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TRANSCRIPT OF PROCEEDINGS

TRANSCRIPT IN CONFIDENCE

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INDEPENDENT PLANNING COMMISSION

MEETING WITH DEPARTMENT OF PLANNING AND ENVIRONMENT

RE: MOOLARBEN COAL MINE STAGE 1 AND 2 MODIFICATIONS

PANEL:	**GORDON KIRKBY** **PROF GARRY WILLGOOSE** **PROF CHRIS FELL**
ASSISTING PANEL:	**DAVID KOPPERS** **JORGE VAN DEN BRANDE**
DEPARTMENT OF PLANNING AND ENVIRONMENT:	**MIKE YOUNG** **STEVE O'DONAGHUE** **PAUL FREEMAN**
LOCATION:	**IPC OFFICE** **LEVEL 3, 201 ELIZABETH STREET** **SYDNEY, NEW SOUTH WALES**
DATE:	**10.31 AM, WEDNESDAY, 27 MARCH 2019**

MR G. KIRKBY: Okay. Well, we will get going. Good. Good morning and welcome. Before we begin, I would like to acknowledge the Traditional Owners on the land on which we meet, the Gadigal people, and pay my respects to their Elders past and present. Welcome to this meeting on development applications 05_0117 MOD 14 and 08_0135 MOD 3, in relation to the Moolarben Mine Coal Project from Moolarben Coal Proprietary Limited, the proponent, who is seeking approval to increase its open-cut coal production limits and optimise its coal processing and handling activities, with limited changes to its currently approved mining operations.

I am Gordon Kirkby, the chair of this IPC panel. Joining me are my fellow commissioners, Professor Garry Willgoose and Professor Chris Fell AM. The other attendees of the meeting are David Koppers and Jorge Van Den Brande, who are assisting from the Commission, and from the Department of Planning and Environment, Mike Young, Steven O'Donaghue and Paul Freeman. In the interests of openness and transparency and to ensure the full capture of information, today's meeting is being recorded, and a full transcript will be produced and made available on the Commission's website.

The meeting is one part of the Commission's decision-making process. It is taking place at the preliminary stage of the process and will form one of several sources of information upon which the Commission will base its decision. It is important for the commissioners to ask questions of attendees and to clarify issues wherever considered appropriate. If you're asked a question and are not in a position to answer it, 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. We will now begin. We might just start with the three department reps just identifying themselves for the sake of the transcript.

MR M. YOUNG: Yes. I'm Mike Young. I'm currently the acting executive director for resource assessments and compliance at the Department of Planning and Environment.

MR S. O'DONAGHUE: Steve O'Donaghue, acting director, resource and energy assessments.

MR P. FREEMAN: Paul Freeman, team leader, resource and energy assessments.

MR KIRKBY: Okay. Thanks. So we might start with – I guess if you could just give us a bit of a rundown of the project. And we have a few questions we might want to ask. But if you could just give us, I guess, a bit of a history of, probably, upfront, the sort of background as to what some of the issues as to the need for, you know, increased water discharge limits and things like that – just to sort of bring us through, I guess a bit of a context of how we got here.

MR YOUNG: Sure. That's fine. I will kick off and Stevie can chip in on details as required, etcetera.

MR O'DONAGHUE: Sure.

MR YOUNG: I do note, though, that the Commissioner, as I understand it, will be meeting with the company as well.

MR KIRKBY: Yes.

MR YOUNG: So I'm sure that, you know, they will give you possibly a more detailed rundown of – you know, from an operational and economic perspective why they're proposing what they're proposing to do. I guess, from our perspective, you know, Moolarben mining complex was approved in two main stages historically, stage 1 and stage 2. It's obviously a large open cut and underground coal mine that has been operating for some time now. It's located in an area, I guess, that has historically been subject to coal mining, particularly associated with the Ulan mining operations adjacent to Moolarben and more recently the Wilpinjong open cut coal mine to the east and there's also obviously the Bylong coal proposal further to the east in that, I guess, region.

