New South Wales Government
Independent Planning Commission

TRANSCRIPT OF PROCEEDINGS

RE: GLENDELL CONTINUED OPERATIONS PROJECT (SSD-9349) AND MOUNT OWEN CONTINUED OPERATIONS MOD 4 PROJECT (SSD-5850-MOD-4)

APPLICANT MEETING

COMMISSION PANEL:	DIANNE LEESON (Chair) PROFESSOR SNOW BARLOW ADRIAN PILTON
OFFICE OF THE IPC:	CASEY JOSHUA JANE ANDERSON STEPHEN BARRY
APPLICANT REPRESENTATIVES:	CHRIS GERARD JASON DESMOND DAVID HOLMES BRADLY SNEDDEN TIM WALLS SHANE SCOTT
LOCATION:	VIA VIDEO CONFERENCE
DATE:	11.30AM, THURSDAY, 10 MARCH 2022

TRANSCRIBED AND RECORDED BY APT TRANSCRIPTIONS

MS LEESON: Well, good morning and welcome. Before we begin I would like to acknowledge the traditional owners of the land from which we virtually meet today, and pay my respects to their Elders past, present and emerging. Welcome to the meeting today to discuss the Glendell Continued Operations (SSD-9349) and Mount Owen Continued Operations Mod 4 (SSD-5850) projects, which are currently before the Commission for determination. The Glendell mine forms part of the Mount Owen Complex located in the Hunter Coalfields in the Singleton local government area, and the application for the Glendell Continued Operations would extend the life of the existing operations by establishing a new mining area to the north of the current Glendell pit to enable the extraction of an additional 135 million tonnes of run-of-mine coal over 21 years.

While the project would continue to rely on existing infrastructure, including the Mount Owen coal handling and preparation plant, rail loop and existing Glendell mining fleet, it would require the development of a new mine infrastructure area, including associated infrastructure and services, along with construction of new heavy and light vehicle access roads. In addition, the project would involve the realignment of a section of Hebden Road, diversion of Yorks Creek and relocation of the historic Ravensworth Homestead.

My name is Dianne Leeson. I'm the Chair of this Commission Panel, and I'm joined by my fellow Commissioners, Professor Snow Barlow and Adrian Pilton. We are also joined by Steve Barry, Casey Joshua and Jane Anderson 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 that Commissioners ask questions whenever an issue is required to be clarified. If you are asked a question and are not in a position to answer, please feel free to take the question on notice and provide any additional information in writing, which we will then put up on our website.

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

So welcome, we've provided you with an agenda. Before we start, we probably should do some introductions around across to Glencore participants today for our transcription service and also that we can address you by name when we meet you. And as I say in the opening statement if you could say your name before you speak for the first time, that's really helpful for the transcription service. So after you've done your introductions we'll get going with the agenda.

MR SCOTT: Shane Scott from Glencore. So just before I introduce the team that's with me today, I'd like to also acknowledge the traditional custodians the Awabakal People, the land on which we sit this morning. And also importantly the Wonnarua People as well within which the project is situated and also recognise the Elders past, present and emerging. So thank you for the opportunity to present to you this morning and meet with you. Just to introduce the team so to the left of camera, and just off camera, we have Chris Gerard, who's Mount Owen Complex Operations Manager. Next to Chris we have Tim Walls who's the Approvals Manager in New South Wales for Glencore. On my immediate left is Jason Desmond, the Environment and Community Manager for Mount Owen Complex. On my right we have David Holmes, who's a Principal Consultant with Umwelt. And on David's right we have Bradly Snedden, who's just off camera, who's the Approvals Manager for the project.

MS LEESON: Thank you. Thank you and welcome again. We do have a long agenda. You've seen how long it is and we only have an hour and a half. So we probably won't need to do a detailed overview. You gave us a very good virtual site inspection last week. And we know that you will be presenting to the public hearing next week. So we might be able to dive, I think, straight into the discussions today on the agenda items that we have.

We've had a meeting with the department earlier this morning and we focused pretty much on heritage, geology, mining method and emissions. A few other things came in despatches. But read the transcripts and see exactly the detail of that conversation. But I suspect today's conversation will probably follow a fairly similar path. So on that basis, we might start off with the heritage issues. We've touched base with the department. The department's confirmed to us that whilst the Heritage Council has recommended that the state heritage listing of the Ravensworth Estate, it will defer any determination on that until post the determination that's before the Commission at the moment. The department also, when we asked them if they understood where the ATSIHP section 10 application was at said it was still with the Federal Government, the Minister for Environment, with the department there, and that it was a confidential matter, which we understand and respect. And then we had quite a long conversation around some of the issues around the Ravensworth Homestead, the relocation options and the interaction of those options including a "do nothing" with what the mine plan

and the economics and viability of the project would commence. So with that background, I think, we'll probably start on the heritage assessment if we can. One thing that's become or emerging, from my perspective anyway, is quite a heavy focus on archaeological and recorded, or records, sorry, of colonial activities and conflicts. But I'd like to understand from Glencore, and there are a lot of documents for us to get through as you would appreciate, you've put a lot of time and a lot of effort into preparing the EIS and the response to submissions. But is it around the cultural heritage and the almost intangible assets and issues that are associated with the site. As you well know there is contention around the significance of the site. And we'd like to understand a little more from Glencore if we can the approach that you've taken to anthropological assessment across the precinct.

MR SCOTT: Sure, Commissioner Leeson. So, yeah, look we have a, a long established process that we've implemented on a range of other Glencore projects in relation to cultural heritage which involves extensive consultation with the Aboriginal community. So, I mean, for this particular project in particular there were 32 Registered Aboriginal Parties that registered an interest with the project. And as part of that, throughout the preparation of the cultural heritage assessment report, there was opportunities for them to provide input into the project. Whether it be through input being onsite and partaking in the archaeological investigation and the test pitting program that was undertaken, or input through workshops that were facilitated by an anthropologist so that they could comment and provide their values in relation to the project in the broader area, and also input through just reviewing the documentation that was prepared. So that there was review points that they could, yeah, provide feedback and comment on the cultural heritage assessment report. And then, finally, they were also engaged with and consulted with in regard to mitigation measures and management measures that, that, that are put forward in the, in the cultural heritage assessment report. So a detailed synthesis of the RAPs' values is contained in the, the cultural heritage assessment report. We, I do, I do actually have a, a slide which probably, I guess, may articulate the process in a little bit more detail if you're happy for me to share my screen?

MS LEESON: Thank you. Yes, please.

MR SCOTT: Yeah. Okay. So probably the key area to focus on is just this flowchart here on the left. So the green boxes represent, I guess, points at which the community have provided input into the cultural heritage assessment report that's been prepared. So, as I mentioned before, there's been a series of site meetings and, and, and presentations where we introduced the projects to the, to the RAPs. There, there were values workshops, group elder workshops and family workshops. There were also site visits and fieldwork, as I mentioned, so through the archaeology and the testing, the

test excavation work that was undertaken. And then as part of that, all of that fed into then cultural values and recommendations management workshop that was undertaken and facilitated by the anthropologists. And then that was all taken onboard by the anthropologists and as part of the working of the cultural heritage assessment report, that was then synthesised and considered by the anthropologists.

And then as part of the preparation of all that reporting and documentation, there were review periods along the way for the RAPs to review the reports that were prepared, and they're represented by the, the green dots. So the RAPs initially had input into the fieldwork methodology that was prepared. There was also a scientific values report that was prepared that they had input on. They were able to then review the draft cultural heritage assessment report, provide input into that. And then, finally, the, there was a, a revised and updated report prepared following the receipt of, and a separate values report from the Plains Clans of the Wonnarua People.

MS LEESON: Thank you. That explains it. I was reading some documentation earlier and although I saw that the additional cultural values report from the Plains Clan People had been received, I wasn't sure at what point it had been factored into the analysis that you'd done. So that's taken into account and reflected in your final assessment?

MR SCOTT: That's right. And the final assessment report is, forms an appendix in our response to submissions document part B. So it's an appendix in that subsequent report and it includes the PCWP's values report and a synthesis of their values.

MS LEESON: Thank you. We'll take that into account.

MR HOLMES: It's probably also worth pointing out that this sort of builds on the assessment process that was undertaken for the Mount Owen projects.

