. This is, you know, it's not that kind of development, as Bruce said, the most (not transcribable) is probably going to come off some galvanised panels for the first couple of years until they weather a little bit.

MR WILSON: Yep. One more before we get to landscaping again. You intend to extract water from the Gara River, is that correct?

MR HOWARD: Go through the licensing, Brooke, about water?

MS MARSHALL: Yeah, I'm not sure that we do.

MR WILSON: I thought I read somewhere that you'd access water from the river through a water pipe but there's a statement that there's no other infrastructure apart from the causeway crossing.

MS MARSHALL: Yeah, normally councils have water standpipes you can purchase that water, you can seek to have access to that water. Most of the consents are coming through now though to say, you know, if you don't have access to enough water for your project you'll limit your project to the, you know, available water supply so that you don't - - -

MR WILSON: Yeah. But you've got plenty of water here. Seemingly there's harvestable rights. You're going to harvest aren't you off your - - -

MS LEWIN: Panels.

MR WILSON: No, not off the panels. Off the building, off the building.

MS MARSHALL: Just for operational, yeah, (not transcribable) and such.

MR WILSON: But from what I'm reading there's sufficient water both to construct to operate. But you may need to, for potable water you may need to construct, is that right, you might need to bring in water from Council, is that correct? Anyway, we can confirm that. So we'll probably have more questions throughout the process which we'll probably put in writing to you. But I know we're firing a few at you today. But do you want to ask - - -

MS McCABE: I had just a broad landscape question. 'Cause your mitigation measures you're putting forward are requiring additional landscape, but the only, am I correct, and I don't, I haven't gone through everything. But the only reference to landscape is the little green on the array plan and then there's a cross-section in the, one cross-section in the more visual. I'm just trying to look, what depth of landscaping are you proposing? Have you done any work on the types of species and how long is this stuff's going to take to grow? And what are you doing in the event of fail? How, you know, does it need to be watered? How much water do we need? Because this is quite critical because what you're saying to the panel is that this application's all right subject to these mitigation measures and one of those mitigation measures is this landscaping in particular places. So what information do we have other than one cross-section and a green blob on some of the plans in terms of how you're going to deal with this?

MR WILSON: And I think the second aspect to that is the screening you intend to undertake at the receptors - I know that's separate, it's different. But we need some certainty in relation to - is there a dispute resolution outcome? I mean, what happens if you're in dispute with some of these landholders where, you know, they don't believe they're getting the screening that they thought they were getting. These are things that we will need to understand how that's going to occur. At this stage, we don't really have a lot of detail apart from your visual impact assessment saying that, you know, it's moderate subject to or it's low subject to screening. I don't know whether that's onsite screening, I don't know whether that's the screening you did to put around the outside or it's screen that you intend to agree to put on at that receptor.

MS MARSHALL: Yeah. So the landscape plan I'm pretty sure it's just an appendix to the Landscape and Visual Impact Assessment is just specific to onsite screening. And the requirement for it is really triggered when you have a more than a moderate visual impact. So we have one of those. When we have a low visual impact rating for all the other receivers and viewpoints mitigation's not required but the landscape plan leans into, no, we think it's appropriate that we do some extra screening. So just to put it in the context about what's driving it, in terms of commitments like a detailed landscape management plan setting out monitoring requirements and success and mortality replacement procedures and things like that, you know, that will be one of those management plans like a biodiversity management plan that's prepared and endorsed by the Department of Planning before construction. They generally and I think we've got some specifics around different areas of this plan are generally two or three plant species wide, rows wide. And they're absolutely always looking to use native species from the area that are suitable to softening the impact. So, yeah, native trees that are providing a bit of habitat as well as just blending into the landscape.

MS McCABE: Can I, Brooke, can I just be clear, when you said your landscape plan, the only one that I've found so far, you know, is it refers to 6-10 which is the green blobs on the array plan. And then I've got a cross-section that's at figure 6-9. So I think it's come from somewhere. But it's slightly different from figure 9 in the visual assessment report. So I just want to be clear that I'm looking at the right stuff because I'm not - - -

MS MARSHALL: Seeing that level of detail.

MS McCABE: - - - I'm not seeing a - - -

MR KYLE MERCER: I can probably step in there. This is Kyle from NGH - - the co-office. There's no like draft landscaping plan. But there are some landscape principles in the visual impact assessment section 9.4. And it just gives a - - -

MS MARSHALL: This was the one that was attached to the EIS not the - - -

MR MERCER: The amendment report.