So it is an area that has been subject to coal mining for long periods of time, both open cut and underground. Obviously, one of the key issues in that area is the Goulburn River and the catchment associated with the Goulburn River and then – and that obviously leads into the Hunter River as well. So those kind of water related impacts, groundwater and surface water discharges have been a key management issue for the mining industry in that area over a long period of time. In terms of, you know, the optimisation project, look, since it was approved there has been quite a number of modifications to the operations at stage 1 and stage 2 at Moolarben. I think it's better that you, I guess, put, you know, those questions in terms of the sequence and the justification of those modifications to the company because they're probably better – in a better position to explain that in detail.

But, I mean, our understanding of the current modification is really an optimisation of the current layout of the open cut pits – two of those open cut pits, to improve efficiency, to increase the rates of extraction and then also, obviously, the production. So in relative terms, it's a fairly minor change to the existing operations – existing open cut operations. There's no real change, as I understand it, to the underground operations, there's no real changes to, you know, the overall mining fleet and other aspects of the operations so it's really about, you know, increasing the extraction rate and production rate.

And I guess the other key aspect of the modification is recalibration of the groundwater ..... water balance across the mining operations as a result of the proposed modification but, arguably, principally as a result of previous modifications to the mine and the sequencing of how the mine is proposed to be developed in terms of the actual mining and also the sequence of dewatering and taking into account more recent monitoring data and also taking into account more recent implications of the adjacent Ulan Mine and the interactions – groundwater interactions with that mine.

So really, I guess the department's perspective – you know, we were looking at the – I guess, the land-based impacts associated with the expansion to the open cut, being particularly around biodiversity impacts – additional biodiversity impacts and the company's proposal to offset those impacts through an additional land-based offset area, an additional – a rehabilitation of the site and also I guess a relinquishment of previous areas that they were proposing to disturb and now are no longer proposing to disturb and doing, I guess, a trading sort of scheme associated with that.

Obviously, we relooked at things like noise and dust associated with those changes. I guess our findings in the assessment and based on input from the EPA is that there are really very minor changes there that are unlikely to result in any significant impacts on residents. The other aspect, I guess, in terms of amenity is obviously increased train movements as a result of the additional production. So there are some minor changes – I think it's going from - - -

MR O'DONAGHUE: Go from seven trains to eight trains - - -

MR YOUNG: Seven to - - -

MR O'DONAGHUE: - - - on average.

MR YOUNG: Yes. So there is a minor increase in that and we are aware, from our work at Wilpinjong and Bylong, etcetera, that there are residents that live along that rail line that obviously are concerned about rail noise and the impacts of that. I guess our assessment indicated that the relatively minor change in numbers of changes cumulatively wouldn't make a significant impact, based on the current situation. So really, that's, I guess, the land-based impacts. Our focus, though, I think – I mean, we assessed all of those matters in accordance with relevant policies, etcetera. We're generally satisfied with the proposed offsets. OEH has indicated that they're generally satisfied with that, as well as the Commonwealth Department of Energy and Environment, because the matter is a controlled action, so we also consulted with that agency through the process.

So – and in terms of dust and noise and other amenity impacts, you know, the EPA is generally satisfied that they can comply with the relevant criteria in the consent and also in their EPL. So, really, the main issue and the main focus of our consultation with the company, with – particularly with the EPA and also one of the key issues raised in submissions was to do with, I guess, impacts on water, both surface water and groundwater. Goulburn River, both in terms of its aquatic ecology, in terms of the flow, issues associated with the discharge point and other sort of geomorphic potential impacts and, in particular, on I guess salt load and salinity. So that was the focus of our assessment. Obviously, the company has done a lot of work over time, it has had a number of groundwater models that it has updated from time to time.

There's a requirement to do that regardless so it's not anything that's new but they have used – this modification is an opportunity to recalibrate the model, use existing monitoring, or more recent monitoring data, etcetera, to alter the predictions. And I

guess what that has found is that in order for the approved operations to continue, as approved, essentially, through various modifications, that there will be a surplus of water that will need to be managed and they have proposed to install an RO, reverse osmosis, plant in order – as a key measure to meet relevant water quality objectives prior to discharge. So there's an issue of concentrations and then there's an issue of volumes as well. That's obviously in the context of the historical mining, the ongoing mining, both at Wilpinjong and more particularly at Ulan.

