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TRANSCRIPT OF PROCEEDINGS

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O/N H-1383206

INDEPENDENT PLANNING COMMISSION

MEETING WITH DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT

RE: TAHMOOR SOUTH COAL PROJECT (SSD 8445)

**PANEL: PROFESSOR RICHARD MACKAY AM (CHAIR)
PROFESSOR CHRIS FELL AO**

**OFFICE OF THE IPC: LINDSEY BLECHER
STEPHEN BARRY
KATE MOORE**

**DEPARTMENT: SARA WILSON
STEVE O'DONOGHUE
MIKE YOUNG**

LOCATION: ONLINE

DATE: 12.03 PM, WEDNESDAY, 10 FEBRUARY 2021

PROF R. MACKAY: Okay. Well, we will get formally underway and I will declare the meeting open. Good morning and welcome. Before we begin I would like to acknowledge the traditional owners of the various lands on country on which we meet and pay my respects to their elders past, present and emerging. Welcome to
5 the meeting today to discuss the application for Tahmoor South Coal Project, State Significant Development 8445. My name is Professor Richard Mackay and with me is my fellow Commissioner, Professor Chris Fell AO and we form the panel appointed to determine this application. Joining us from the Office of the
10 Independent Planning Commission is Lindsey Blecher.

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. And to assist with that process it would be appreciated if anybody who speaks could simply say their name
15 immediately before they speak to assist with that process. And I notice that we've also just been joined online by Steve Barry from the Independent Planning Commission, who will also observe the meeting. The meeting is one part of the Commission's decision-making process. It's taking place at the preliminary stage of the process and will form one of several sources of information upon which the
20 Commission will base its decision.

The meeting has been requested by the Commission panel to enable the panel members to ask some questions and to clarify aspects of the application. It's not an opportunity for any part to make a presentation, nor to make submissions to the
25 panel. Submissions are, of course, welcome from any party but through a separate process. Meeting participants are asked to keep any introductory remarks brief and to respond directly to the Commissioners' questions. And in addition to the pre-advised subjects, the Commissioners may ask additional questions of attendees and if there's a question asked and you're not in a position to answer, please, feel free to
30 take the question on notice and to provide any additional information in writing, which we will then put up on our website. To ensure the accuracy of the transcript, I repeat the request that everybody simply say their name before they speak and that we don't talk across one another, please. And could I commence then by inviting the Department representatives to introduce themselves, please.

35 MR M. YOUNG: Thank you, Richard. It's Mike Young, Executive Director, Energy, Industry and Compliance from the Department of Planning Industry and Environment.

40 MR S. O'DONOGHUE: Richard, Steve O'Donoghue, Director of Resource Assessments. I report to Mike under the same department.

MS S. WILSON: And Sara Wilson. I'm a Consultant Assessment Officer with the
45 Department.

PROF MACKAY: Thank you very much for that. And, obviously, the panel has considered the Department's assessment report and a, you know, very extensive array of related documentation from the three phases through which this application has been. We have also inspected the property and we met earlier today with the
5 applicant. So we've got a number of questions that we would like to ask and I will provide, perhaps, before that an opportunity for the Department if you would like to make any preliminary comments or remarks and I will provide another opportunity at the end of the meeting if there's anything further to be said by way of wrap-up. So does the Department wish to state anything upfront before we get into the questions,
10 please?

MR YOUNG: Nothing specific, Richard. Just to thank the – the Commissioners for the opportunity to – to, I guess, respond to any questions and to clarify any aspects of our assessment report. As you've indicated, this project has been under assessment
15 for some significant period of time and there's a range of documentation. Certainly, we've tried to present a full assessment of the various elements of the proposal and the various impacts in some detail with various technical appendices and so forth. And given that you've had the opportunity to – to review that material and other material then and inspect the site and meet with the company, then, you know, I
20 think it's probably in the interests of efficiency to cut straight to the questions, you know, at this stage. Unless there's anything else that Steve or Sara wanted to add at this point in time, but I think that's probably the most efficient way forward rather than presenting what's already in our report.

25 MR O'DONOGHUE: Not from me, Mike.

MS WILSON: Yes, happy with that approach.

30 MR YOUNG: Okay, thank you.

PROF MACKAY: So it's Richard Mackay. Thank you for that. And I might also just note by way of preliminaries that we had advised the Department of a range of sort of topics and themes. There are a few of them we won't raise in this meeting, because we are conscious that we have a following meeting with the Environment
35 Protection Authority and we will just – and then the Department will be represented observing at that meeting, so we will just ask those things once, again, in the interests of efficiency. So I might throw to Professor Fell and would you like to ask some questions, please, Chris?

40 PROF C. FELL: Thank you, Chairman. Chris Fell speaking. I get to ask the first two questions, I think. I thank you, firstly, for a very comprehensive report with lots of other material. It has been extremely useful to us. But, I guess, my first question has to do with the groundwater modelling plan. You recall that your water section of DPIE came out saying that before a decision was taken on this particular project the
45 applicant should submit an updated groundwater management plan. Now, you subsequently had the groundwater management plan and earlier groundwater was looked over by Mr Middlemis. And he was of the opinion – and he didn't give a

clear comment about the groundwater management plan – but he said the groundwater study that had been done was class 2/3 and was suitable for decision-making at this stage.