MS LEESON: Sorry, can you say your name for the recording.

MR HOLMES: Sorry. David Holmes, Umwelt, here. So just noting that this sort of builds on the, the cultural heritage assessment projects which have been undertaken for the Mount Owen Continued Operations Project and southern extension modification, which also considered, so the broader cultural values within the area and, and went through a very similar process including consultation with the various RAPs, including, I, I believe, the PCWP provided their own report on that particular project, as well. So there's a lot of background engagement and consultation, even before this project which relates to the broader area, including, not specific on the homestead site, I guess, but in that, the broader Ravensworth area.

MS LEESON: Adrian, you had some questions earlier on heritage value. Is there anything else on the Indigenous side?

MR PILTON: Not on the Indigenous side, no.

PROF. BARLOW: Not from me.

MS LEESON: Sure. On the actual heritage itself, Adrian? You had some questions earlier or - - -

MR PILTON: Just thinking, casting my mind back, sorry.

MS LEESON: That's all right.

MR PILTON: Yes, I'm wondering about the possibilities of retaining the homestead where it is. Your option studies and so on for the mine show that it's not feasible to retain the homestead. Could you expand on the reasons why it can't stay, please, particularly the economic angle?

MR SCOTT: Yeah, sure, Commissioner. So there, there's a number of drivers that, that, that were considered and, and, look, it's, it's, it's explained in great detail in appendix 1 in our Mine Planning Options Report that was prepared and is, is appended to the EIS.

MR PILTON: Yeah.

MR SCOTT: But we considered a, a number of different options that left the homestead in situ, one of which was to mine around the homestead and not to mine within 100 metres of it, another option which provided a, a slightly larger setback of two to 300 hundred metres but still mining around the homestead and then another option which looked to stand off the homestead by 500 metres and, and, you know, beyond.

All of those options are not economically viable and there's also a number of technical risks and considerations associated with those options that involve mining around the homestead and mining within close proximity of it. Those options that, that involve mining to within 100 or 200 or 300 metres, the, the technical considerations or the key risks there are around the, the, the geology is a key consideration. Through that option there, the, the, the pit, the pit would be located to the east of the homestead and that would result in strata, the geological strata actually dipping into the pit, so that would

put the, the homestead at risk of potential slip failure into the, into the open cut void, just given the geology in that area. There's also blasting impacts and considerations there through blast vibration, as well, given the proximity of any open-cut mining to the homestead. Also, too, the, the overall setting and outlook of the homestead would be, would be drastically changed if mining was to occur immediately adjacent to the homestead in that you'd have, it's situated close to an open-cut void and also, too, it would have an outlook that would oversee immediate overburden emplacement areas to the south - - -

MR PILTON: Did you look, sorry. I was going to say, did you look at the option of lifting the homestead, as you're proposing, to move it up to the, the farm site, as it were, in the north-west, you'd lift it temporarily, move it away and bring it back?

MR SCOTT: That was considered, however, the, the site of the homestead would be largely in void in, in its, if it was in its current location and it would be uneconomic to go in and rehandle overburden material to then try to reinstate the current landform in some form as part of a, as, as part of a post-mining outcome.

MR PILTON: As I understand it, you're proposing to go back and reinstate the landscape roughly in accordance with the current landform, no?

MR SCOTT: At the Ravensworth Farm site, we are. So there's some earthworks regrading proposed at the Ravensworth Farm site, which is proposed so that the homestead buildings can be placed on, on a landform that, that, that has a similar gradient and slope to, to its current landform that it sits on. But, I mean, we're talking earthworks there that, it's, it's generally just a cut-to-fill type of exercise. So it's not as extensive as the earthworks that would be necessary, necessary to reinstate a mined landform where, I guess, a final void will be situated.

MR PILTON: Okay. The other question I have is about the financial viability, that if you don't mine the existing homestead site, why does that make the whole thing not, the whole mine not viable? You've still got a big chunk of coal you could take out before you get there.

MR WALLS: You know, the, the figure that we've prepared around the, the back there shows the, the narrow part.

MS LEESON: I'm sorry, if you could introduce yourself before you address that one.

MR SCOTT: In terms of, yeah, the economics, Commissioner, so I might just pull up another slide. It doesn't, I'll, I'll do my best to try to explain the, the, I guess the, the

key constraints. What's not, what's not apparent is that in the early years of mining, there's, there's a significant cost that's borne by the operation as, as the pit mine's through this narrow area that, that sits immediately to the north of the current operation and mines through the location of the existing Glendell MIA before the mining operation then starts to expand out and reach its full width. Now, as you can appreciate with any, any mining project there's a large capital commitment that's required upfront. And typically these projects have a long life in order to achieve a return on that substantial capital commitment that's required at the start.

MR PILTON: Sorry, could you just explain what this capital investment is? I mean, you already have a lot of trucks and so on there. Do you have to buy new trucks or new excavation machines or what?

MR SCOTT: Yeah, Commissioner, so certainly in the first few years there's approximately $200 million in infrastructure works that are needed through the construction of a new MIA, the relocation of Hebden Road, the realignment of Yorks Creek and the relocation of Ravensworth Homestead. So there's, there's capital commitments required there. There's also a need to supplement the existing mobile fleet that we have onsite. So we will be looking to reuse existing trucks and ancillary fleet where we can. But there will be a need to also purchase additional trucks as well as excavators to supplement the existing fleet as part of the project. So there's a capital commitment and requirement there as well which adds to that initial upfront capital spend on the project. And then throughout the life of the project there's a number of tranches of capital where we do end up replacing the mobile equipment as well.

MR PILTON: Okay. Thank you.

MR SCOTT: So certainly that initial upfront capital is quite extensive and does require a, you know, a large commitment by the business which is why the, you know, the development of the full resources is required to realise that, to, to ensure that we get an appropriate return on that investment.

MS LEESON: It is a level of information that we haven't yet seen. The department did have an independent report done by MineCraft which went into some of these issues. And it's a heavily redacted report that we've received and it's publicly available. And absent some, I guess, further line of sight to that around the exact nature of that capital investment early on, what would be required in a shortened version of a mine plan or versus the long-term version of a mine plan that is your preference, it's difficult for us to get a clear understanding of those costs and the implications, and therefore to form a view about whether we accept or otherwise the

commercial and economic viability of the operation. So it's something we're grappling with at the moment. We've discussed it with the department this morning. They're also, I think, going to await, they're going to think about it and it was a question on notice and we may provide some further clarification to them about what we do need to see. We understand that it's been identified as commercial-in-confidence and we certainly don't want to compromise that if it really is a commercial-in-confidence issue. But it does hamper our ability to understand this issue which is, I think, we're finding a fairly fundamental issue to our ability to look at this mine in its various options. So that's probably a bit of background to the line of questioning that we have at the moment and as I say, with that redacted report, it's making things a little difficult for us to get to the bottom of.

MR PILTON: Yep. I don't have any other questions on that aspect at the moment.

MS LEESON: Is there anything else on the mine plan, and we've had a conversation with the department this morning and I think we talked about it last week this notion of underground versus open cut. Because that has come up on occasion. You gave us, I think, last week an overview of the geology of the site and the department explained a little bit more of that for us this morning. Where that left us was in a conversation around emissions and the fugitive emissions and the Scope 1, effectively the Scope 1 and Scope 2 emissions for the site. On the open-cut perspective, we'd like you to explain to us how you've calculated the emissions? We realise this morning when the department gave us advice of the typographical error in their assessment report about emissions and it should have been 3.8 million tonnes rather than 3.4 million. There had been a miscalculation, I think, in terms of the, is it 25 or 28 factor on the - - -

PROF. BARLOW: The updating, basically the updating of the global warming potential for methane.

MR SCOTT: Yes.

MS LEESON: Yeah. And having drawn our attention to that table in the report it indicates a total emissions, Scope 1 and 2, of 6.4 million tonnes now. But we recall that we've seen in the EIS a 9.9 million tonnes or 10.4 million tonnes, I think, in total Scope 1 and 2. And there's, it's been, the department's explanation, we take your advice on this as well or welcome your comment, is in how that change has occurred. That effectively emissions calculation as dropped by about half. Can you take us through that?