And so we work very closely with the EPA. I think we make it quite clear in our report that the government as a whole is quite keen to – over time, to reduce salt loads, particularly in the Goulburn River, both for aquatic ecology purposes but also for downstream impacts, potentially within the – any implications for the salinity trading scheme within the Hunter River itself. So there is a push from the EPA and from the department to, I guess, work with – over time to reduce those salt loads. And so the company originally proposed a volumetric and a concentration limit on its discharges and the EPA and the department considered that further improvements could be made and so you will see that's a main focus in our report and assessment and we believe we have come up with a solution there that would ultimately result in a better environmental outcome, both in the near term and then in the longer term. So I'm happy to ask – you know, answer specific questions. I don't know if there's anything in particular that you wanted to add there, as an introductory - - -

MR O'DONAGHUE: Just on the – and I agree with Mike in terms of the key issue through the assessment was looking at the EC concentrations and the heavy metals in particular in the sort of upstream site. And there's a lot of debate about that between the EPA, the company and us in terms of what was an appropriate – what would be an appropriate discharge limit. And I guess we put conditions in there to – for more work to be done and a time period to do that in – with the involvement of ..... or a university involvement in trying to come to a better landing on what the concentration limit should be, based on that study and progressing that.

MR YOUNG: Well, I think – yes. That's right. I think there's a couple of things there. One is that we obviously consulted the IESC through the process and they provided some recommendations. I think they broadly agreed that the key issue was those discharges opposed to the mining itself. And I guess the other key thing to say, that in terms of those limits, there was some debate and there has been various studies so obviously the coal mines themselves over time had done all sorts of aquatic ecology and studies to work out, you know, what the base line – what quality has been historically, etcetera. OEH science division has done some work in that area as well on what, you know, those data sets indicate in terms of what water quality objectives there should be for that part of the river.

And so part of the issue through the process was that whilst the EPA and the department are very keen to see a reduction and use appropriate limits to achieve that reduction in terms of salt loads and salt concentrations, there was a level of uncertainty about, well, which is the right data set, what does that really indicate, how does that – how can that data be best applied under the ANZECC Guidelines to

achieve an appropriate concentration limit. And there was various figures derived and, obviously, there was a level of disagreement between the experts about what that should be.

So part of what we thought was, well, let's drive some beneficial outcomes immediately and then, over time, let's do the property scientific investigation to work out longer term what those limits ought to be. And I would say that that's an important piece of work, not just Moolarben but arguably for Ulan as well so that government can have – and indeed the mining companies can have – and the community can have a better understanding of that information and, therefore, an appropriate outcome that we can then deliver through appropriate regulation over time.

MR KIRKBY: Okay. One of the things I guess I'm trying to get my head around is that, obviously, the change – changes that have come through from the groundwater modelling. And it's not clear, I don't think, either in the environmental assessment or in your assessment, exactly what's driving this. It's sort of a reference to recalibration. Is this – because obviously there are minimal changes to the actual mine. But - - -

MR YOUNG: Yes.

MR KIRKBY: - - - obviously the modelling is saying there's now significantly more groundwater and a water surplus from a mine that originally was approved as not having a surplus. I'm just sort of trying to get my head around what's driving this. And we can ask the company too about this. Are these modelling issues within the mine? Are there impacts from other mines doing things that are - - -

MR YOUNG: So there's - - -

MR KIRKBY: - - - impacting on Moolarben?

MR YOUNG: Yes. There's - - -

MR KIRKBY: Is it a combination?

MR YOUNG: There's a couple of things. One is I guess that it was always envisaged there would be a need for some discharge. So that's nothing new. The fact is that the mining hasn't advanced to the state that they've needed to do that. So they've only done that once, during a very high, you know, wet weather event, in 2011 or whatever it was. So they haven't needed to do that historically. But it didn't mean that they didn't have approval to do that or weren't anticipating that.

MR KIRKBY: Yes.