5 But just from the viewpoint that we have part of your department saying we should get a new one before we make a decision and the assessment report saying that's probably not necessary, I thought we really should ask you the question and just fill us in a little bit more on that. And it's probably a risk management situation as far as we're concerned. So - - -

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MR YOUNG: Yes, Chris, look, I will hand over to Steve and Sara, but, I guess, the first thing I would say – it's Mike Young speaking – the first thing I would say is that, you know, getting more information is – is, you know, always a good thing, but, you know, we – we, obviously, received advice from Hugh Middlemis, who is a highly respected recognised independent expert in regard to these – and was involved in the preparation of the Australian Groundwater Modelling Guidelines, as you would probably be aware, Commissioner. And it's – there are provisions in the conditions that we recommended to update and refine the model, but that for the purposes of decision-making and assessment the evidence that we had was that the groundwater model was – met the relevant guidelines for assessment purposes and decision-making purposes. But there's some probably specificity in there that – that Steve and Sara may wish to add to.

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MR O'DONOGHUE: Thanks, Mike. And, thanks, Commissioner. Steve
25 O'Donoghue. Look, just to clarify, I guess, first the – the DPIE Water and NRAR – so it's really, effectively, a joint submission from them. They have made a couple of key recommendations about, you know, rebuilding and recalibrating the groundwater model, you know, within two years of, you know, determination of the project, you know, to incorporate updated monitoring data, improve some of the modelling statistics, refinement of the model grid, incorporate the heterogeneity in the model –
30 are some of the comments they made.

And, I guess, the second point they made was they wanted the groundwater modelling plan to be provided before determination. Not so much a groundwater management plan, but a model plan on how they would go about, you know, rebuilding and recalibrating the model. So, I guess, the company in its second amendment report provided a – like, a groundwater modelling plan to inform, you know, how that would occur. DPIE Water and NRAR considered that, you know, further revisions would be useful prior to determination. I guess, in discussions with
35 Hugh Middlemis about the need for a – you know, a model build plan at that point – the advice from Mr Middlemis and in our consideration it's not really a determinative issue for the assessment.

40

So it wasn't really required to inform, you know, the predictions at this point and it didn't really have a bearing on, you know, predictions about groundwater impacts or management and monitoring requirements. So while it would – could be useful to have it, it wasn't really something that was necessarily required prior to
45

determination. And often, you know, in our conditions we do require management plans to be incorporated prior to – you know, before construction commencing or operations commencing, for example. The other thing I would say is that we – in the conditions we spoke to DPIE Water and sent DPIE Water and NRAR our proposed
5 draft conditions, which did include incorporation of the groundwater management plan – a groundwater modelling plan that included all the requirements that they were seeking.

For example, about the – the details about the rebuild and recalibration and how they
10 would do that: to incorporate an independent third party review, incorporate additional monitoring data and outcomes of research on Thirlmere Lakes. So DPIE Water and NRAR provided a response back to that and were happy with the proposed timeframe, which was really to develop that plan prior to construction commencing and gave us advice to that effect. So there was further consultation
15 with DPIE Water, you know, on that and the framing of the conditions that they were happy to - - -

MR YOUNG: Is it fair – it's Mike Young speaking. Is it fair to say, Steve, that this is more about the timing of the – or a plan to update the model over time as opposed
20 to an output that would vary the predictions that are before the Commission for consideration?

MR O'DONOGHUE: That's correct, Mike. It's more of a – the – the consent conditions require them to, you know, within two years rebuild the model and
25 recalibrate it. I guess, the plan which would be submitted prior to construction commencing would have the details of how they would do that. There's opportunity for DPIE Water and NRAR to review that in consultation to make sure that all the features that they want to go into that over that model rebuild over the next two years would be incorporated.

30 MR YOUNG: And, Steve, is it – Mike Young again – it's typical that we would require recalibration and updating of the model over time, but it's an additional condition to require that to be done in consultation with NRAR and DPIE Water prior to construction commencing. So it's a more stringent condition than would
35 normally be applied.

MR O'DONOGHUE: That's correct, yes. Yes.

PROF FELL: Chris Fell. Thank you for that. That has been very helpful
40 commentary. Now, the second question I have – unless anybody else wants to – no – the second question I have - - -

MR YOUNG: Chris, Richard was, I think, putting up his hand there. Sorry.

45 PROF FELL: Was he? No, I think he was giving me a sign “okay”.

PROF MACKAY: No, it's Richard Mackay. Could I just check, please, with the Department, in light of that further engagement with DPIE Water and NRAR regarding the consent conditions, did they then not press the issue about the amendments prior to – or the revision prior to determination? Did they regard that as
5 an alternative satisfactory process?

MR O'DONOGHUE: Look, that's correct. They – like, they – we got advice back that they were, you know, satisfied with the conditions, so that – you know, they didn't make any commentary about requiring that before – you know, before
10 determination. It's part of that further correspondence.

PROF MACKAY: All right. Thank you. And, look, over to you, Professor Fell.