MR SCOTT: Look, Commissioner Leeson, I will at a very high level. It's a very technical aspect and maybe it maybe something we're better off responding to in

writing. We did write to the department in response to a query they had regarding gas pre-drainage. And there was some explanation in that response regarding the revised methodology that's been used to re-estimate fugitive emissions.

Essentially, at a very high level, the initial greenhouse gas impact assessment that was prepared was based on a method 1 under the National Greenhouse and Energy Reporting legislation. So it adopted method 1, which is effectively a default approach to estimating fugitive emissions from open-cut mines. Following the completion of detailed gas drilling across the site – so we've undertaken drilling of eight boreholes that have been used to develop a gas domain model. We've then subsequently refined that method 1 estimate and adopted method 2, which is also under the NGERS legislation. So that revised fugitive emissions estimate has been informed by borehole drilling and gas sampling and analysis. And then that's been used to build a what's called a gas domain model. And then the outputs or the outcomes from that gas domain model has then been used to inform and develop these revised fugitive emission estimates for the project.

Now, the initial numbers that were provided from this method 2 was based on a global warming potential for methane of 25. We've then subsequently updated that recently using the current GWP parameter of 28 for methane, which is why you now have those revised fugitive emissions estimates. But essentially that first estimate that was provided was a upper limit estimate that was estimated using a baseline factor that's in the NGERS legislation under method 1.

MS LEESON: And so what you've done now – did you say eight boreholes?

MR SCOTT: Yes. We have a gas domain model which has been informed by eight boreholes that have been drilled within and around the mining area.

MS LEESON: Has that penetrated all the coal seams you intend to mine?

MR SCOTT: I would need to confirm that, Commissioner Leeson, and take that question on notice.

PROF. BARLOW: Just, Shane, just Snow Barlow here. Just so we can get our heads around that survey. What is the prospective area of the mine of which there are eight bore drills drilled in?

MR SCOTT: From memory, Commissioner Barlow, I don't have a plan in front of me. But I believe there's two to three boreholes within the mining area itself. And

then there's others around, that then surrounds around the mining area or are outside the mining area.

MS LEESON: Outside the proposed mining area?

MR SCOTT: Outside the proposed mining area, yes, yep. Look, we could provide, you know, further correspondence or a map showing the location of those boreholes that have gone into developing this gas domain model.

PROF. BARLOW: And is it possible to provide the initial figures from gas released from each of the coal seams within those eight boreholes?

MR SCOTT: To provide the data, sorry, was that the - - -

PROF. BARLOW: Yes, the data effectively, Shane. Yes.

MR SCOTT: Yes. Yes. I believe so, we could, yeah, certainly pull some information together, Commissioner Barlow, and provide that. Yes.

PROF. BARLOW: Thank you.

MS LEESON: And those emissions that are provided for in the Scope 1 and 2, the fugitive emissions, are they mitigated in any way, are they pre-mitigation or are they post-mitigation in the numbers that we're seeing?

MR SCOTT: They're unmitigated numbers.

MS LEESON: Okay. So then in terms of mitigation, there's obviously the fugitive emissions and there are the emissions from operating plant and equipment, which is effectively the diesel. Can you talk to us around the technologies and the treatments, the planning proposed for the fugitive emissions from the exposed seams?

MR SCOTT: Well, the, the mining area is characterised as a, as a low gas environment. Certainly, a lot of gas that's coming from the seams is less than one metre cubic per tonne and then overall over 90 per cent of the mining area has a gas content of less than four metres cubic per tonne. To put that into perspective, underground mines typically have gas contents, gas contents in excess of nine metres cubic per tonne and they're drained as part of any pre-gas drainage back down to around four metres cubic per tonne.

MS LEESON: Right. And so in terms of, so I understand the comparison about what you might find in an underground compared to what you might find in this locality around open cut. I guess what I'm interested in is what technologies and treatments you're proposing to mitigate the emissions that you've actually forecast, whether there is any mitigation proposed or not. And you say pre-drainage is not proposed, it's not practical or feasible. And we'll let you take us through that. I think what we're also interested in is post-mining when the exposed seams are left there and legacy emissions post-mining and if there's any treatment proposed to try and cap those or seal those.

MR SCOTT: Yeah. Well, well, look, certainly, in terms of fugitive emissions, there's no proposal to mitigate those. I mean, given that it's a low gas environment, there, there's no proposal to, to mitigate those at all. And, also, too, as part of any final void, there's no proposal to seal any of the coal seams again because it's a, a low gas environment with, with largely, and, I guess, regionally, given the, the long history of mining that's occurred in the area, a lot of the, the coal seams have, have, have already been pre-drained as part of that, that historic mining and the mining that's currently ongoing at the moment.

MS LEESON: Is that evidenced? Where would we find that evidence?

MR SCOTT: Well, well, I guess it's informed by the, the borehole drilling and the analysis that we've undertaken that, you know, there is very little gas make and content that's coming out of these seams. So I, we could evidence it through the data that we've collected and through the, the drilling process that we've undertaken, which is in accordance with the NGER's legislation.

MS LEESON: Ok.

PROF. BARLOW: Yes, just a question and perhaps the detail later will answer these questions. Why is that the sort of NGER's methodology to have the drillholes essentially on the periphery of the pit not across them? There's only three in the actual mine area and therefore, there must be five on the periphery. Is that what the methodology says, does it?

MR SCOTT: Commissioner Barlow, I'd need to take that on notice. This is getting beyond my area of expertise now, so we can certainly look to come back to you with a fulsome response in regard to this matter if that's okay?

PROF. BARLOW: Thank you.

MS LEESON: Yeah. Thank you. That would be appreciated. And I confess wholeheartedly it's beyond my area of expertise, as well, but we'll read that data with interest or that report with interest when it comes through. So thank you for that. Can we then talk about the emissions from the plant and equipment and the proposed mining method that you have in the fleet and what mitigations or what proposals you've got in place there to deal with those emissions?

MR SCOTT: Yeah, sure. So I'll just share another slide with you, Commissioner. So the proposal is to continue the operation using excavators and trucks for the digging and haulage of overburden and coal material. So I guess in terms of Scope 1 emissions and particularly through diesel usage and, and the combustion of diesel and the emissions associated with that, the operation will continue to have a, a strong focus on optimising operational productivity, just through scheduling of the mine plan, the haul road ramp design and the haul road design and also the equipment selection.

So, really, the, the key focus as part of any mitigation to try to minimise diesel usage onsite and the subsequent emissions associated with that is through limiting the length of haulage routes, where feasible, in order to minimise transport distances and fuel consumption. Also, as I said, selecting equipment and vehicles that have high energy efficiency and then also, yeah, the scheduling of activities, so that equipment and vehicle operation is optimised. Commissioners ---

MS LEESON: Thank you. I mean, that makes sense. It's obviously in your interests to minimise the length as much as you can because of the associated fuel costs and what have you. What would a typical replacement life cycle be of the fleet that you have or that, you know, you're saying you've got fleet now that's going to continue to be operated. Is that best in class equipment? Is it middle of the road? How would you classify the equipment that you have and the life cycle and therefore where your future fleet might come into play?

MR SCOTT: So, look, I mean, our equipment's always maintained to a high standard. I mean, there's a, a detailed maintenance regime that's always undertaken to ensure that they're operating optimally. The equipment that we're looking to, to re-use, you know, will be around 10 years old so it will probably be halfway through its, its life cycle. Typically, we, we operate trucks for 15 to 20 years and excavators similar, around 15 years and ancillaries anywhere from 10 to 15 years. So, so really the equipment we'd be looking to utilise will be sort of halfway through its, through its life. But, obviously, it's, it's, it's, it's imperative to any mining operation to ensure that its equipment are functioning efficiently and optimally because downtime obviously has a, an implication on, on the operation.

PROF. BARLOW: Shane, just to help us get our heads around the truck operation, what would be the sort of average round trip for transport of coal to the Mount Owen processing facility?

MR SCOTT: Chris, can you answer that?

