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TRANSCRIPT OF PROCEEDINGS

TRANSCRIPT IN CONFIDENCE

O/N H-1390667

INDEPENDENT PLANNING COMMISSION

PUBLIC HEARING – DAY 1

RE: TAHMOOR SOUTH COAL PROJECT

PANEL:	**PROFESSOR RICHARD MACKAY AM** **PROFESSOR CHRIS FELL AO**
COUNSEL ASSISTING:	**RICHARD BEASLEY SC**
OFFICE OF THE IPC:	**LINDSEY BLECHER** **NINA HARRISON**
LOCATION:	**SYDNEY**
DATE:	**9.57 AM, MONDAY, 15 FEBRUARY 2021**

PROF MACKAY AM: Good morning and welcome to day 1 of the Independent Planning Commission's online public hearing into State Significant Development application for the Tahmoor South Coal Project SSD 8445. I am Professor Richard Mackay AM and I am the Chair of the Independent Planning Commission Panel. Joining me is my fellow Commissioner, Professor Chris Fell AO. We also have Richard Beasley SC as counsel assisting the Commission at this public hearing. Before we begin, I would like to acknowledge the traditional custodians of the land on which we variously meet and pay my respects to their elders past, present and emerging, and extend those respects to elders and all indigenous people from other communities who may be participating today.

The applicant owns and operates the Tahmoor Coal Mine located between the townships of Tahmoor and Bargo, approximately 75 kilometres southwest of Sydney. The applicant seeks planning approval for the expansion of underground longwall mining to the south of the existing mine workings. Under its proposal, up to 33 million tonnes of run-of-mine coal would be extracted from seven longwall panels over a 10 year period. I note that the Department of Planning, Industry and the Environment in its assessment report has concluded that the application is approvable subject to conditions. The Minister for Planning and Public Spaces has directed the Commission to hold a public hearing into the application.

He has asked the Commission to determine the application within 12 weeks of receiving the final whole-of-government assessment report from the Department of Planning, Industry and Environment. However, this timeframe has been extended to account for the holiday shutdown period and the revised target date is 19 April 2021. In line with regulations introduced in response to the ongoing COVID-19 pandemic, we are conducting this public hearing online with registered speakers provided the opportunity to present to the panel via telephone and via video conference. In the interests of openness and transparency, we are livestreaming proceedings on the Commission website. A full transcript of the three-day hearing will also be published in coming days.

The Commission was established by the New South Wales Government on 1 March 2018 as a standalone statutory body operating independently of the Department of Planning, Industry and Environment and other agencies. The Commission plays an important role in strengthening transparency and independence in the decision-making process for major development and land use planning in New South Wales. The functions of the Commission include determining State significant applications, conducting public hearings for development applications and other matters, and providing independent expert advice on any other planning and development matter when requested by the Minister for Planning or the Planning Secretary.

The Commission is the consent authority for this State Significant Development application because more than 50 unique public objections were received. It is important to note that the Commission is not involved in the department's assessment of State Significant Development applications, nor in the preparation of

the department's assessment reports. Commissioners make an annual declaration of interest identifying potential conflicts with their appointed role. For the record, no conflicts of interest have been identified in relation to our determination of this development application. You can find additional information on the way we manage potential conflicts on our website.

This public hearing forms one part of the Commission's process. We have also inspected the site and met with the department, the applicant, Wollondilly Shire Council, Wingecarribee Shire Council, and the Environment Protection Authority. The transcripts from these meetings have been published on the Commission's website. After the public hearing, we may convene further meetings with relevant stakeholders if clarification or additional information is required on matters raised. As to the next steps, following the public hearing we will endeavour to determine the development application as soon as possible, noting that there may be a delay if we find that additional information is needed.

Written submissions on this matter will be accepted by the Commission up to 5 pm Wednesday, 24 February 2021. And you can make a submission using the "Have your say" portal on our website, or by email or post. So the purpose of the hearing, we invite interested individuals and groups to make any submissions they consider appropriate during this hearing. However, the Commission is particularly assisted by submissions that are responsive to the Department of Planning, Industry and Environment's assessment report and the recommended conditions of consent. All submissions made to the department during exhibition of the environmental impact statement have been made available to the Commission.