PROF FELL: Sorry, the second question has to do with greenhouse gas emissions and the Commission is looking hard at this aspect. We note that the Department questioned the applicant and got responses, RF3 and 4. RF3, the applicant provided detailed information on a much more updated situation in 2018 and '19 and provided a couple of tables, 6 and 7, which gave the predicted emissions for the new application. What came very evident to us was using the applicant's metric of
15 emission efficiency it – and that is tonnes of CO₂-e per tonne of saleable coal. The information in table 6 and 7, in fact, gave a very high figure for that which, when we looked at that figure against a graph that they provided in the SPAR, which looked at other coal mines in Australia, it put it, like, up near the top.
20

And our question was, are we concerned about level of emissions in a situation this world is getting more interested in this whole thing. And I note that in the draft conditions you provided, should the project be approved, you asked them to, as far as possible, maximise beneficial use of methane in the situation. But I note that in the information they provided there was a great deal of straight venting, not very much
25 use of flaring. And the capture efficiency was 31 to 38 per cent, not very high. And the question, I guess, that came across the Commission's mind was possibly more flaring if that's possible. I believe they have three different flare stacks set to different levels with methane and, indeed, using flaring as a potential way of reducing the greenhouse impact given that methane is 25 and – versus carbon.
30

35 So we will in the next session with the EPA, who have control over this situation via air quality, really ask that question again. But before we launched into that I thought it was a sufficiently important area to actually, say, listen to you in a bit more detail about the whole question because, at least, in our initial thinking it was something
40 that stood out very clearly. And if one reengineered the process you could probably do somewhat better.

MR YOUNG: Thank you, Professor Fell, and certainly understand the question and the concerns of the Commission in regard to the intensity of greenhouse gas
45 emissions compared to, you know, saleable tonnes of coal. My understanding, just sort of turning the question around a little bit, is that the EPA doesn't directly regulate greenhouse gases. So they regulate point source emissions. You know,

NOx and SOx and those sorts of things. But, obviously, we're meeting with the EPA later and they can clarify their position, but just to be clear that the EPA doesn't directly regulate those things. And so it's right that you would talk with us, I guess, more broadly about the assessment of those aspects and the implications of those aspects.

Certainly, the updated information does indicate that this particular coal seam and the extraction of it in regards to scope 1 emissions does put it in the – you know, it is relatively high compared to other resources. And the company in my understanding has been – has a third party company that captures parts of those emissions and use them for power generation. And there's other parts of those emissions that are flared. And then there's, obviously, fugitive emissions as well. So we, certainly, were aware of that. My understanding, though – and I'm sure Steve and Sara can clarify – but there are actual technical or practical difficulties in capturing all of that and commercially or from a technical point of view being able to run a power generation sort of facility the entire time depending on the nature of the gas and the gas supply that might be available from the coal seams as the mine progresses. But, Steve, did you want to - - -

MR O'DONOGHUE: Yes.

MR YOUNG: - - - sort of comment on some of that?

MR O'DONOGHUE: Yes, look, I think – we certainly asked them the question to update the greenhouse gas assessment, because the data was based on, you know, 2013 data. So they did go back to, you know, looking at information from 2019/20 sort of periods to update that. And that was really, you know, breaking it down to, you know, fugitive and fugitive emissions. I guess, if you look at the sources of it, if you look at the previous EIS and the secondary – the first amendment and second amendment reports – probably about a quarter – you know, a good quarter of the emissions came from ventilation. You know, which is difficult to capture. So that's going out through the ventilation stacks.

You know, it's not the pre-imposed drainage, so there's an element there that would be difficult to capture because it's low methane levels, but in high volumes going – ventilated, you know, for OH&S reasons. But, certainly, the pre-mining and post-mining, you know, drainage – what they currently – what they currently do and they propose to do is to get it back to the surface infrastructure area, which has the power generation and the vent – the venting options and the flaring.

So, I agree, the information they provided showed that there seemed to a very high level of venting and, I guess, the two options they put forward, which was around 26.5 per cent, I think, you know, reduction – you know, through either flaring or venting – sorry, flaring or power generation is low and there is opportunity, you know, to increase that further reduction, I would think, and – which our conditions would certainly require them to investigate on a yearly basis in their annual reviews how they're performing in capturing the methane in the power generation, but that at

a minimum, you know, flaring that rather than directly venting it. That's certainly something that we're aware of and that our conditions sort of require them to maximise that reduction in the methane gas.

5 PROF FELL: Yes. I guess – Chris Fell again.

MR O'DONOGHUE: Yes.

10 PROF FELL: I guess, the issue the Commission came to was to look at – as well as doing that – also minimising the greenhouse gases that are emitted, which means possibly changing the methane to carbon dioxide by flare, if you like.

MR O'DONOGHUE: Yes.

15 PROF FELL: Because that of itself is an additional benefit. I think we're of the same mind about the whole thing, it is just how one progresses down the lowering the total greenhouse emissions.

20 MR YOUNG: I mean, certainly – it's Mike Young here – certainly, our conditions were designed to require the company, should the project be approved, to demonstrate how it's proposing to do that. And, certainly, we would support, you know, strengthening those conditions if the – or putting more specificity, you know – potentially a strategy or a plan or something like that to be submitted, you know, should the project be approved to demonstrate, you know, how those technologies
25 could be deployed to minimise to the greatest extent practicable.