MR GERARD: Yeah. Chris Gerard, Operations Manager at Glencore. I guess over the life of the project, it, it varies. Where we currently sit at the moment, you could be looking at up to a 20, 20 minute trip round, round to the, the prep plant. I guess the, the proposed extension moves towards the prep plant, so, naturally, over time, that, that, that, that reduces. I guess there's no one straight answer for that question. As you can imagine, coal that's deeper down has a longer trip, coal that's at the surface has, has a shorter trip. So our haulage models are built on where we are at any given time. I guess at a very high level, where we are at the moment, looking forward and going to the, to the end of the extension, right, yes, we, we, we'd transition and move closer to the prep plant, so that all should decrease over time.

PROF. BARLOW: Thank you. Just another, and I'm sure you have considered this but was any consideration given to, you know, what's not surprising but, you know, a characteristic of the area that you're in, there seemed to be coal conveyor belts everywhere, to using a conveyor rather than, you know, a 20 minute drive for each load of coal or an average 20 minutes, whatever?

MR GERARD: Yeah. The, the conveyor belts that you see in the area and around mining operations in the valley, typically, they're conveyor belts that are associated with the, the plant itself and, and so what we call ROM bins or hoppers. The, the use of conveyors from the pit itself is inherently, have issues, as you can imagine. The pit, in coal operations, the mining activities move, they, they don't stay in the one location, so conveyors require large amounts of infrastructure and you can set up a conveyer to, to be a short haul for where you are on the given day, and as that mine progresses, you actually move further away from it, so the proof is in the pudding in terms of economics. As you can imagine, if it was to reduce diesel, purely from an economical point of view, it was something that we would do if it reduced our diesel assumption, sorry, consumption. But, yeah, conveyer use are from fixed locations such as ROM areas and prep plants, as opposed to moving pits that are constantly changing and evolving.

MR WALLS: Maybe on the site tour we could maybe walk through some of that on the site tour where it's maybe more visual to, to see and explain that.

PROF. BARLOW: We'd appreciate that, thank you.

MS LEESON: And I think we have some discussions going at the moment about an opportunity to come up and look at the site. If there's nothing more on the emissions side of things, we might move on to rehabilitation, and you gave us quite a comprehensive overview last week of the rehabilitation strategy and plans that you have. We do have some questions, I think, around final landform and about storage of materials in the short instance around the MIA and the Ravensworth Farm area and how they are treated, the proposed stockpiles and what have you. Can I ask a question, in the EIS or in the application, you're seeking to increase the heights of some of the final landforms from, I may get the numbers wrong, but from, say, 160 metres AHD to 200 metres AHD. Given the now longer period involved in – assuming you, this is determined in your favour to proceed, you have extracted more coal from those other areas. Is there no opportunity, or what is the opportunity, instead of increasing the landform height to the 200 metres you seek, to actually use some of that to fill, to backfill some of the areas that you're moving out of now?

MR SCOTT: Commissioner Lesson, we've prepared a slide that talks specifically to this issue if it's okay that I just jump to it.

MS LEESON: Thank you.

MR SCOTT: It always helps with a bit of a figure to try to explain, explain this particular, this particular issue. So if we just focus on, on the figure itself, so I guess there's a couple of drivers that are limiting the ability to fill voids there at the complex. We've certainly done a lot, a lot of work looking at the practicalities of that, and it's certainly not considered reasonable and feasible to fill the other voids at the Mount Owen Complex. There's obviously the additional haulage and increased haulage length associated with doing that. There's the additional fuel burn and requirement for additional trucks as part of any haulage cycle, particularly in the early years of mining, when we're at the southern extent of the mining area where, where I guess continuing on the existing Glendell Mine. The other key thing to note with the voids in the complex as well is that Mount Owen Mine has an approval to continue mining until 2037, and the Bayswater North pit void itself, which is part of the Ravensworth East operation, it's an integral part of the GRAWTS, so it becomes available and for use as a water storage in 2024. And given that Mount Owen, at present, currently lacks a significant onsite water storage and it doesn't have a dedicated licensed discharge point, it's a, it's a crucial part of the GRAWTS longer term for water storage. So there's no ability to, to fill that with, with overburden material.

In terms of what's driving the height of the overburden emplacement area for the mine, for, for the project, so there's a requirement to keep the existing southern portion of, of the existing overburden emplacement area low during the early years, to, to allow drainage of the final landform to the south and west around it. So that subsequently then limits the available area for overburden emplacement. There's also a need as well to hold back the toe of the existing overburden emplacement area while we mine through this narrow neck and while the open-cut operation widens to the east. So that material has to be hauled higher while we're holding back the toe of that dump. However, once that floor is then driven down and reached and we have additional floor area available, then that toe can then progress forward and then subsequently release some dump area and volume, in which we would then continue to emplace in behind the progressing void. So the key driver in those early years of mining is to keep, we need to keep that toe fixed while we mine through the neck and widen out the open-cut mining area.

MR GERARD: I guess – Chris Gerard – to oversimplify it, it's when you've got a really wide dig area and a narrow dump area to put that dirt, your dump goes up higher. And vice versa, if you've got a wide dump area and a narrow dig area, then your, your dump doesn't go as high. So there are isolated sections of this where a 200 RL that needs to be fully utilised.

MR HOLMES: I guess the other – sorry, David Holmes here. The other, the other issue here to consider is what are the additional impacts from going to 200 relative to 160, and, you know, if it imposes significant additional impacts, then you look at, you know, perhaps trying to find a different option. But here the, the impacts are, you know, they're localised areas of 200 metres, not, not the whole area. That helps create some better landform variability, which we can show you some, you know, there's some transsec, or cross-sections and visual montages which kind of illustrate some of that. The other thing is there's lots of emplacement areas around this which are very similar in height to what's been proposed. So over the highway you've got Ravensworth operations, which is the 190 and 230, so the east and west emplacements there. So they're similar heights. The western outer pit emplacement area on the western side of the Mount Owen void is 190, and the Mount Owen void, the main north pit emplacement area is 230. So the 200's sort of in the context of that landform going through that area. There are potentially – so from a visual perspective, you know, there's additional height of course, but, you know, you've got to bear in mind that this road, this whole area is heavily dominated by, you know, mining impacts. It's, it's not a new impact that is going into the area. It's progressively rehab'd and that helps with, particularly with woodland vegetation here, which helps mitigate those visual impacts associated with that.

The other, probably the main risk that needs to be considered around going to additional height is around noise management, and that's been a specific focus in the project and commitments around, you know, how can they structure this design, the project to get that emplacement and still manage the impacts. And the noise impact assessment is considered significant, you know, what's reasonable and feasible to manage those operations and still achieve the project noise trigger levels that are set out in the noise policy for industry. So there's no exceedance of effectively the default criteria that sits under the noise policy for industry by going to that additional height. One of the other side effect, side benefits of going high early in this project as well is that you effectively hide behind the dump. So the dump itself provides a noise screen for the existing operations. The operations are then progressed to the north, with the main receivers potentially exposed to the south. So while it feels like there's an additional impact associated with that, I don't consider that impact is actually all that significant, and some of the positives that come out of it are actually, you know, quite beneficial for the overall project design.

MR PILTON: I'm wondering if you could just talk us through the process of topsoil stripping and so on, and how deep is the existing topsoil and the different horizons, A horizon, B horizon and so on. Do you separate those out and where do you store the topsoil and how do you store it?

MR DESMOND: Yes, so Jason Desmond, Environment & Community Manager for the complex. In terms of topsoil for the site, so there is topsoil test pitting completed in the EIS phase, and that gives you an overall representation of the regional context in terms of topsoil available. But for ourselves, so part of your stripping process, so we go through and disturb remnant areas ahead of mining, so they're our pre-strip areas, we'll actually complete topsoil test pitting in those areas. In terms of the topsoil found, it is very, very minimal. Most of the time there's no A horizon, it is B horizon topsoil. There is small pockets in thick vegetation that does have an A horizon but a lot of the time it's less than 100 mil in thickness. So part of that process with the stripping part for the project and how we do it onsite currently. We make sure we maximise stripping and the topsoil based on those topsoil tested profiles, so they are actually provided to the people who complete stripping on site. The ideal scenario is we do strip those areas and place directly on shaped overburden or waste rock areas. At times in the mine plan we do also stock pile topsoil. With the stock mining process, it isn't just placed randomly, it's quite strategic, put it quite close to the next year's rehabilitation areas. It's shaped and then we also put a suitable species or a cover crop over those areas, so preserve the topsoil in situ as such.