As such, today's speakers are encouraged to avoid repeating or restating submissions they've previously made on this application. The Commission must emphasise that there are certain matters that by law it is not permitted to take into account when making its determination and, therefore, submissions on such matters cannot be considered. These factors include the reputation of the applicant and any past planning law breaches by the applicant. Now, as to how the hearing will run, before I get underway I would like to outline how today's public hearing will run.

We will first hear from the Department of Planning, Industry and Environment on the findings of its whole-of-government assessment of the application currently before the Commission. We'll hear from Wollondilly Shire Council second and, thirdly, from the applicant. We will then proceed to hear from our registered speakers. While we will endeavour to stick to our published schedule, this will be dependent on registered speakers being ready to present at their allocated time. Counsel assisting, Richard Beasley SC, will introduce each speaker when its their turn to present to the panel. Everyone has been advised in advance of how long they have to speak.

A bell will sound when a speaker has one minute remaining. A second bell will sound when a speaker's time has expired. And to ensure that everyone receives their fair share of time, I will ensure that speakers adhere to these times. However, I do

reserve the right to allow additional time as required to hear new information. If you have a copy of your speaking notes or any additional material to support your presentation, it would be appreciated if you would provide a copy to the Commission. But please note that any information given to us may be made public. The Commission's privacy statement governs our approach to managing your information, and our privacy statement is available on our website. Thank you. And I'll now hand to Mr Beasley as it's time to call our first speaker.

MR BEASLEY SC: Yes. We should have from the Department of Planning, Industry and Environment the authors of the assessment report. So we should have Mike Young, who's the Executive Director, Energy Industry and Compliance, and Steve O'Donoghue, who's Director, Resource Assessments.

MR YOUNG: Yes. It's Mike Young here from the Department of Planning, Industry and Environment. As you said, I'm assisted by Steve O'Donoghue, who's the director in my assessment team. Just confirming that you can hear me okay, Commissioners?

MR BEASLEY: We can.

MR YOUNG: Thank you. We did send through some slides. So we're hoping that those slides could be shared at this time. Alternatively, I can share them from my screen if that's required.

MR BEASLEY: We're still – I'm told we're just getting them up, Mr Young.

MR YOUNG: Okay.

MR O'DONOGHUE: And just to confirm, Steve O'Donoghue here, just confirming you can hear me okay?

MR BEASLEY: Yes, we can hear you, Mr O'Donoghue. And those slides look like they're about to come up now.

MR YOUNG: Great. I think that would be of assistance to everyone as we talk through the information we've got to present today.

MR BEASLEY: Sure.

MR YOUNG: So I'll just wait till they come up, if that's all right.

MR BEASLEY: We can certainly see, I think, page 1. We've got the heading.

MR YOUNG: Right. Yes. Right.

MR BEASLEY: Tahmoor South Coal Project IPC Public Hearing 15 Feb 2021 with your name.

MR YOUNG: That's the one. And I can't see those with me, but that's okay. If we can go to the second slide, then, that might be helpful. Just confirming you can see that, Commissioners?

MR BEASLEY: I'm pushing a lot of buttons, but they're not working. But I think actually someone else might be doing that.

MR YOUNG: I can certainly see the first.

MR BEASLEY: So I'll let you know when they come up.

MR YOUNG: I can see – there we go.

MR BEASLEY: It has come up now.

MR YOUNG: Thank you. I apologise for that delay. So, look, just thank you for the opportunity to present on behalf of the Department of Planning, Industry and Environment and to present some of the key findings of our whole-of-government assessment that we've been undertaking now for some time. I thought it'd be worthwhile just flagging our outlining the existing situation with the Tahmoor Coal Mine because, obviously, we're talking about the development application for an extension. And I think it's worth noting that the current Tahmoor Coal Mine has been operating since 1975, so, you know, quite a long time; firstly, bord and pillar and then more recently underground longwall mining.

It is located within an area that was declared as a mine substance district at about that time in 1975, and is operating within mining leases granted by the New South Wales Government as long ago as 1970, which is more than 50 years ago, and some more recent mining leases issued up until about 2010. It does operate under a number of consents that have been issued over that 30 or 40 year period issued by Wollondilly Shire Council and also the State Government at various times. It produces three million tonnes of coking coal, so that's steelmaking coal. About 25 per cent or a quarter of that coal is used for domestic steel production at BlueScope and the Whyalla steelworks in South Australia, with the remainder being exported via the Port Kembla Coal Terminal.