PROF G. WILLGOOSE: So it wasn't ever planned for there to be discharges at this point anyway.

MR YOUNG: That's right. Yes.

PROF WILLGOOSE: Okay.

MR YOUNG: So it's as the mine progresses, obviously particularly with the underground - - -

PROF WILLGOOSE: Yes.

MR YOUNG: - - - that you accumulate a lot more groundwater - - -

PROF WILLGOOSE: Yes. Okay.

MR YOUNG: - - - that would need to be managed. So that's the first point. The second point is that it's normal to revise and recalibrate models over time. In fact, we often put that in as a requirement, to actually do that - - -

PROF WILLGOOSE: Okay.

MR YOUNG: - - - recognising that there's a level of uncertainty there. That being said, we know that the community and particular members of the community that, indeed, know a lot about this sort of stuff and live in the area and have provided submissions on this application and previous ones – that somehow – that the modelling was wrong. I guess we don't see that as the modelling was wrong. We see this as a result of key changes that had been previously approved. That has been the main driver of the changes.

Now, in terms of what are the actual things that go into making up, you know, the precise level of – you know, if it was 1.6 meg and now it's two point something – you know, what proportion as resulting from this change versus that change and so forth – you'd have to probably talk to the groundwater modellers. But there is on page 25 of the groundwater assessment done by HydroSimulations – I don't know whether you've got that in front of you.

MR KIRKBY: No.

MR YOUNG: So the first half of that page in particular – whilst it's not – you may still have residual detailed questions. But that summarises, I guess, the inputs to the potential changes in the model. Here's another one for Chris.

PROF WILLGOOSE: Yes.

PROF C. FELL: Thanks .....

MR YOUNG: At the top half of that page.

PROF WILLGOOSE: Yes. Yes. Yes. I guess the concern is given everything you've said, that – okay, yes, the groundwater has to be recalibrated, and I think that's an entirely sensible approach to take – is that there is the confusion of okay, how much of this is because the model's now improved as opposed to how much of this is impact from this? Now, they suggest very little impact as a result of the changes that they're proposing and that it's dominated by the improved data.

MR O'DONAGHUE: I mean, they do have a – like, in the groundwater assessment – I mean, they do compare the approved mine, like with all their water -updated modelling – they do do a model scenario the approved mine versus the modified mine so that you can do a comparison between the two in terms of just what the mod's driving as opposed, you know, any model changes or assumptions.

PROF WILLGOOSE: Yes.

MR O'DONAGHUE: Yes.

PROF WILLGOOSE: Yes. I guess, you know, looking at it from a groundwater model of - - -

MR O'DONAGHUE: Yes.

PROF WILLGOOSE: - - - perspective – is it'd be nice to be able to pin down – because not only have they got new data, but they're actually using a different model.

MR O'DONAGHUE: Yes. That's right.

MR YOUNG: They are. Yes.

MR O'DONAGHUE: Yes.

MR YOUNG: Yes.

PROF WILLGOOSE: Okay. They've completely reconstructed the model.

MR O'DONAGHUE: Yes.

MR YOUNG: They have. Yes.

PROF WILLGOOSE: So there was going to be some going back to almost the ground zero in terms of construction of the geology in that model.

MR O'DONAGHUE: That's the - - -

PROF WILLGOOSE: Yes.

MR O'DONAGHUE: Yes. Yes.

PROF WILLGOOSE: No, that's okay. I've got that – yes.

MR YOUNG: Yes.

MR O'DONAGHUE: Yes.

PROF WILLGOOSE: So, you know, I mean, it's not just – you know, there's a number of steps in the – going from whatever model they had – I've forgotten. There was .....

MR YOUNG: MODFLOW. Yes. Yes.

MR O'DONAGHUE: Yes.

MR YOUNG: Yes.

PROF WILLGOOSE: That's right. That's MODFLOW, which is a gridded model - - -

MR O'DONAGHUE: Yes. And MODFLOW-SURFACT.

PROF WILLGOOSE: - - - to - - -

MR O'DONAGHUE: And then – yes.

MR YOUNG: Yes.