MR PILTON: And how deep would those stockpiles be?

MR DESMOND: So in line with our mining operations plans, so that's approved by the Resources Regulator, a maximum of three metres.

MR PILTON: That doesn't destroy the soil structure over time?

MR DESMOND: No, that's why we restrict it to three metres. They are not all three metres, some are less than three. Other things we do consider, and it's based on feedback, with our topsoil testing of our stockpiles, we do test those as well. Some of the stockpiles in terms of nitrogen fixation, microbial activity, we do also see with woodland or tree species, so later on the process is we can potentially mulch and take up that material as well as part of the topsoil process to rehandle.

MR PILTON: So you add the mulch later, just before you spread it?

MR DESMOND: So it's incorporated into the topsoil. So part of our stripping, we actually get a forestry mulcher in where there is thick vegetation. At the moment that's ahead of the Mount Owen Operation, Glendell is pretty much grassland, very minimal woodland, but we use a forestry mulcher, it's mulch placed on the surface and collected as part of your topsoil stripping process. So it's incorporated into your topsoil to maximise the stripping efficiency.

MR PILTON: Thank you. And what happens when you're putting back the rock, as it were, the waste, what size are the particles in that, roughly? Are they sort of big chunks or is it ground down or what?

MR DESMOND: It varies but for ourselves, again, as part of the planning process we try and be strategic and make sure the particles are smaller in size so quite natural in terms of that final landform design. We also find that assists with the shaping efforts so when you have a bulldozer as such on that final area, your more consistent or finer particles of waste rock make that shaping more effective as such.

MR PILTON: And do you lay it in layers and compact it as you go up?

MR DESMOND: So they are dumped in, what's called dumping layers. We do make sure that we do have a design around those. Again, making it efficient as possible with our final shaping technique.

MR PILTON: Do you expect settlement in the future and, if so, how much?

MR DESMOND: There is potential, we would have to get back to yourself in terms of how much, it does vary site to site, and the reason it varies is based on the stripping

ratio. So the amount of overburden or rock stripped in comparison to coal and also there's other factors. The depth of your actual mine and then also that rock structure that is being mined and placed.

MR PILTON: Thank you.

PROF. BARLOW: Just a supplementary there, when you talk about topsoil you said in places within the current landscape there's (not transcribable) topsoil, so when you talk about topsoil, is that fundamentally the A and B horizons?

MR DESMOND: Correct, but like I said there's very minimal A horizon present.

PROF. BARLOW: And what's the, you know, I know it's variable, but what's the usual depth of the B horizon?

MR DESMOND: It can vary. The test pitting shown for the current operation can be anywhere from 19 millimetres down to less than 100.

PROF. BARLOW: Okay, thank you.

MR DESMOND: Quite thin.

MR HOLMES: That's the main mining pit area. The area and sort of the alluvial flat associated with Bowmans is, there's a deeper material there, and they will require quite different management techniques to the overburden, the main overburden areas. The extended duration of those mean that the period where the heavy vehicle access road and the – well, the heavy vehicle access road essentially avoids most of the higher value soils, sort of skirts around the outside. The mining infrastructure area overlies some of that identified BSAL area, and the Hebden Road will run through parts of that identified BSAL area, so Hebden Road won't be reinstated but the material that is sort of stripped to enable the foundations of that to be built will be either selectively stockpiled or used in around the bunding associated with the heavy vehicle access road, and that will be vegetated so as to help maintain the quality of that sort of soil material. It may also be selectively used within the grassland rehabilitation areas in other parts of the site to improve the quality of that area. As Jason said, the topsoil, there's almost no A horizon over almost all the sloped country. It's from back in the early, sort of, late 1820s, 1830s, 1840s it was heavily stocked with sheep. And, you know, there's large scale sheet erosion would have occurred, removing almost all the historical A horizon in that area. We mentioned in the meeting the other day that there was some contouring of some of the sloped areas. That was all undertaken back in the 1960s by soil conversation service to just try and save what was left in that area.

So it's purely a, you know, rehab-type arrangement rather than anything that was structural or improving in the landform. So most of the landform is heavily degraded which limits its ability for grasslands, so some of that addition BSAL soil and alluvial soils can be stockpiled there. There's some alluvial soils back up Yorks Creek which has some higher value – they will be stripped later in the project so the stockpiling period for reinstating back in the BSAL areas, or the areas identified currently as BSAL, is possible and that enables that commitment to the land and soil capability class 4 land for that 21 hectares to be achieved. There's probably areas within that BSAL area identified in the disturbance footprint that won't actually be disturbed at all and will remain sort of just on the verges of the, between the heavy vehicle access road and the, and Hebden Road, but it's conservatively been identified and considered in the assessment.

MR PILTON: And do you seed the grassland areas and, if so, what kind of species are you seeding it with?

MR DESMOND: Yes, with our grassland areas another key point there is with the topsoil, it may be increased in terms of the soil nutrients. What I mean by that is we may put (not transcribable) such as biosolids in the area, which is high in nitrogen, high in phosphorus, to establish such grassland areas. But in terms of the species, we do have a summer mix and a winter mix, so that's in our mining's operations plan which is reviewed by the regulator. In terms of the composition, it's based on advice from a local agronomist, and that's an agronomist that's worked in neighbouring properties in terms of your traditional agricultural practices, and the mixes are very much those that are going to provide benefit for the post-final land use, which is grazing.

MR PILTON: Thank you.

MR HOLMES: There's some excellent knowledge sharing among the different mines up in the valley around rehabilitation techniques and some of those are focused heavily on re-establishing grassland and grazing operations. So all the mines learn from each other and incorporate those changes so it's not everyone starting from scratch – there's quite a long history of experience in the rehabilitation techniques.

PROF. BARLOW: So the established grasslands, if I interpret you correctly, is basically done with improved pastures species rather than native species?

MR HOLMES: That's correct.

PROF. BARLOW: Yeah. Okay.

MR HOLMES: In this case, yeah.

MR DESMOND: Yeah, in this case, species, you know, phalaris, medics, clovers, and again, those, like they've mentioned, those species have proved effective. There's been a few grazing studies and trials done through the Hunter Valley at various sites, including a nearby Glencore site and then there's been an evidence-based approach around cattle effectively grazing those areas, and the areas have a carrying capacity to sustain that post-land use after mining.

MR PILTON: Thank you.

PROF. BARLOW: Thank you.

MS LEESON: Okay. That's been a pretty useful discussion. Thank you very much. We did have the benefit of a conversation with the department this morning and there are probably a couple of things that we might not need to drill into too deeply but I'll check that I'm right in that assumption first with

PROF. BARLOW: Referring to what

MS LEESON: Do we need to pursue any further - - -

MR PILTON: I'd like to ask a question about planning of the mine and the options available for moving the homestead. I'm just thinking about if the homestead was to be moved to Broke, there's clearly a sort of a long lead time before that can happen. You've got to get a rezoning, you've got to get a DA, maybe a native title claim or whatever over the new site. That could take several years. How does that affect your mine planning?

MR SCOTT: Yeah, Commissioner, so I might just jump to another slide which hopefully will explain how we're, how we're proposing to deal with this particular matter. And this is a figure that's in section 5.1.2 of the EIS. So, so you're right. There, there are time constraints associated with the mining operation and we've made a commitment that the homestead be relocated before mining occurs within a kilometre of its current location. So as part of the Broke option, if it is selected as the preferred option, then the current proposal limits the secondary approvals to a two-year time frame. So within two years, the community would need to obtain the necessary secondary approvals and also secure land access and resolve the native title issues. And if that couldn't be achieved within two years, then the homestead would revert to the Ravensworth Farm option and by, by doing that, that then removes any

potential implication on the mining operation because there would then still be sufficient time for us to relocate it to the Ravensworth Farm location without it impacting on the mining operation.

MS LEESON: I'm not sure if I misheard you a second ago. Did you say it would be up to the community to obtain all the necessary second approvals? I think we heard from the department this morning, their view that it would be your responsibility.

MR SCOTT: Well, we'd be working with the community, Commissioner Leeson, but it's their proposal. So the intention would be for them to, to drive those approvals. We would provide support, however, they would, they would be driving those, those necessary approvals.