Importantly – and I think this is important for the context of the current expansion or extension – is that it employs almost 400 people, and I'm told that around 40 per cent of those employees come from the region. And I think the region really is defined as a local government area, so it's really the local area the 40 per cent of employees are residing in that local sort of Bargo LGA. The approved mining operations under those various consents are likely to be completed by 2022 and, clearly, this extension would extend the life by about 10 years, and we'll talk about that in more detail. I think, importantly, in the context of some other recent decisions in the southern coalfields, this particular application is located entirely outside, although in relatively close proximity, but entirely outside the special areas of the Sydney's drinking and Wollongong's drinking water catchment.

Next slide, please. As indicated, it is an area where there is a mine substance district already proclaimed and mining leases, and the proposed extension is entirely within those areas. So it's not proposing – it's proposing to be undertaken, I guess, in areas that have long been earmarked for underground coalmining by the New South Wales Government. The original development application proposed a couple of years ago now was for a 48 million tonne coalmine with nine longwall panels over about 13 years. But that application, as you would be aware, has been revised or amended on two occasions, and that has resulted in a significant reduction in the extent and scale of substance impacts, and also minimising biodiversity and noise impacts, and we'll go through some of those changes in a minute.

In addition to those changes proposed by the company, the department has recommended a further amendment, which is really a shortening of one of the longwalls to reduce impacts on a particular stream, Aboriginal cultural heritage sites, and the cliff line. Now, whilst those – or those amendments have been significant, they've decreased the overall coal to be extracted by about 31 per cent to 33 million tonnes, and they've shortened the life of the proposed mine now to around 10 years instead of 13 years. Now, obviously, that would reduce some of the benefits of the mine in terms of economic benefits, but it has a very significant environment benefit and a reduction of impacts, particularly on the number of houses undermined in Bargo by about 81 per cent.

Next slide, please. So just in going through some of the detailed amendments – and I think this is important to recognise that the company has made a number of changes in response to the issues raised by the community and, indeed, by the agencies and the department. In particular, they've removed two longwalls which were underneath elements of the Bargo township. They've removed longwall 109 as well to avoid impacts on Dogtrap Creek. They've reduced the width of the actual longwalls from 305 to 285 metres, and also the cutting height, the height of the coal that will be extracted within the coal seam to reduce the overall level of subsidence.

They're also minimised the size of the expansion of the reject emplacement area, and they're fundamentally going a little bit higher rather than a lot wider, and that removes about 43 hectares of clearing of native vegetation. They're also proposing to limit the operations on that reject emplacement area because it is elevated in the landscape and has the potential to create noise impacts, and they're proposing not to operate that reject emplacement area at night time. In addition, as I said, we've recommended that – or the department has recommended a 400 metre reduction in the length of 103B to minimise impacts, environmental impacts.

So next slide, please. So this is just illustrating – we won't dwell on this too much. But you can see from the left to the right the various changes that have been made to the mine plan. I think most significantly is in that latest amendment where you can see the longwalls over that yellow-shaded area within that topographic map. You can see now that the vast majority of Bargo would not now be directly undermined. And there's also some changes to the extent of the longwalls to the east, and also the

removal of a longwall to the northeast. But the key changes there, I guess I wanted to flag, is that significant reduction of directly undermining the township of Bargo.

Next slide, please. Look, I don't propose to go through this in a lot of detail, suffice it to say that this has been a whole-of-government assessment with consultation and advice from a broad range of government agencies, and also a number of experts engaged by the department to assist it in completing its whole-of-government assessment to present to the IPC for decision. Clearly, the EPA has been involved, Subsidence Advisory in regard to subsidence and compensation issues; Regional New South Wales, which is relevant for rehabilitation and also the utilisation of the resource itself; Water New South Wales being the caretaker of the adjacent special areas of the catchment for Sydney's drinking water; RFS; Fisheries; Heritage; Transport; Crown Lands; and Health.