PROF FELL: Yes.

30 MR YOUNG: So, certainly, something like that, Professor Fell, we would be very supportive of.

PROF FELL: And, possibly, also a methane balance over the plant so we understand totally where stuff is coming from and going to. But let us talk with the EPA or whoever about that. But, as you say, the EPA properly controls a vent, but
35 not the greenhouse emissions, if I understand it correctly.

40 MR YOUNG: I mean, Steve, you can maybe clarify sort of the regulatory arrangements around greenhouse gas emissions, but it's my understanding they are not directly regulated by the EPA.

45 MR O'DONOGHUE: Well, that's correct. Look, I guess, under the Protection Environment Operations Act, you know, they – you know, they do regulate point source discharges for a range of pollutants, but in terms of managing greenhouse gases it's not explicitly covered under their – you know, under their sort of discharge limits that they would apply. So you wouldn't find any environment protection licences that have, you know, load limits or discharge limits that would apply to, you know, greenhouse gas emissions.

PROF FELL: Thanks.

PROF MACKAY: It's Richard Mackay here. And I'm presuming that there aren't precedents of such thresholds or limits being embodied in an application or a consent. I mean, I fully appreciate the difficulty in ascribing numbers, but, ultimately, I think the Commission is turning its mind to how this becomes a measurable, accountable – other than a sort of statement of good intent or a – you know, a future consideration of a yet to be prepared plan.

MR YOUNG: So – I mean, I understand the Commissioner's dilemma in considering this issue and, certainly, in the context of the different sorts of sources. You know, the venting versus the flaring versus the capturing for power generation, etcetera. The difficulty we have, Commissioners, is that the coal is the coal in some sense and if you extract it then the scope 1 emissions will occur. I guess, there are some ways in which it can be beneficially used or, as Professor Fell has indicated, maximising flaring to convert from methane to carbon dioxide. Certainly, the Commission would be aware that in Narrabri Gas, which, of course, is different in the sense that it's coal seam gas proposal and, therefore, you have a lot more ability to put some numbers towards the - - -

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PROF FELL: Of course.

MR YOUNG: - - - extraction of the gas because it's coming through pipes and can be calibrated and measured, whereas, obviously, with open cut coal mines you've got – it's a much more difficult thing. So, I guess, we have not sought to take a quantitative approach to it, but more of a qualitative approach to it, but we would obviously support the Commission if that was to be strengthened or further measures put in place to address that concern.

PROF FELL: Thank you, gentlemen. They have been very helpful comments. Chris Fell speaking.

UNIDENTIFIED MALE: Thank you.

PROF MACKAY: Chris, do you have any further questions related - - -

PROF FELL: I think it's over to you, Chairman, now.

PROF MACKAY: All right. Well, we might – we might move in a different direction. We would be very grateful for some comments from the Department in relation to what appears to be a financial viability threshold. I mean, we are very conscious of the substantial modifications that have been made to this application across its three stages: the removal in their entirety of three longwalls. And we did take the opportunity yesterday to inspect Dog Trap Creek. And we note the assessment report's proposal that part of longwall 103 be shortened by approximately 400 metres and see the obvious environmental benefit that that would have.

We're also turning our mind to the other – adjacent section of Dog Trap Creek and longwall 104B and note that the Department appears in its consideration of these issues – and there's a juggle of different constraints – but it appears to have said, "Well, in terms of the mine viability there's a threshold. We can take 400 metres off
5 one longwall and believe that would be reasonable and viable. But to do the same with the next longwall, albeit with a fewer number of pools along the creek, that would be crossing a line". What we're interested in, I think, is two things. One is just the general prospect of the shortening of the longwalls in that area and the thinking behind that implied financial viability threshold. I mean, we're very
10 conscious of the myriad of, you know, coal price currency rates and everything else that affects viability, but at the end of the day it's an interesting line to draw between the economics and the environmental impact.

MR YOUNG: Yes, thank you, Commissioner. It's Mike Young speaking.
15 Absolutely. I mean, that is – that is part of the dilemma, you know, inherent in any assessment of these projects that do have, you know, material environmental impacts but also material economic and social benefits. I would argue that, you know, we are not in a position necessarily – and I'm not sure if the Commission is as well – to necessarily draw a definitive line about commerciality or viability of a particular
20 project. As you say, those things fluctuate and there's all sorts of drivers, including coal price, but customers and other sorts of material costs and the investment, etcetera, that is relevant.

My understanding is that that decision was based on two key factors. One is the
25 significant amendments already made to the project to minimise environmental impacts and impacts on the built environment. And, secondly, as to the further changes associated with 103 and the significant benefits we felt that would derive in terms of minimising environmental impacts. But the benefits derived from further changes were – whilst there would be some benefits to those, that the benefits were
30 not so substantial that it outweighed the benefits – the economics, I suppose – benefits of – or the issue of sterilising further significant volumes of coal. And I think we looked at the volume of coal that might be sterilised if we were to make changes to 104. And I think it was fairly substantial, from memory, but I will let Steve and Sara put some meat on the bones of some of those decision-making
35 processes.

PROF MACKAY: Yes.