MS LEESON: Thank you. We probably feel that we can skip a couple of items on the agenda. Visual impact I think is discussed, albeit briefly, I think we've discussed those and we will get the benefit of coming up onsite in the not too distant future. We'd like to turn to water resources, if we can and, in particular, a discussion around the final void and water quality and the management of that. And just while you're scrolling through these slides, can I confirm this is, in fact, the slide pack presentation you gave us last week?

MR SCOTT: No, it's not. It includes some additional slides that we've prepared in preparation for today's meeting and in response to the agenda.

MS LEESON: Okay. Then what we will probably need to do, we'll get the office to liaise with you. We will need at the very least the slides that you've spoken to today, so that we can post those on our website, together with the transcript.

MR SCOTT: Understood.

MS LEESON: Okay. Thank you. So, sorry, final void and water quality.

PROF. BARLOW: Yes. I guess the question we had with regard to, you know, the final void, which will gradually fill with water, and I don't have in my head at present what the time frame of that is, but what will be the water quality of the water in that void?

MR HOLMES: Yeah, so I'll – David Holmes here. I'll sort of go through these, actually, maybe go to the next slide first. So these, these are the model predictions of, of water. So TDS sort of being salinity is sort of dotted lines down below, the, the red and blue lines are comparing the existing operation or existing approved void in the

Glendell pit, so it's, there's an approved void if the project doesn't proceed. They're the blue lines whereas the red is the, so the lines for the proposed void. As you can see, so the, the void will fill to a higher height, I guess, for the existing operations than the, the proposed one. That, that's an, an artefact, I guess, of the starting point. It's not quite as deep, the current Glendell pit and doesn't get to as deep as, as what it is. So, you know, it starts at a lower point and then fills up.

The salinity levels or TDS levels are, sort of, take, I guess the pit lake takes about 450 years to recover to a, to an equilibrium and that's where the sort of groundwater and surface water inflows reach a, a balance with evaporative loss. So that's about 450 years from finishing and because of the evaporative effects in this and also the, the inflows of saline groundwater into the system. So saline groundwater is about 770 milligrams per litre TDS.

The, the void water quality will slowly trend up towards that sort of number and then, you know, it just goes out. So it'll continue to rise inevitably if this is just a, you know, a continued, you know, there's no change to the use of the void in any post-mining land use. But it still remains, you know, out till 250 years or 2500, so less than the Permian groundwater and, you know, well below sort of what sea level seawater is.

The water quality is usable for a lot of different things, so it's, you know, it's definitely not a, you know, a long term pollution, you know, issue, you know, over, for a long, extended period of time, the water quality is, is very useful for a lot of different uses and, and different sites have sort of looked at that and, you know, that'll be examined in more detail going forward in, you know, in 30, 40 years when the project's sort of finished or reaching conclusions. More of those will be available, no doubt, for consideration. But, you know, things like aquaculture, they've used these as pumped hydro, particularly, the deeper void, using it as a, the base reservoir for a perch reservoir. So those sort of things, it, it doesn't preclude that use. If I go back up to the previous slide - - -

PROF. BARLOW: David, just for a moment, sorry. Just for clarification, I heard you say the EC or the dissolved solids was 770, but is it 7,700?

MR HOLMES: Sorry. Sorry, 7,000.

PROF. BARLOW: Yes.

MR HOLMES: 7,700 is the current Permian groundwater inflows, so - - -

PROF. BARLOW: Yeah.

MR HOLMES: Sorry about that.

PROF. BARLOW: That's what the diagram was saying and I was just, needed it to be clarified, that's all.

MR HOLMES: No. Thank you for picking me up on that. The, so the other point to note, so with this, I mean, there's been a long push around, you know, full backfilling of voids but, again, it's one of those issues that backfilling itself can have its own impacts or considerations which need to be taken into account. And so this, we haven't really shown on this but this is that slide we, with the cross-section we showed the other day. As the void sort of water level recovers, even the spoil within, you know, the mined area of the pit will continue to fill up with water. And if there's no final void, that, that will still occur. So, so within the mined area, you get a saturation zone. And it's, it's important to understand how that will behave and model as an alternative. So even if it was fully backfilled, that will continue to rise due to groundwater inflows and also infiltration of rainwater through the spoil.

We did some preliminary modelling here of a fully backfilled pit which indicated that it would actually probably seep out of the lower sort of southern end of the, the pit where the pit shelves. So it would become a long term legacy in the environment at some point in the future when that saturation occurred. So, you know, I can't remember the exact date. It was, it was a, a long term legacy issue whereas the void itself and allowing, having a pit lake in the void allows that final water level to be regulated and remain within the pit. So it has an important sort of long-term legacy management issue associated with that, and that's sort of an optimisation around catchment area and void size and depth and consideration. So that's all gone into design considerations and has been assessed. I don't think I've got anything else, really, to, to say there.

PROF. BARLOW: Just a final question, just, and I'm sure it's probably in the EIS, is that what's the volume of that final void, the sort of area and volume? It's clearly quite deep. But what's the – it's probably there, is it - - -

MR HOLMES: I don't think I've got a – oh, yeah, so I've got a storage, maximum available storage. So it's the void itself to capacity is 250 gigalitres. If it was filled up to, to full level. I mean, it doesn't get to that height, so, but if it did go up to the pit level, it, you know, 250 gigalitres, the existing void is 50 gigalitres in total capacity.

PROF. BARLOW: Thank you, that's – yeah.

MR HOLMES: That doesn't include spoil catchment. So, you know, there'd be additional storage, I guess, within the spoil itself, you know, the poor space within the spoil.

PROF. BARLOW: Yes.

MS LEESON: That 250, is that to the rim of the void, did you say?

MR HOLMES: Yeah, that, that's correct. I, I don't know if we've actually calculated what the total water, you know, the water level that equally, you know, the volume would be in there. It recovers fairly quickly early on and then slows down in the, the total amount.

MS LEESON: Thank you. I think that's been, that's been very helpful. The last issue I think that we probably will touch on today is around the economic analysis, and you've seen and commented on but we invite you to make some more comments, I think. Sorry, there are two more issues to discuss. One being the economics and then the last one I think would be around the department's assessment report and any conditions that it's recommended and your thoughts on those. We know there were some thoughts around the acquisition of Hebden Road and the planning agreement issue, but we invite the comments on any of the other draft conditions. But on the economics, EY has provided you with an economic analysis that paints a very positive picture of the value and the economic value of this proposal. The CIE analysis, on the other hand, is one can only describe as far more conservative in its approach. And the two analyses use quite different assumptions, and I would quite like to get your thoughts on, your views on the differences in those base assumptions, because they do drive very much just some very significant differences, and, you know, a couple of fundamental differences are really around the carbon price that's being proposed by you and then what CIE has valued it at and the Emissions Reduction Fund in the first instance and the EU price on the other hand, and then apportionment, and of course there were the differences of thoughts around coal prices. It's probably more volatile than any of the above. But can I ask you to talk us through your commentary on both analyses and the difference between the two reviews?

MR HOLMES: Yeah, so I guess the key issue between the, the CIE approach and, and the EY/Umwelt approach in the economic outcome or the assessment is that really there's the two, there's around supplier and employee benefits, and they're kind of linked, and then there's the greenhouse gas attribution. Probably the first point to sort of think about is when we're doing the cost-benefit analysis, it's looking at a cost-benefit analysis to New South Wales, and it's a very specific feature of this assessment

process to try and work out what are the benefits to New South Wales alone. You know, there may be other benefits to Australia or the world or other costs to other parts of Australia or the world, but the CBA is very focused on what are the costs to New South Wales. And on that particular point, the green, probably the greenhouse is an easier one to sort of deal with on that front, is that greenhouse costs from Scope 1 and 2 emissions are, because of the nature of greenhouse gas impacts, they're spread across the world. They're not a, they're not isolated to just New South Wales. And New South Wales will obviously get, there'll be some impact on New South Wales in terms of a cost, but it's not a hundred per cent of the impacts associated with those greenhouse gas emissions. And there's been a difference in opinion between some economists as to whether that should be a full attribution of the costs to New South Wales or whether it should be an attribution of all those costs to the globe to and then you apportion that out to New South Wales based on population or area. There's various different approaches.