PROF WILLGOOSE: That's right. MODFLOW-SURFACT. And now we're going to MODFLOW-USG - - -

MR O'DONAGHUE: Yes.

PROF WILLGOOSE: - - - which – you know, which is a – you know - - -

MR O'DONAGHUE: The most – yes.

PROF WILLGOOSE: - - - another step again.

MR O'DONAGHUE: Yes.

PROF WILLGOOSE: But going to – I mean the issue between going between MODFLOW-SURFACT or the original MODFLOW and going to USG is that, you know, they've got to completely re-do the grid. They've got to re-do the layers. Have they changed the – they don't even say whether they've changed the geology in there, other than – you know, okay, obviously the representation – the triangles

rather than the grids. But have they actually modified the geology as well? They don't mention it.

MR YOUNG: I mean, these are questions you should probably put to the modellers, but - - -

PROF WILLGOOSE: Yes. Okay.

MR YOUNG: But I - - -

PROF WILLGOOSE: I just wondered whether you have faced that question, so - - -

MR YOUNG: No. I mean, I guess I would ask for, you know – I guess from a regulatory point of view and assessment point of view, I guess, "Well, what are the – you know, the likely impacts that we're trying to manage here", and I guess it's, you know, the company – like, it's in all of our interests obviously, you know, to manage things appropriately, etcetera, but the company is included in that in the sense that they're going to have to design their mine and their water balance, you know, appropriately. Particularly, they're going to have to size and, you know, any RO plant and then any sort of storages, etcetera.

So, you know, regardless of any sort of assessment issue, just from an operational perspective, it's important for them to obviously recalibrate things over time, and so I guess the feeling I have is, you know, is there – is the modelling now sufficiently updated with the right sort of assumptions and the right sort of data such that it provides a reasonable estimation of potential impacts and, therefore, how can they be managed as opposed to necessarily – because part of the issue is that, you know, this is about updating a model for an approved operation.

PROF WILLGOOSE: Yes.

MR YOUNG: And so the only sort of delta, I suppose, here is for the increased – manage in increased discharge.

PROF WILLGOOSE: Yes. But I'm not thinking from a community perspective. You know, it's all of a sort of coming at the community at the same time - - -

MR YOUNG: Yes.

PROF WILLGOOSE: - - - and then, as a result, they're thinking, "Well, maybe this is as a result of a modification as opposed to - - -"

MR YOUNG: Yes.

PROF WILLGOOSE: "- - - well, this was the natural thing that was going to happen as they get more data."

MR YOUNG: Yes. Yes.

PROF WILLGOOSE: So - - -

MR YOUNG: So, look, I mean, you know, those detailed questions I would – yes – put to Noel or whoever.

PROF WILLGOOSE: Yes. There was another question. You did mention it and it's something that I don't – I mean, I know about the Hunter Valley Salt Trading Scheme. That's something I had some early involvement with back at the start of my career, but are other mines in this area part of the salt trading scheme?

MR YOUNG: No.

PROF WILLGOOSE: So they're not.

MR YOUNG: No. No. They're not.

MR O'DONAGHUE: They're separate.

PROF WILLGOOSE: So they're basically just managed separately to the salt trading scheme.

MR YOUNG: They are managed separately.

PROF WILLGOOSE: So the concern obviously then is the load that comes in at Denman from the Goulburn River that potentially - - -

MR YOUNG: That's right.

PROF WILLGOOSE: - - - the increased load potentially - - -

MR YOUNG: So, obviously, the EPA needs to manage it as a whole system, you know, in order to make the part that they do manage through the trading scheme work appropriately and achieve the outcomes.

PROF WILLGOOSE: Yes.

MR YOUNG: And so I think it's recognised that, whilst the mining is not necessarily preventing that to operate appropriately, there is – if they are driving certain outcomes in the Hunter, there should be similar sorts of outcomes that align with that in the Goulburn - - -

PROF WILLGOOSE: Okay.

MR YOUNG: - - - which contributes to that.