MS MARSHALL: - - - the amendment report.

MR MERCER: Yes.

MS MARSHALL: So it's updated for the new layout.

MS McCABE: I've got 9.4.

MR MERCER: So it's brief but it does show a bit of a schematic of the typical onsite planning and that will go into the landscape management plan.

MS McCABE: Well, I just again - we looked at the interface between the national park and you looked at and then there's planting there. So I think there needs to be, it's either going to be 10 metres deep or it's 20 metres deep. It's plants that are going to grow to X scale because they have to or they don't. How is that actually going to occur? Just again, I've seen framework and landscape strategy documents that probably give a bit more information than what we've got here for smaller solar farms than this. So again just I think probably a little bit of a level of detail missing. And, you know, those things, what do you do when drought occurs and everything dies? How's that going to get dealt with?

MR WILSON: So Brooke, can I just confirm that there's only one receptor that requires onsite vegetation screening? Is that correct?

MS MARSHALL: Yeah, I believe it was, R4 has a moderate level of impact. Everything else has a minor impact.

MR WILSON: Yeah, so that's the only one that requires some sort of (not transcribable) agreement in terms of planting at the receptor?

MS MARSHALL: No. It, it would trigger the requirement for mitigation in some sense. So in this sense, you know, we've got onsite screening planting. So that's mitigation the project's committed to.

MR WILSON: Oh, so it's on your site not their site?

MS MARSHALL: On our site. Yeah. So anything the project does additional to that with neighbours offsite is kind of above and beyond to be good neighbours and to do - - -

MR WILSON: Okay. So I'll ask another way. The impact assessment doesn't require you to do anything but increase your landscaping on your site to mitigate those views?

MS MARSHALL: Yeah, we need to figure out a way, yeah, if it's at moderate to mitigate that somehow. And I want to make sure I come back to with exactly what the commitment is with R4. So if I can - - -

MS McCABE: Yeah, maybe take it on notice because I do get a little bit worried because when I read, when you look at the distance to the dwellings and I look at the comparison between the EIS and the page 17, while your visual rating's low, and I'm just going to pick R3. You just say, screen planting. Your revised mitigation measures then says "Screen planting could be undertaken in consultation with the landowner of R3 to assist in screening views." To me that's saying, well, yes, we do that. That's offsite. And that's, they're the words. And then, yeah, it's the way it's been expressed to say that you're anticipating that that would be occur. 'Cause that's in the mitigation column. So I'm going to just say well, that's what you're putting forward.

MS MARSHALL: Right. I'll get back to you on that. Thanks.

MR WILSON: All right.

MS LEWIN: Can I just ask a question about the panels and water harvesting? So obviously on the kinetic panels there's not an opportunity to harvest water. So on the fixed arrays there generally is a great opportunity to harvest water or to incidentally - - -

MR HOWARD: (not transcribable)

MS LEWIN: (not transcribable) there's such a substantial area proposed for these vegetations, screenings/plantings. Where is the water going to come from because, I mean, the climate's not going to be that reliable (not transcribable)

MR HOWARD: Well, it's possible that there will be dams onsite. I imagine that's where it would come from. So are you talking about operational phase - - -

MS LEWIN: Yeah.

MR HOWARD: - - - for watering plants? Brooke?

MS MARSHALL: (not transcribable)

MS LEWIN: (not transcribable)

MR HOWARD: A channel, a channel.

MS LEWIN: And you can pick it up clean, take it to a storage tank and it just becomes this constant feed even at night when it's in drought in deserts there's always dew and the condensate is always taken away. It seems that in terms of your ESD performance and your operational requirements it would be a lost opportunity not to have that as part of your - - proposal. Maybe it's a comment rather than and it's also a question.

MS MARSHALL: What I've seen with other projects, I guess, it's to remember, it's not a garden. The idea is to plant trees - - -

MS LEWIN: I understand that.

MS MARSHALL: - - - that are suitable to this landscape and can persist in these conditions. And that a lot of effort goes into the preparation and establishment of them. And then there's certainly monitoring and requirements to replace if they're not keeping up the amount of success, basically a certain level of mortality is okay but after that they need to do supplementary planting. A contractor, an operational contractor takes that job on and drives around with a water truck to where required in, you know, specific seasonal conditions to supplement the watering. But basically it's front loaded into the establishment phase to make sure you've got the right species set up at the right time. But I absolutely agree it's, there's been some lessons learnt in the last couple of years on projects as we've gone through the drought and then flooding about, you know, how we make these commitments more certain.