And then a third approach which is full attribution to Australia and then you do a population proportion then to New South Wales for those costs. Our so the Umwelt and EY approach is that the proper, the proper approach here is that it's a greenhouse gas. It's a global problem so therefore the cost should be globally and then you attribute that cost to New South Wales for the purposes of the New South Wales CBA analysis. Now, that's not to say that you shouldn't understand what the total cost of those greenhouse gas emissions are and with those have been quantified in terms of the total. But where the actual assessment requirements is for the CBA of New South Wales it's appropriate to follow that approach of working out what the total impact costs are and then apportioning that to New South Wales.

There's some additional discussion in this process around whether the greenhouse gases, what particular number you should ascribe to the cost of greenhouse gases. We provided a letter on the 20th of December, which sort of goes through some discussion around using different proxies from market prices or the US EPA cost of carbon calculations. For various reasons, we believe that the best approach is to use the US EPA cost of global, like cost of carbons. It's a global cost attributed to each tonne of carbon. It varies over time and has various discount rates calculated. And so you can get a range of different impact numbers on what that is. Because it's a global cost and actually works out what the cost per tonne of carbon is, you can then attribute that back to New South Wales. So it's a very good number to, I guess, work with and provides a probably a more robust estimate of costs. If you start using proxy prices using different emission trading schemes, it all depends on what the particular scheme is, how much is covered within that scheme, how much, so how much of the economic sectors are. Whether they're, at what stage in that trajectory of reducing emissions are. So in the very early stages of reducing emissions you have a very low cost. And

then as they get closer to reaching the final targets it becomes higher. If you have a steeper trajectory to zero or whatever the target is, the costs are higher. So there's no particular rationale for picking a particular price to then ascribe whereas the US EPA costs are fairly robust and defensible.

So that's where we've provided some additional numbers in that 20 December, 2021 response which actually give a greenhouse gas contribution number for that. I don't have them in front of me. But it's in that letter. And that goes through that discussion. The other – so did you have any questions on that?

MS LEESON: No. But I'll have another question in a minute, if that's all right?

MR HOLMES: That's all right. The other point is really around the supply and employee benefits. And this is a very technical economic discussion and there's different schools of thought on how this is. Ultimately, where EY and Umwelt's view are, view is, is that you've got additional coal, money coming into the Australian economy from the sale of coal to an overseas product. So that's additional income coming into New South Wales. That additional income gets spent on employees and suppliers. So there is a benefit, like a positive benefit, to the extent that there's additional income coming into New South Wales. Where the assumptions or the different points then come in for supplier/employee benefits are, does that create an additional demand which is a positive for New South Wales or are there other opportunities for employees to move or for suppliers to sell to other places? Where we're at at the moment, particularly for the coal industry, is that most projections are that employment and production in New South Wales in the coal industry is around about a peak, and that includes consideration of this project, and from here on in it starts to decline. So there's no, if an employee from Glendell, if the project doesn't proceed, there's really no other job in the coal industry for them to go to in New South Wales. If they leave and go to Queensland, that's a net loss of income to New South Wales, but if they go to another job in New South Wales, they have to go – you know, there are really no comparable employment jobs. And Ernst & Young have gone into quite a lot and look at alternative employment options and what the reserve price or the reserve wage would be for those employees if they can't get that job. That's the main difference is that CIE are assuming that these people can just go to another coalmining job and get that, you know, get the same wage and therefore there's no real loss of employment but, to be honest, that's not where we're at. Ten years ago that might have been the case and you could argue that when the economy was pretty much running at max and you had increased jobs coming onto the coal sector – that's not the case here. So for each job that is no longer in the coal sector in New South Wales, they're not going to find an alternate job in that coal sector. So it's a decline in employment benefits. So the project, by maintaining employment, is a net benefit

relative to the base case, and that's the argument for why employee benefits should be included in the assessment.

For supplier benefits – it's a little bit different and I don't quite understand where CIE are focusing their attention because they seem to be relying that the benefit is only on the increased profit margin associated with the project. So if the project increases demand, then there's a profit, a potential for a profit increase and then they work out what that profit increase would be and then that's the positive. That's not the way we interpret the guidelines. The way we interpret the guidelines is if the project creates additional demand for product and that's paid for by money coming out from outside of New South Wales into New South Wales, then the net benefit to New South Wales is the additional profit, not the profit margin, but the additional profit associated with the sale of those additional goods. So those goods wouldn't be sold into the market from those suppliers if the project didn't proceed. So relative to the base case of the project not proceeding, there are additional sales, and those profits from the sales are the supplier benefits which flow to New South Wales. So they're the – that's really the two key differences between approaches.

For – just from a general, you know, conceptual issue, it's hard to believe that a project of this scale, including additional employees relative to it not proceeding and, you know, buying more product from your New South Wales suppliers, does not result in a benefit to New South Wales through those increase supplies and increased employment. It just doesn't make sense to make that argument. Yet, that is essentially the argument that's being run by CIE and we don't believe that is actually an appropriate interpretation of the guidelines. It may occur in very select circumstances where the economy is growing at absolute maximum rate and the coal industry is projected to grow, but that's not the situation here. I'd also point out that the CIE conclusions here are also at odds with their own reporting that they've done for the Minerals Council Australia, so I've got a reference on that slide which is the report that they've done. While it uses a different modelling technique and uses CGE or computational generational – CGE modelling – it shows that the mining industry in Australia has resulted in increased wages across Australia, so it's resulted in a growth of wages, it resulted in significant increase in GDP. So their own modelling of the impact of mining on the broader economy is showing the exact opposite of what they're saying in their approach to the assessment of New South Wales impacts. And, you know, as I said, the report that they've prepared for the Minerals Council of Australia actually makes sense, that's what we understand as being the practical effect, but that nuance of it is really a differing of opinion between economists.

MS LEESON: Thank you.

PROF. BARLOW: A question, David, and it's really returning to the apportionment and the way that you have discounted the Scope 1, Scope 2 emissions by the comparison between Scope 1 and Scope 2, which are clearly CO_2 burnt in New South Wales and then comparing that with total CO_2 or total CO_2 equivalent globally – you can make that comparison – but what I wonder in the logic of that is if you do that, don't you also have to consider Scope 3 because under the present circumstances we don't consider Scope 3 because they're not burnt in Australia and they don't therefore sit on the Australian greenhouse gas account. But if you make the comparison to global emissions, clearly Scope 3 will make a contribution to the global emissions – so what's the logic in doing one and not the other?

MR HOLMES: I guess one is, the technical answer is that the guidelines only require it to be Scope 1 and 2, but just setting aside that particular point, I guess the justification for it being only Scope 1 and 2 and not 3 is that the project doesn't increase the demand for coal which creates the Scope 3 emissions. So that's generated external to Australia – in some cases in Australia – but it's generated external to the project. The project meets that demand, it doesn't create those emissions, it provides coal which may ultimately produce those emissions. So if the project doesn't proceed, then arguably those emissions would still occur anyway, they just wouldn't occur in Australia. Those emissions would, you know, the mining of that coal somewhere else in the world would also have Scope 1 and 2 emissions associated with that operation overseas, and therefore that would have a flow-on effect, I guess, in the same way it occurs. The guidelines have identified that because that's an external Scope 3 emission, it's counted in the assessments of other projects or other considerations, and therefore the Scope 1 and 2 emissions are only attributable to New South Wales – so, and the only ones required under the assessment.

Now, I noticed when the guidelines went out for consultation as well, there were various comments and discussions came in on around what they were. That 20 December letter that we've prepared sort of goes through some of those discussion points and looks at it. Yes, it gives a very low number for Australia using, or for New South Wales when you apply this approach, and even if we took all of Scope 1, it's still a fairly low – Scope 3 – it would still be a fairly low number once you attribute it back to New South Wales, but that's I guess what the requirements are to do. Again, it's, there's a debate amongst different economists about what the guidelines actually require and there was even back when the guidelines were developed, but I guess we don't support the approach that CIE have taken and we don't believe it's justified, and a number of the submissions in the original estimates – including one from The Australia Institute, as it happens – acknowledge that this is an issue, that it does give a very low number if you apply this, but you know, that it's an appropriate way to do it because that's what the cost-benefit analysis is designed to run.

PROF. BARLOW: Thank you.