PROF WILLGOOSE: So, from the point of view of – let's think of the trading scheme. So in terms of the proposal to have a discharge licence, there's no constraint on when they can discharge then, because there is the Hunter – the trading scheme has - - -

MR YOUNG: Its high flow .....

MR O'DONAGHUE: Yes. Yes.

MR YOUNG: High flow. Yes.

PROF WILLGOOSE: - - - you have to store, and do its high flows and all that sort of stuff, so they can discharge at any time, even during low flows in the Hunter.

MR YOUNG: They can. Yes.

MR O'DONAGHUE: The current licence – yes – allows it.

PROF WILLGOOSE: Okay.

MR O'DONAGHUE: The EPL.

PROF WILLGOOSE: Okay. Yes. Okay. So, I mean, that's a pressing point - - -

MR KIRKBY: Yes.

PROF WILLGOOSE: - - - in terms of a desal, so – yes.

MR KIRKBY: Because, obviously, the EPL will be reviewed, because there's initial limits and then I think there's a study they will do to come up with - - -

MR YOUNG: Yes.

MR KIRKBY: - - - appropriate longer-term. Is there scope then to, I guess, introduce into the EPL those sorts of controls on discharge?

MR YOUNG: Look, the EPI can obviously alter its licence at any stage. It's fair to say that, for example, for Wilpinjong and for Ulan, these kind of limits are not in the consent, they're in the licences.

MR KIRKBY: In the licences.

PROF WILLGOOSE: Okay.

MR YOUNG: And so what we're proposing here, which was done in consultation with the EPA – they were quite keen for us to incorporate some of these things within the consent itself and then, obviously – but there's also – that doesn't preclude

the EPA from making changes or details associated with high-flow conditions, etcetera.

PROF WILLGOOSE: Okay. So - - -

MR YOUNG: I think part of the issue though is, obviously in the Goulburn, you're dealing with a very different catchment. You're also very high in the catchment, etcetera, so - - -

PROF WILLGOOSE: Well, the salinity ..... in the Goulburn is very different to the Hunter naturally - - -

MR YOUNG: Yes.

PROF WILLGOOSE: - - - because a lot of the salinity is driven by groundwater coming out of the Triassic salts that we see in stone, so.

MR YOUNG: Yes. That's right. That's right. But I think also that it's probably recognised, just from a practical perspective, that, you know, there would be – from an operational perspective, it might be very, very difficult to manage water on the site and only discharge in high-flow conditions because of the relative rarity – or frequency of what those conditions might be.

PROF WILLGOOSE: Doesn't stop that being applied to the Hunter though, so.

MR YOUNG: Well, the Hunter, obviously, is a much bigger catchment and there's a different scenario .....

MR KIRKBY: I've just got a couple of - - -

PROF FELL: Just following on from – the salt that you recovered in ..... actually doesn't leave the site in the end. It ends up into brine.

MR YOUNG: That's right.

PROF FELL: The brine is going to be stored in ..... underground mine where it may contact groundwater and end up back in the river, if you follow me, because groundwater actually exchanges with the river. ..... happy about the storage.

MR YOUNG: So, look, obviously, that was a key concern both in submissions, but also the EPA raise that as a key issue. The company has done a number of rounds of work to look at that. In layman's terms, my understanding is that, whilst some of it may be stored underground, the preference is to store it in aboveground areas and deal with it there, but there is a proposal that, you know, they may need to store it underground. However, the volume and nature of that, and the depth of that, in terms of interactions with surrounding groundwater, firstly, the permeability is very low, so the migration timeframes are very high; secondly, that the surrounding groundwater

is – whilst it may not be as saline, it is still relatively saline in the areas that it would be put back into the underground workings; and, thirdly, is it's not clear that – well, it's not my understanding that the contribution from those particular seams, etcetera, to the river itself – the connectivity there is very limited, and so the actual – all of those sort of dilution/migration/connection issues would mean that – it's not saying that there won't be some contribution, but the relative contribution in the scheme of things would be very, very minor.

PROF FELL: So, effectively, salt balance looks okay.

MR KIRKBY: Yes.