MR O'DONOGHUE: Steve here. So, I guess – in our report I guess we outline in
40 table 4 – you know, looking at some economic environmental, I guess, costs and benefits of reducing longwalls. So for 104B, you know, to avoid undermining, you know, the creek you would need a reduction of 700 metres. It would sterilise, I guess, double what 103B would do, so it's about 0.6 million tonnes of coal. I value that at about 106 million. I guess, the benefits would avoid undermining eight
45 stream pools in this instance and reduce the likelihood of impact to the pools. I guess, one thing that came out of it, I guess, in sort of our discussions with the company too is that 103B is where the – there's sort of more of a valley feature that

it commences. So it goes more into an incised topography. Whereas in 104B it does tend to – even the creek – there’s a creek line there – it tends to flatten out.

5 So 103B is really where valley closure, you know, predictions increase, because –
just because of the terrain. 104B – you know, the likelihood – like while it
undermines it, given it’s a flatter terrain, the likelihood of, you know, those valley
closure impacts, you know, through – and upsidence are less likely. And if you look
at – if you look at figure 20 in our report too, it gives a figure there of – you know,
10 showing what the valley closure is at points – the pond points along the creek line,
you know, for – for this 103B and without 103B. So there are benefits – even taking
103B out, you know, there are – there are clear benefits in, you know, reducing
impacts on 104B as well. So while it undermines it, there is a reduced likelihood of
impact as well through that section of the creek. You know, partly because it’s sort
of a flatter terrain through there.

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PROF MACKAY: Thank you for that. I mean, I should say for the purposes of
clarity that we – we are sort of turning our mind to that part of the longwall and
looking – looking both at the issue of, is it worth the economic impact of shortening
103? What do you save? And so that’s very helpful in terms of the valley structure
20 and the closure threat. And we’re also looking at, well, if – if 103 is foreshortened
why would you not take the next section of valley, which is also replete with surface
pools and - - -

MR O’DONOGHUE: Yes.

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PROF MACKAY: - - - and a similar bunch of issues. So that’s very helpful and,
look, we will certainly revisit those figures. Thank you. Professor Fell, do you have
any supplementaries on that?

30 PROF FELL: No.

PROF MACKAY: Could I, perhaps, ask a fairly specific question. We visited the
Wirrimbirra Sanctuary, the National Trust property yesterday and we observed the
bushfire damage and the works that are undertaking. And we’re conscious that this
35 is a property that’s on the New South Wales State Heritage Register and that in its
submission on the current application Heritage New South Wales suggested that
there should be no longwall mining at all beneath the sanctuary that’s on the State
Heritage Register. It seemed – I mean, clearly, the Department’s assessment report
is taking a different view to that advice. We’re not aware of precedence for,
40 effectively, complete undermining of a State Heritage Register item, so would be
grateful for your – perhaps, some comments that explain the rationale for regarding
that effect as appropriate.

MR YOUNG: Steve, I will hand over to you on that one. You’re probably across
45 the detail.

MR O'DONOGHUE: Look, I guess, the key thing here is that, you know, when you look at the – where the location of the Wirrimbirra Sanctuary is – so it's directly above, you know, longwalls 103A and 104A, which is in the middle of that first longwall panel section. So there would be – I guess, the first thing is, is by – you
5 know, removing those longwall panels again there's an economic question there about – that's a substantial resource. Effectively, the panels would be too short to longwall in, so you wouldn't – for the development of it, it wouldn't be, you know, worth the cost of developing that given that the sanctuary is, you know, in the middle of those longwall panels. So there's a – I guess, there's an economic issue there in
10 terms of the viability of those panels if you take them out and, I guess, then, you know, the staging of the whole – of the mine itself.

And, I guess, in terms of – you know, it is predicted – since the panels are, you know, directly under the sanctuary, you know, it would experience the full range of
15 subsidence impacts on there. But, certainly – you know, which would include, you know, cracking in drainage lines. There would be impacts on built features, etcetera. But, I guess, the built – it is managed through the built features in the extraction plan in terms of impacts and managing impacts on built structures in particular, so there would be a requirement to – in our conditions to, you know, make a building
20 serviceable. You know, there's no impacts at the full cost of the company. So there's a requirement in our conditions to bring them back to serviceability, etcetera.

And, again, there's a process there to manage those impacts at the full cost to the company. So, you know, I think the conditions, like any other built structure within
25 the area, have been developed to manage and ensure that any impacts are fully remediated, you know, and they can continue operations.

MR YOUNG: Could I also say that – it's Mike Young here, Steve – is it right to say that – well, firstly, all of these areas are in a mine subsidence district that has been in
30 place since, I think, 1975. So that, you know, there is a process and an expectation that features and structures in those areas (a) initially need to be built to, potentially, withstand or address subsidence and/or that there are – there's a whole statutory regime there that, obviously, any damage associated with underground mining activities we would need to address any of those impacts. I understood also – was
35 there – was there some contribution or some consultation with the sanctuary and also with Heritage New South Wales in terms of the final conditions, Steve?

MR O'DONOGHUE: I would have to check on any feedback we did get. Probably not with the sanctuary itself. And we certainly consulted with, you know, agencies
40 on the final conditions. I would just have to check to see any input from Heritage New South Wales on that.