MS LEWIN: So if there is a drought and you're relying on someone driving around with a water truck you will be the last in the priority line. And having worked on remote projects a lot it is a significant issue. You take the opportunity to develop

operations that do harvest in this much and in an effective way over the life of the project. Something perhaps to think about.

MR HOWARD: Thanks for the comment.

MR WILSON: One more question.

MS McCABE: One more question. Upgrading the causeway, do I take it that we now have flood free access or are you going to get isolated there?

MR HOWARD: I wouldn't call it flood free. Flood reduced.

MS McCABE: Flood reduced. So it means, this is from an operational point of view, so this is a large solar farm, important for the grid, what does it mean if it gets isolated in the event of a flood?

MR HOWARD: First of all the middle portion - it will make more sense when you get there. But that top, the north-western portion was accessible all weather from the new access route up at Grafton Road and Waterfall Way. The bits in the south-east you need to go across the causeway to get them via the main access. If, now remember this is only probably a relatively short period, so if there was no access there and it was just, mostly would just operate on its own. But if there was a safety issue where they needed to be isolated we'd just turn them off until - - -

MS McCABE: Oh, you can turn it off?

MR HOWARD: Yeah. Just (not transcribable) cables of those portions until the flooding risk receded. So that would be a last resort. But that's, you can do that. So you just turn that bit off. If it's that heavy rain you probably wouldn't be getting much solar anyway. The other interesting thing is about six houses in that, what I call middle bit, island a bit, 'cause there's small creeks on the western side of Gara Road as well. They're not as big as Gara River but they do get full of water. They've been isolated for days at a time. And in my talking to them they see this project as being a huge advantage because we give them emergency access north through the solar site up to the highway. And they see that as an emergency access route to get out.

MS McCABE: Yeah, it's not - - -

MR HOWARD: Because at the moment they're totally islanded.

MS McCABE: The question was more about important infrastructure to have in the event that you can't get to it, what does that mean? And I can't imagine, well, I'm not sure how many times a year is it likely to occur? And if, you know, does that affect, what are the implications? Is that, you know, a problem for even relying on electricity if you're turning it off?

MR HOWARD: It's infrequent and (not transcribable) worst-case it would just keep running. And if there was a safety issue we'd isolate that area of the solar farm back at the substation. So it's manageable.

MS MARSHALL: For other projects where they've been more flood prone, like we've realised there's a significant risk during construction for workers and equipment during construction if there was a flood and there's been a flood protocol developed to go with construction. But in operation, I think, because of the nature of the development it's - - -

MS McCABE: You haven't got a workforce onsite staying over or anything like that?

MR HOWARD: No.

MS McCABE: It was more about the importance of the piece of infrastructure what does not being able to get to it in the event that something's wrong and how, you know, again, like anything else, you know, suitability of putting major infrastructure in areas that might be isolated. But it's (not transcribable)

MR HOWARD: It's manageable.

MR WILSON: Okay. Look, thank you all for coming. I know we've gone a long time and I appreciate your patience. There's a number of questions that have been taken on notice. We back that up with an email, do we normally? Yep. So Bruce we'll send out an email of what's been taken on notice. And what's our expectation in terms of response to that?

MR BRADLEY JAMES: Hi, Chris, I might be able to jump in there. I think from our perspective it will be great to have that, potentially before the public meeting. But just noting that all submissions on the project will close on the 25th of October.

MR WILSON: Okay. As I said and there may be further questions that arise from our further reading. We've got a meeting with the Department next week. And then as you're aware we have the public meeting the week after.

MR HOWARD: Yes.

MR WILSON: And you're attending and you'll be giving the presentation?

MR HOWARD: I will.

MR WILSON: The Department's also been asked to attend that. They will be attending in person. So there may be further questions that come out of that process. But we'll, at this stage, we'll just continue to work on. If you could answer those as expeditiously as you can, we'd appreciate it.

MR HOWARD: We will, we'll work on them.

MR WILSON: And thank you very much for your presence everybody. Much appreciated. I guess, we'll see you in two weeks' time many of you.

MR HOWARD: And we appreciate this opportunity to talk.

MR WILSON: Thank you.

MS MARSHALL: Thank you.

MR WILSON: Okay.

MEETING CONCLUDED **[2.12pm]**