MR YOUNG: So that's – I mean, there's a very clear paper there from Noel Merrick explaining those key aspects, and certainly from, you know, the Department of Industry, Water and so forth didn't raise any particular concerns about those issues. So there are obviously other management options for how you would manage brine. I guess, you know, our – we were satisfied that the proposal to potentially put some of that material in the underground workings was probably the most – or the least environmental risk associated than some of the other options. Yes.

PROF FELL: No. Thanks.

MR KIRKBY: Okay. I've just got a couple of other things that have come through in submissions.

MR YOUNG: Does that make sense on that issue?

MR O'DONAGHUE: Yes. Yes.

PROF FELL: Yes. Yes.

MR O'DONAGHUE: Yes. Yes. And just – I know you've raised concerns before about diffusion of brine. So I think that was looked at by Noel Merrick as well in his modelling in terms of potential movement. So there was – that came up in submissions as well so that was something that was looked at. And, you know, certainly, long term storage on the surface particularly at the end of the mine life, you know, you need to do something with the brine and, you know, there's quite a volume of storage of underground to do that. But part of the conditioning, you know, in consultation with the EPA, was to put in that – you know, do further work on the brine management plan prior to doing that. So there's a condition in the licence to develop that further and how that would be done with the – in consultation with the EPA.

PROF WILLGOOSE: I mean, there's still one lingering concern I have and it wasn't addressed in the groundwater reports – was that because of longwall there's a quite considerable amount of cracking in the goaf - - -

MR YOUNG: Yes.

PROF WILLGOOSE: - - - above the mine so there's potentially – we're not just talking about the connectivity of that coal seam, we're talking about the connectivity of the goaf and how it connects the various seams above it and how high the goaf goes.

MR YOUNG: Yes. I would see that more as an issue of potentially downward movement of water - - -

PROF WILLGOOSE: Yes. Certainly, that's - - -

MR YOUNG: - - - as opposed to – yes.

PROF WILLGOOSE: But long term, the ground waters will come into ..... I'm thinking of, you know, maybe 100 years down the road - - -

MR YOUNG: Yes.

PROF WILLGOOSE: - - - so that there is then the potential for connectivity between the aquifers, at least over the region that the goaf is, which is, you know, maybe 100 metres or so above the seams.

MR YOUNG: Which is why I said limited connectivity. Yes. That's right.

PROF WILLGOOSE: Yes. Yes. Okay. You all right, Chris?

PROF FELL: Yes, I'm fine.

PROF WILLGOOSE: No, no, you're just looking at me like - - -

PROF FELL: We have had big discussions about behaviour of pockets of high brine.

MR YOUNG: Yes. Sure. Sure.

PROF WILLGOOSE: Yes.

MR KIRKBY: Just a couple of clarifications I have got. There's no actual overall coal extraction, it's just a per annum limit.

MR YOUNG: Yes. Which is consistent with how we regulate all other coal mines.

MR KIRKBY: Yes. Yes. Just wanted to clarify that. And the other one that has come up in submissions, just if you have got any context around this Drip infringement plan and where that is.

MR YOUNG: Sure.

MR KIRKBY: It's probably not a directly related issue but, yes, it would just be good to have some context.

MR YOUNG: Look – yes. Obviously, The Drip, you know, is a key geological and hydrogeological feature in the landscape. It's located to the north. I'm not sure if you're aware of where it's located to the north of the - - -

MR KIRKBY: Yes – no, I have been there from previous - - -

MR YOUNG: Yes. You have been there. Yes. Clearly, it was a key issue that was the subject of detailed assessment in previous applications, particularly associated with the underground for part of the mine plan. What this application currently before the IPC indicates that there would be no additional impacts as a result of the modification on the drip and I think, from a hydrogeological point of view and a, you know, subsidence point of view, the department accepts that. There is a requirement to transfer that area into the national park estate.

MR KIRKBY: Yes.