In addition to that, we've engaged some particular experts, one looking at the mine design, which was one of the reasons that led to further amendments to the removal of the longwalls to reduce impacts and looking at the economic viability of alternative mine plans. Groundwater, which we'll talk about in a minute, is obviously a key issue for the assessment process, and we engaged Mr Hugh Middlemis to assist us with advice on those matters. We also engaged an independent organisation consultant to check the economic evaluation of the project, and also received advice from the IESC, which is the Commonwealth Independent Expert Scientific Committee.

And I would note that all that information, all the advice from the agencies, and all the expert advice is attached to our assessment report which is on our website and has been provided to the IPC to assist it. Next slide, please.

MR BEASLEY: Mr Young - - -

MR YOUNG: Sorry.

MR BEASLEY: - - - I wanted to just ask a couple of questions on the independent advice you've obtained - - -

MR YOUNG: Sure.

MR BEASLEY: - - - but in relation to both groundwater and mine design. But I'm happy to ask that now, or would it be more convenient to you if you're going to expand on those issues to deal with that when you get to that part of the presentation?

MR YOUNG: I think let's – if that's okay, Mr Beasley?

MR BEASLEY: Yes, I'm happy to do it that way.

MR YOUNG: Yes, yes.

MR BEASLEY: Yes.

MR YOUNG: Thank you. Thank you. This is the last slide I'll be talking on, and then I'll let Steve go into some of those issues, and that would be the right time to ask those detailed questions.

MR BEASLEY: Sure.

MR YOUNG: Just on – obviously, we in accordance with the EPA regulation, we exhibited the application and the EIS during the public exhibition, which was some time ago, and that was the original proposal. We received 83 community and interest group submissions. Look, the vast majority of those submissions – 72 – support it with very few objections. However, we do recognise that since that time, since the formal public exhibition and the further amendments to the application that have been made available on the department's website, we have received a relatively large number of representations from the community, and many of those, I would say, are from the local Bargo community or immediate surrounds.

And with those representations, there was certainly a far larger proportion – indeed, 84 per cent – that objected strongly to the proposed expansion. In terms of key issues raised by the community, I don't think that's any surprise. Obviously, subsidence impacts and impacts on homes, particularly around Bargo and also surrounding rural residential areas; groundwater in terms of particularly people who rely on groundwater for various agricultural and industrial activities; subsidence impacts on natural features such as watercourses and features in streams such as pools and Aboriginal heritage, which has been a concern with the existing Tahmoor North operations; and another matter that's been of concern with the existing Tahmoor North operations is noise impacts and the concern around continuation of those noise impacts; and also some additional noise impacts around new ventilation shafts that are proposed as part of the extension.

And so I'm proposing now to hand over to Steve O'Donoghue to go through each of those matters and our assessment findings in detail. Thank you, Steve.

MR O'DONOGHUE: Thank you, Mike. Thank you, Commissioners. I'd just like to start, I guess, with the – since a lot of the impacts are based on subsidence predictions, I just wanted to provide a little bit of background, I guess, to the robustness of the assessment stats that have been done, which sort of inform the impacts on both built and natural features. So the subsidence assessment was prepared by Mines Subsidence Engineering Consultants, who - - -

MR YOUNG: I think can we go to the next slides, please?

MR O'DONOGHUE: Yes.

MR YOUNG: That would be helpful. Thank you.

MR O'DONOGHUE: Just continuing on then, they've been – the subsidence assessments have been prepared by MSEC, or Mines Subsidence Engineering Consultants, who've had extensive experience in the southern coalfields, and it's based on – the predictions are based on two well-established subsidence models: the incremental profile method or IPM for conventional subsidence, and the ACARP valley closure prediction model for non-conventional, which is more about impacts on creeks through valley closure and upsidence on creeks and potential fracturing of creek beds. So there's a lot of data and information and calibration that's gone into the models over an extensive period of time to inform the predictions.

Just moving on to, I guess, one of the key impacts, and it's on built features, particularly houses in the Bargo area, as flagged by Mike earlier, which has led to the significant reduction in the impacts from longwall panels and with the removal of some longwall panels.

MR YOUNG: Can we just go back to the previous slide, please? Sorry, I think we skipped one. That's it. Thank you.