PROF MACKAY: Look, I think – thank you for all of that. It's Richard Mackay. I think we would be grateful to have that clarified exactly what consultation did or
45 didn't take place. Because we do understand the point that if you were to take out the longwall panels beneath the sanctuary it fundamentally affects the geometry of the entire application, not just a little corner the way we were talking about for Dog

Trap Creek. And, look, understanding the issue about the built structures, the sanctuary was originally set aside for conservation relating to the natural environment and educational function related to that Bargo Brush ecosystem.

5 And so the question that I think we still wish to turn our minds to is if you do have total subsidence and you have cracking of drain lines, albeit with the repair work that they've demonstrated in Tahmoor North, is that an appropriate thing for a State Heritage item? So I'm very happy if you would like to, perhaps, take that on notice, but it goes to the question of the integrity of the State Heritage item that was set aside
10 because of the natural ecosystem.

MR YOUNG: No, absolutely, Commissioner, we will certainly take that on notice. I would say that – you know, there are many properties that do get undermined within those areas and as you have seen from Tahmoor North the assessment is based
15 on a worst case outcome and one might end up in a situation where there's no noticeable impacts whatsoever and that, obviously, the rebuilding after the bushfires, any buildings that would need to be put in place would need to meet relevant subsidence requirements, etcetera, and approval through council and Subsidence Advisory New South Wales. The other thing I would say is I'm fairly sure, but I will
20 get back to you with detailed information, that there have been other examples in New South Wales of heritage items being undermined.

In fact, in that Tahmoor area, as I understand it, associated with Tahmoor North, there were some heritage items that have been – I don't know if you would call it
25 successfully undermined, but certainly undermined and managed to preserve those values.

MR O'DONOGHUE: That's right, Mike. And, certainly, in the extraction plan for Tahmoor North there has been a lot of consultation and preparation of the heritage
30 management plans with council for local listed heritage items, you know, and where State items may be impacted as well. Like, in terms of, you know, impacts on, you know, terrestrial ecology and creeks, I guess, the key – the key impact again would be on, you know, potential ponds through the sanctuary and impacts through the creek system, you know, rather than impacts on – impacting on terrestrial
35 biodiversity and saying, "Right, you know, there's no prediction that there's going to be impacts or reduction in habitat quality for – you know, for terrestrial ecosystems. But most of the impacts are sort of confined through the cracking of the creek beds and pools, etcetera.

40 PROF MACKAY: Thank you both. And could I just clarify, I think what we are interested in would be precedence relating to items on the State Heritage Register. We have become familiar with the heritage assessment documentation related to items of local heritage significance and the various provisions that are put forward and addressed through conditions, so it's really about that issue of total undermining
45 of a State-listed item. But we should probably move on. I have one more question, if I may, and it's a general question. We are conscious that we are coming to this application in a context where the applicant has an existing track record for the

operation of Tahmoor North with respect to the subsidence and has already been through a process of remediation activities with respect to the natural environment, cracked creeks and the like, and with respect to affected houses.

5 So there is a sort of precedence that goes right to the heart of some of the key issues in this application. And we wanted to ask the Department about your position – having regard to what the applicant has already been able to demonstrate in its response, how has that informed your assessment and understanding of what is now proposed further to the south, please.

10 MR YOUNG: Thank you, Commissioner. Look, clearly, the assessment is undertaken both in isolation in the sense that you have to assess the application before – you know, the DA on its merits. But, clearly, from an evidence-based position and a technical analysis, relevant experience in the same geology – although
15 there are differences in terms of the particular mine geometry and depth of cover and so forth associated with Tahmoor North and, indeed, the sensitivity of overlying infrastructure and environmental features – so there’s a level of comparison that can be undertaken, but there are differences as well. There’s also the nearby Bulli Seams operation to inform, I guess, you know, the nature and extent of impacts and how
20 they might be able to be managed within the region.

And all of that also speaks to ensuring that when we undertake the assessment of Tahmoor South that we also have to consider the cumulative impacts on those matters as well associated with all those operations. And so we’ve certainly sought
25 to do that. Look, in general terms – and I will let Steve and Sara comment further – but in general terms our understanding – and we’ve been involved in managing and enforcing those conditions of consent at Tahmoor North for many years and acknowledge that there have been impacts both on creeks and on some built features in those areas. But the nature and extent of those impacts, particularly on built
30 features, I think, have been possibly far less than what was originally predicted and on things like water supply infrastructure and so forth and that, generally speaking, they can be managed in accordance with statutory obligations and there are ways of doing that.

35 That’s not to diminish the – you know, the significance of potentially undermining houses and the fact that, clearly, our assessment shows that based on the predictions that there will be a number of houses that may be, you know, materially impacted. But my understanding – and Steve can maybe – and Sara can put some numbers on it – but the nature and extent of the predicted impacts versus the actual impacts in
40 Tahmoor North, the actual impacts have been significantly less than what was predicted. That being said, we certainly – it is more unusual than it was historically for mining companies to now to be proposing to undermine relatively large numbers of dwellings and other infrastructure in New South Wales.