MR YOUNG: And that was, you know, negotiated in previous assessments and OEH were happy to have that added to the national park estate. My understanding is that whilst there was a timeframe in the conditions that that has since lapsed; however, the obligations that the company had in regard to putting in the relevant paperwork, etcetera, to enable that to occur has been done and that, at the moment, I think it's - - -

MR O'DONAGHUE: Yes. It's with OEH. There's just issues with subdivision plans. I don't know if that has been resolved yet. But they're sort of in the – they're in the process of doing it but there's steps they have got to go through.

MR YOUNG: Can we – can we just find out from OEH exactly where that's up to because - - -

MR O'DONAGHUE: Yes.

MR FREEMAN: My understanding is it's at an advanced stage but we can clarify that for you.

MR O'DONAGHUE: Yes.

MR YOUNG: Because I – we wrote that some time ago now, that that was the status some months ago, so it would be good to work out where it's up to now.

MR KIRKBY: Okay.

PROF WILLGOOSE: Yes. The community would probably like to know, I suspect.

MR YOUNG: Yes. Absolutely. Yes.

MR KIRKBY: Yes. They will bring it up. Just – if you could do a context.

PROF WILLGOOSE: Yes.

MR KIRKBY: Do you have any further questions, Chris?

PROF FELL: Just a very broad one. A number of the submissions talked about greenhouse impacts in mining coal and we have got the ..... judgment out there. What guidance can you perhaps give us about thinking in this direction at the moment?

MR YOUNG: A couple of things there that would probably be worth considering. Firstly, this application is not proposing to mine any more coal, as I understand it, in terms of overall quantitative coal. I think that's correct.

MR O'DONAGHUE: It still – yes. They're looking at the same resources. It's just changing the open cut - - -

PROF WILLGOOSE: Changing the timing - - -

MR O'DONAGHUE: Yes. Changing the timing so there will be, in terms of the – the rates will increase.

PROF WILLGOOSE: Okay. Yes.

MR O'DONAGHUE: So I guess the generation will be advanced, you know, ... sequential - - -

MR YOUNG: But the overall – the overall - - -

MR O'DONAGHUE: Yes.

MR YOUNG: - - - additional greenhouse emission associated with this modification would be very minor in terms of - - -

MR O'DONAGHUE: Specifically, the - - -

MR YOUNG: - - - no actual additional coal resource being mined.

MR O'DONAGHUE: Yes. That's right. Yes.

MR YOUNG: That's number one. Number two is that the IPC should probably acquaint itself with the recent Wallarah 2 judgment which - - -

MR KIRKBY: Had a look at that. Yes.

MR YOUNG: - - - also had some – which also considered greenhouse gas issues associated with that particular mine. That was, of course, a judicial review as opposed to a merit appeal, which was Rocky Hill. So there's some relevant matters there that probably the IPC should be aware of. Thirdly, I would suggest that at this stage, you know, the New South Wales Government, it has an aspirational target of zero emissions by 2050.

It also has a renewable energy action plan and other policies like that but there is no particular government policy that, at this stage, you know, has a particular target in terms of a near term target or indeed any particular policy that prohibits or precludes the development of coal resources, subject to appropriate assessment under the EPA Act.

Our responsibility really is to, you know, consider the application before us and any impacts associated with that and I guess our conclusion is that from a greenhouse perspective, the modification in and of itself would have, you know, negligible additional climate change impacts compared with the – what's already approved. So I think, really, that's probably all I can say on that matter.

PROF FELL: That's very helpful.

MR YOUNG: But I certainly refer you to the Wallarah 2 judgment which came out, I think, late last week.

MR KIRKBY: Any further questions?

PROF WILLGOOSE: No. I think my questions are for the proponent - - -

MR KIRKBY: Yes. I presume they're bringing some of their key consultants.

PROF WILLGOOSE: No. I don't think so.

MR KIRKBY: Two of them are coming I think.

MR YOUNG: Right. Okay.

PROF WILLGOOSE: I don't think their groundwater person is coming so - - -

MR KIRKBY: Okay.

MR YOUNG: All right.

MR KIRKBY: Thank you very much for coming along.

PROF WILLGOOSE: Okay. Yes.

MR YOUNG: No worries.

MR O'DONAGHUE: All right.

MR YOUNG: Thanks, guys.

PROF FELL: Thank you.

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