MR O'DONOGHUE: Yes. So I guess, first up, in terms of the subsidence study area, there's 1458 houses within the subsidence study area, with 143 houses located directly above the proposed longwall panels. Due to the amendments of the mine plan, the number of houses directly above the panels, as Mike has flagged, is reduced by about 81 per cent from 751 in the EIS to 571 in the first amendment report to the 143 in the second amendment report. So there's been a significant reduction, I guess, in the area within the Bargo township of where subsidence impacts are to occur. I guess when you compare this to other historical operations, you can compare it to Tahmoor North, there was 1259 houses directly above the panels, and below-seam operations about 928 houses above the panels.

MR BEASLEY: Mr O'Donoghue, is there any way of – would the mine be economically viable if it avoided subsidence to all of the houses, if it avoided subsidence even to that 143 houses likely to be impacted now under the current project?

MR O'DONOGHUE: Look, it wouldn't be because there's – I mean, apart from – currently, it's on the outskirts of Bargo. There's still section of the Bargo township in 106B. But there's still extensive rural residential across the whole area. So, you know, there's smaller lot development and bigger rural residential blocks and farming blocks through the whole area. So it's not – from an avoidance point of view, it wouldn't be possible to undertake the mine they've proposed to avoid impacts on, you know, the remaining 143 directly above the panels.

MR BEASLEY: All right. Thank you.

MR O'DONOGHUE: From an impact point of view - - -

MR BEASLEY: What about – sorry, I should – say, the ones that might require a complete rebuild, could they be avoided?

MR O'DONOGHUE: One of the – I can come into that. I guess one of the issues is the predictions about the rebuild is based on, I guess, experience in Tahmoor North, in particular. So there's no – you can't identify the actual residences that would be impacted.

MR BEASLEY: Right.

MR O'DONOGHUE: It's more of a predictive, probabilistic model.

MR BEASLEY: Yes.

MR O'DONOGHUE: So it's based on, you know, conventional and non-conventional subsidence impacts.

MR BEASLEY: Yes.

MR O'DONOGHUE: It's based on, you know, the location of the residences, but also affected by faults and subsurface geology as well. So in terms of predicting exactly what houses are impacted, the model can't do that.

MR BEASLEY: Yes.

MR O'DONOGHUE: It will be based more on, you know, as the mining progresses to identify that.

MR BEASLEY: Sure. Thank you.

MR O'DONOGHUE: So I guess in terms of the houses that are predicted to be impacted, the majority are predicted to have a nil to R zero impact category. I might just go – just in the repair categories, these have been developed by a subsidence advisory ranging from R zero, which is a very minor damage to R5 which is rebuild. So the scale – there might be some very minor repairs, up to extensive repairs, up to rebuild with R5 where rebuild is likely. So I guess in terms of the houses predicted to be impacted, the majority fall into that nil to R zero category; 108 into that minor category of some level of work required; 28 where there's service build and structural repairs required; and seven in that R5 category. So there's that – there's the 35 which have more extensive damage.

Probably the only other – one issue that has come up during the assessment is about the potential for future residential development and impacts on rezoning. There's a number of rezoning plans in the area with the department and Wollondilly Shire Council.

MR BEASLEY: Sorry to interrupt you again, Mr O'Donoghue.

MR O'DONOGHUE: Yes.

MR BEASLEY: But Professor Mackay, I think, is just interested – and I think I understood from your – please tell me if I'm wrong. But from what you're saying about the predictive modelling for subsidence in relation to impact on the 143 houses and, in particular, the seven that have to be rebuilt, from the modelling you can't actually identify which – whether – what seven might be impacted, and it could be more or less, of course, too, as I understand it. But you can't – you'll only know that as we go along with the mining process. You can't pinpoint a particular house and say – or a particular building and say, "That one is going to be one that needs to be rebuilt", or am I wrong about that?

MR O'DONOGHUE: Look, that's correct. It is a – you can't pinpoint the exact dwelling that it would be. It is based on – it's a probabilistic – you know, based on empirical data of what's happened in Tahmoor North and further. So there are – have been – you know, and not, I guess, the non-conventional - - -

MR BEASLEY: I think Professor Mackay also has informed me that the damage to properties from Tahmoor North was actually less than what was predicted; is that right?

MR O'DONOGHUE: Look, that's correct. I think it's just – we've got some figures here just to assist. Look, I might have to – look, I can provide more information - - -

MR BEASLEY: You can take that on notice if you want.