45 It has been quite a long time since the government has been asked to consider that. Now, clearly, it is a mine subsidence district that has been there for, you know, 40 years. You know, there is an expectation – there’s a mining lease that has already

been issued in those areas and has been in place for a long period of time – and that, you know, Subsidence Advisory New South Wales – and, obviously, it used to be the Mine Subsidence Board, and clearly the government has left that Subsidence Advisory in place and the relevant attached legislation, understanding that, you
5 know, there can and will be potentially going forward a need for that statutory and regulatory regime to manage these sorts of impacts. So – but I will let Steve and Sara maybe talk about some of the particular instances and numbers associated with impacts at Tahmoor North and on houses and creeks and water supply features and so forth.

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MR O'DONOGHUE: Yes. Mike, Steve here. I guess, it's first to say that – that in terms of – all the impacts are based on – you know, at the end of the day on the subsidence modelling. Subsidence affects modelling. That then feeds into, you know, the impact assessment. I guess, there's well-established – I guess, the
15 company that has done the subsidence assessment, Mine Subsidence Engineering Consultants, or MSEC, they have got extensive experience in that Southern Coalfields area. Plus including in Tahmoor North. So they have – they have got a wealth of knowledge and information and empirical data in terms of, you know, predicting both, you know, conventional and non-conventional subsidence effects to
20 feed into the impact assessment.

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They have done – they have also done work with Subsidence Advisory New South Wales in terms of classifying – you know, from the housing side in terms of classification system and looking at impacts on houses in Tahmoor North. That has
25 also, you know, fed into the assessment for Tahmoor South. So a lot of the learnings and information and impacts from Tahmoor North and more broadly in the Southern Coalfields have fed, you know, directly into the – you know, the subsidence assessment and impact assessment on houses, creeks and bores, you know, for example – as examples.

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So, I guess, there's two – there's two key sources of information that are used, which is the incremental profile method for conventional subsidence. So a lot of the – that was based on information on vertical subsidence tilts and strains from the Southern Coalfields and calibrated to Tahmoor North, you know, for conventional. And then
35 for non-conventional, you know, they have relied on ACARP research on valley closure to feed into that and observations, you know, across the Southern Coalfields as well on valley closure upsidence, etcetera, to inform impacts on creeks. So it's quite – it's a robust assessment. Subsidence Advisory New South Wales, you know, was supportive of the – you know, the predictions and how they classified impacts on
40 houses and it's quite a robust assessment and based on, you know, the experience in Tahmoor.

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So, I guess, that's one thing to say. Like, in terms of impacts on houses, when you look at how the mine plan has been progressed from the EIS – the original EIS to the
45 – you know, first amendment to the second amendment, you know, one of the key considerations was trying to reduce impacts on houses, particularly those directly above the longwall. So as in our report, there has been a reduction from 751 houses

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above longwall to 143 houses. So, I guess, the modelling that they have done – and based on Tahmoor experience and unconventional impacts, for example, and a probabilistic method was used to assess it – you know, documented – you know, an impact range from R0, of no impact to R5, which is a rebuild.

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MR YOUNG: Steve, it is Mike Young here. I think just in terms of turning the question around a little bit - - -

MR O'DONOGHUE: Yes.

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MR YOUNG: - - - and maybe Sara can comment. Can we comment on the experience at Tahmoor North in terms of numbers of houses that have actually needed to be acquired or rebuilt or the number of bores that have needed to be compensated and those sorts of things? I don't know if we have some of that information. And it may be helpful to contextualise the risk and the nature and extent of impacts that we might be expecting.

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MS WILSON: I think one of the – one of the important things to note, if we're talking about bores, is the fact that a lot of the – the original modelling determined that about 72 bores in Tahmoor North would require make-good provisions. And I think in reality only about six of them – or, actually, two in Tahmoor North and six at Bulli Seams operations have actually required them. So that sort of tends to indicate that the modelling itself is actually quite conservative and in reality the requirements for make-good provisions and the requirements for some of the house rebuild or house repair is actually significantly less in reality.

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I would have to have a look at the figures for Tahmoor North in terms of what was originally predicted and what has actually been the case. There has been a 2016 report that was commissioned – done by EMSEC and commissioned by Subsidence Advisory in New South Wales that does have those figures in it, but I don't have them in front of me.

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MR O'DONOGHUE: Probably one thing to add in conjunction with the bores about the conservative nature is that in Tahmoor North – I think in the – where there was 1890 homes of commercial operations that had some level of subsidence impact. Out of that, you know, the advice is that eight properties required an acquisition order or requested acquisition out of that number. You know, the predictions for Tahmoor South is that – now, potentially – and based on the conditions that we've put in – put on the – based on the advice of Subsidence Advisory New South Wales – is that, you know, up to 22 houses could require acquisition if the – you know, but it's a conservative prediction in terms of those numbers when you compare it to Tahmoor North. And whether people take it up or, you know, look at other options like rebuild as opposed to acquisition, there's a question there as well.

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PROF MACKAY: Thank you for – it's Richard Mackay – thank you for all of that. If – so if those comparison numbers are readily to hand, I think it would be helpful and appropriate.

MS WILSON: We can do a summary of that for you.

PROF MACKAY: I think that's all of the questions that the Commissioners wanted to ask, but I think – Mr Blecher, do you have any questions?