MS LEESON: Can I just take us back to the emissions issue and the setting of baselines, which is a Commonwealth issue. I see in the documentation that the project will be allocated a baseline by the Commonwealth that you'll need to conform to or have a carbon price attached post that. Can you explain the process to us of how that happens and also, in that context, what the current baseline is on Glendell.

MR WALLS: We'll have to put that in writing, we can put that in writing and take that question on notice.

MS LEESON: Okay, thank you, that's fine. We would welcome that so thank you very much. Finally, I think any issues or comments you wanted to provide in terms of the department's assessment report and recommended conditions are flagged?

MR SCOTT: Yeah, sure, Commissioner. So there's just a couple of matters that we'd like to raise and we've provided separate submissions to the department which are appended to their assessment report, but we'll just quickly touch on them to close if that's okay.

MS LEESON: Certainly, thank you.

MR SCOTT: The first one is, it's one that you mentioned, and it's around the planning agreement and also the closure of the section of Hebden Road that we're seeking as part of the proposal. So in December we wrote to Singleton Council with a revised planning agreement offer of $5.15 million and that was subsequently accepted by council, the quantum of that. However, the terms of that offer were not agreed to in council's correspondence. Now Glencore do seek linkage between the terms of the planning agreement and the subsequent payment and the closure of Hebden Road. In our opinion, without there being a linkage that there's, then there's nothing to prevent council from collecting the planning agreement but then subsequently delaying or preventing the project by withholding the formal closure of the road. Obviously under the Roads Act council is the authority in regard to road closure and essentially the closure of Hebden Road is at their discretion. It's important to recognise that Glencore will not commence the project until an agreement's been reached regarding the closure of Hebden Road. The terms that we've put or that we originally put to council in December regarding the planning agreement, we sought to cover all aspects of the closure of Hebden Road as part of that agreement, which included the transfer of the closed road to Glencore as well as the on-going maintenance of the relocated Hebden Road and the project more generally. As part of the submission that we put

back to planning in February this year regarding conditions A14 and A15, we provided some alternate wording that in our opinion provided greater surety around that process and the closure of the road. So that's the first matter regarding the planning agreement.

The second matter was around road maintenance. So, there's a current draft condition, B100, which in our opinion allows council to capture additional value on top of the planning agreement amount that's been agreed to. So that condition has us undertaking periodic road surveys, dilapidation surveys throughout the life of the project, and then subsequently paying for any project-related impacts on the realigned road as a result of that. Now, we believe that any road maintenance contribution should form part of the planning agreement, which is in keeping with the original intent of developer contributions, and we note that aside from, you know, potential maintenance costs associated with the project – the project doesn't place any other burden on existing council services or infrastructure. As a result of that, the letter that we provided to Department of Planning in February does provide alternate wording to condition B100 which is consistent with other recent approvals. So effectively, that would look to have us pay for any road maintenance that results from construction activities associated with the project where there's likely to be a increase in traffic load on the existing network, and then similarly during decommissioning works as well we'd be looking to obviously contribute towards road maintenance as a result of increased traffic associated with that activity.

The final matter which we also wrote separately to the Department of Planning in regard to was in relation to noise and in particular the night-time sleep disturbance criteria. So we did provide a letter to Planning in response to how the noise policy for industry has been applied to the project and specifically in relation to that sleep-time disturbance criteria. We note that in the past that the IPC has applied that policy to consent conditions for Mangoola and also the Maxwell project, and we believe the way that the IPC has applied that in the past has been correct and consistent with the intents of the noise policy for industry and that's subsequently had a sleep disturbance criteria of 52 decibels applied. So, we'd be seeking similar criteria.

MS LEESON: Thank you. We might come back to some of that. The team in the office that's supporting the panel on this case has obviously had a lot of opportunity to examine some of these things and I think, Casey, do you have a question around the commentary that we've just heard from Glencore?

MS JOSHUA: I was just going to request if those condition amendments could be requested in writing and based on the department's final conditions suite, so don't just

provide the letter that was given to the department pre-referral to the IPC so that the panel can consider those requests, that would be appreciated.

MR SCOTT: Okay.

MS LEESON: Thanks Casey. Can we just go back to the road issue. I'm assuming Glencore pays rates?

MR SCOTT: Yes.

MS LEESON: Okay. So that's one question. I think, is your line of argument that your building a new road, it will be built to contemporary standards and therefore you shouldn't have to pay maintenance on it, have I misunderstood that?

MR HOLMES: No, the understanding is – that the road will be replaced so one road will need to be closed legally to be able to mine through it which is the existing road and then the new road opened so, you know, to proceed. Glencore's view is the issue really is around the ability for, you know, Singleton Council have this discretion as to whether to close or open the road and there's no time frame, they're not bound to close that road even if the project's approved. So that, because the project can't proceed without that being closed that creates, I guess, an impediment to investment decisions from Glencore. So the project wouldn't really proceed. What the draft condition here is not really in dispute over the $5.15 million, it's more around the timing of when that occurs and so it's to trigger that timing to only be contingent upon the road being opened. It doesn't better council's discretion to whether or not to close or open that road, but because the project essentially won't proceed unless the road is closed, that council doesn't get the money until that decision is made. So it almost creates a bit of a financial incentive for council to go through that process in a timely manner.

MR WALLS: It's Tim Walls. Essentially the project in order to substantially commence needs to relocate the road, and if we can't relocate the road, then there isn't a substantial project to progress. So we're just looking for the payment of the VPA to be attached to that so that we know that we've got that substantial project.

MR HOLMES: So the two conditions are linked in that the first, the proposed conditions for the road maintenance one is around actually quantifying what the impacts to the road network are from the key components of the project which may impact on that road, which are the construction and the decommissioning works. So when you've got additional heavy trucks and heavy vehicles using those road associated with the project – that's a reasonable cost to contribute to and that needs to be quantified, so you do a dilapidation survey pre those works being undertaken and

then after those works are undertaken, and then you attribute how much of that degradation is due to those projects works, bear in mind it's got - -

MS LEESON: You're comfortable with that approach and the payment of whatever that compensation needs to be if there is proved to be damage to the road, the new road.

MR HOLMES: That's right.

MR SCOTT: But it should be specifically linked to the construction activities and decommissioning works not for the life of the project.

MS LEESON: I understand that, and that's outside the 5.15 million?

MR SCOTT: Yes.

MS LEESON: Yeah. Okay. So I think in terms of the new road, we understand that. And then your concern is that the closure of Hebden Road, being at the discretion of council, that's under the Roads Act and I understand council wants to keep it that way and it's quite clear in its view when it met with us the other day, certainly the General Manager. And your concern is that it's at council's behest and therefore the ability to commence your project is somewhat compromised and so you're trying to link the two?

MR SCOTT: Yes. Correct.

MR HOLMES: It creates a, a driver, financial driver for council to, to go through that process in a timely manner because they then get the, the contribution payments but as - - -

MR WALLS: Really, at that high level, the, the reason this project to move forward with, which that payment is based - - -

MR HOLMES: Correct.

MR WALLS: - - - if, if, if that, that doesn't occur. So unless those other approvals are in place, there isn't this substantial mining project to be undertaken, so we're just seeking, yeah, the attachment of those two.

MS LEESON: No, I understand. The sentiment, I think, from council the other day was that there would be no problem in securing the closure of that road. Is that different from what your understanding is? Are you concerned that they won't do it?

MR SCOTT: We have had numerous discussions with, with council over a period of 18 months. I guess the concern is that there may be additional value attached to the closure of Hebden Road that council may seek as part of that. That's our main concern.

MS LEESON: All right. Okay. No, that's clear. Thank you. Okay?

MR PILTON: Okay. I'm fine.

PROF. BARLOW: Okay.

MS LEESON: Okay, look, that's been very helpful. Thank you. We did jump all over the place a little but that's typically what happens I think in some of these meetings. We do have the public hearing next week, as you well know, and we look forward to your presentation at that. There are a couple of follow-up things there that I think you've taken on notice. The office will liaise with you just to make sure we're on the same page around that. But, other than that, I'd really like to thank you for your time and what you've done for us this morning in terms of the meeting. So thank you very much. We'll close the meeting.

RECORDING CONCLUDED **[1.12pm]**