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MR L. BLECHER: Yes, thank you, Chair. Lindsey Blecher speaking. I note that the planning application seeks to supersede the two existing development consents for the Tahmoor North operations and I wanted to hear how the interaction between the existing and proposed applications will interact and how – how that will be managed and if the current application allows for any changes to the current operations at Tahmoor North, which the Commission should be aware of.

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MR YOUNG: It's Mike Young here. I will begin that response, Lindsey. It's not unusual and, in fact, preferred from a regulatory point of view to – where there are extensions to existing mines that operate under one or two historical consents that after a certain period of time under the most contemporary consent that companies be encouraged or, indeed, required to – that companies be required to surrender their historical consent so that the entire operation is regulated under a single contemporary consent that reflects contemporary standards and requirements and that any management plans and so forth that may apply are appropriately updated, etcetera, so that there's a single regulatory regime for the new operation.

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So, in summary, it's nothing new and, in fact, is best practice and I think everyone is in agreement that it's the best way to regulate operations like this going forward. But whether there's any specific issues that need to be considered, Steve, in regard to the particularities.

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MR O'DONOGHUE: Look, probably just to say that there's a number of consents under the Tahmoor North mining, so there's still – there's still mining continuing in Tahmoor North which doesn't come under the consent. So there's still things to do in a number of those consents related to, you know, operations – mining operations, but also, you know, rehab, you know, for subsidence and requirements through – you know, for that Tahmoor North. So the new – the Tahmoor South one doesn't extend into that area, so those – those aspects of those consents still need to stay alive to – you know, to complete the work that's done.

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I guess, the overlap is really in some ways in two key areas. One is the surface infrastructure area. And, I guess, the way we've looked at the consent is that there's a whole lot of work to be done in terms of, you know, noise mitigation works, for example, at the pit top area. But the existing consent is covering – the pit top area would still manage, for example, noise impacts to some degree and receptors until those works are done and the secondary extraction starts in about two years. And then the Tahmoor South consent in terms of noise limits would kick in and replace that while that's sort of staged in.

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So probably the other area too is – in the report, you know, we've flagged that part of the proposal. It is to be able to potentially store water in the Tahmoor North mine as

well. That's not – while the transfer of water is being sought it's not – it doesn't form part of this approval and there's still, you know, potentially modification required to be able to store that water as part of their water management sort of strategy.

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PROF MACKAY: Thank you for that. I think – it's Richard Mackay. If we're of a mind to approve this application I suspect we may just seek to have some further interaction with the Department to make sure we get that transition right, consistent, embody in the consent what we need to bring across, if anything. I mean, I'm
10 conscious it's already addressed in the draft consent conditions, so thank you for that. Could I just do two things, please. Firstly, Mr Blecher, can we make sure the EPA know we're just going to be, perhaps – would it be all right with everybody if we started the EPA meeting at 10 past 1? I'm getting nods of consent. So could we just let them know we've run a little over time and I hope that is okay at their end?

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MR BLECHER: Sure.

PROF MACKAY: Secondly, can I check whether either Commissioner Fell or the Commission officers have anything else to ask or say?

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PROF FELL: No, thank you.

PROF MACKAY: Can I just offer the Department representatives a chance if there's anything else you wish to say either responsively to something we've already
25 covered or that we haven't asked but, perhaps, should have.

MR YOUNG: Not at this stage. But we've got a couple of things to take on notice there and we will get back to you on those. And, yes, the complexity around those interactions between the existing operations and, if it is approved, the new operations
30 – because of those number of historical consents there is probably a little bit more complexity than would otherwise be the case for a typical extension. So I didn't – I didn't probably acknowledge that in my opening remarks on that surrender discussion, as Steve has reminded me.

PROF MACKAY: Look, thank you for that. And I think complexity is a good word in the case of the current application. Could I say on behalf of the Commission that we are very grateful for your time and for your advice during this session. It is extremely helpful to be able to engage directly and clarify the matters that we've
40 raised. So thank you for making the time and, more importantly, thank you for turning your minds to those matters. As I recall, we are going to hear from you a little bit in relation to Wirrimbirra Sanctuary, the State Heritage Register issue, but also what engagement there might have been about draft consent conditions or the approval.

45 About the remediation of houses in Tahmoor North, if that data is available. And we would certainly welcome some further advice communications about the changeover in the event that the consent is issued. In terms of timeframe, as the Department is

well aware, we've got the public hearings 15, 16 and 17 February. If we receive information from you before then we will put it up on the website in advance of the meeting. I'm not in any way suggesting that that's essential, but if you have partial information it's probably better to send it to us so we can get it out there so people
5 can see it before the public hearing. I would be very grateful if you can get back to us by the 24th, being the sort of formal public submissions deadline. And apart from that, I think, we're about to take a five minute break and then all jump back into another meeting for the EPA. So I expect to see you shortly.

10 MR YOUNG: Thanks. And we will certainly get back to you. You know, I think those issues we can address very quickly, Commissioner. So, yes, certainly by early next week I would expect.

15 PROF MACKAY: That would be much appreciated and thank you very much. I'm conscious of the time. I will thank everyone and declare the meeting closed.

MATTER ADJOURNED at 1.04 pm INDEFINITELY