MR O'DONOGHUE: Yes. Yes. Look, so I was just talking about the future residential development. So I guess one thing we've looked at is really the sequence of coal mining versus, you know, the development in the shire. Wollondilly Shire Council has released its strategic planning statement Wollondilly 2040, which clearly focuses in developing the Wilson Growth Area ahead of Bargo, and there is opportunity here that for mining to be undertaken sequentially with residential development occurring after mining and subsidence index have stabilised.

Well, the advice from Subsidence Advisory New South Wales has been fairly clear that, you know, they have an approval role under their legislation in terms of for any development of subdivisions that are occurring that it would be difficult to engineer construction of houses in new subdivision areas without potentially having to rebuild all impacts based on the advice of Subsidence Advisory.

MR BEASLEY: Sure.

MR O'DONOGHUE: Look, I might just more on to the next slide. So just on the house repairs and compensation, the Coal Mine Subsidence Compensation Act, I guess, is the main legislative vehicle for assessment, management, repair and compensation of houses damaged by subsidence. This is a well-established process

and managed by Subsidence Advisory New South Wales. And there's a number of areas around the State where this process is taken, including Tahmoor North and the Bulli Seam area. I guess one of the key things in an advice from Subsidence Advisory is in addition to rebuild or extensive sort of work to be undertaken on houses, they've recommended that acquisition be offered to homeowners as an option rather than compensation.

And this is when the impacts of that R4, R5 category, the more extensive impacts, or if it's the R3 category where there's an extended period of time where impacts might occur across two longwalls, or where tilts greater than 10 millimetres per metre which causes in structural images at that sort of level of tilt. So I guess the assessment or the predictor modelling estimated there could be up to 22 homeowners that could be offered property acquisition through that process. I guess the other thing is to recognise that any construction that has occurred within the Bargo Subsidence District has needed to go through an approval process through Subsidence Advisory and they have guidelines for residential construction to minimise the impacts of subsidence effects. I might move on to the next slide. So I guess in terms of - - -

MR BEASLEY: Sorry, subsidence acquisition rights are in proposed condition C15 where, as you've said, if the damage is R4 or R5, tilt greater than 10 millimetres a metre, or even if it's category R3, if it will be impacted by more than two longwalls, I take it that timing provisions in relation to that just come from the Compensation Act itself, does it – do they?

MR O'DONOGHUE: No, not from the Act itself. That's more – that's in discussions with Subsidence Advisory and I guess concerns they've had from Tahmoor North when there's extended periods of time and someone – you know, because the repairs can only occur once the subsidence impacts have stabilised or the effects have stabilised.

MR BEASLEY: Yes.

MR O'DONOGHUE: So I guess there's the social impacts issue about how long people have to wait around till actually works are done.

MR BEASLEY: Yes.

MR O'DONOGHUE: So this was a recommendation to sort of manage that process.

MR BEASLEY: Yes.

MR YOUNG: Steve, I'm conscious that we're running out of time.

MR O'DONOGHUE: Yes.

MR YOUNG: Just wondering whether we could maybe finish on the subsidence and then quickly go through any other issues that we want to raise.

MR O'DONOGHUE: Look, I think so. Just on subsidence, just to wrap up this component, I guess there's as range of recommended conditions that the Commissioners would be aware of, which are including the built infrastructure performance measures about the remaining safe and serviceable, and being fully investigated and repaired at the cost of the applicant; extractions plans that include trigger action response planned components; built feature management plans incorporated in the extraction plans, so prepared in consultation with asset owners; and in conjunction with that there's the establishment of technical committees for key public infrastructure.

And one specifically put in the conditions is for the Bargo Waste Management Centre, which was following recommendations and discussions with Wollondilly Shire Council. But, certainly, the company has committed to developing technical committees for all key public infrastructure as well.

MR BEASLEY: Again, I take it from the mine plan it's difficult to avoid undermining the waste management centre, is it?

MR O'DONOGHUE: It is just because of the location of it - - -

MR BEASLEY: Yes.

MR O'DONOGHUE: - - - in the longwall mine. It's pretty much in the centre of 102B.

MR BEASLEY: Yes. So you'd have to stop short and leave a gap and then it'd be very difficult to manage it with avoiding subsidence to the waste management centre.

MR O'DONOGHUE: It would be if you cut short there, and it would put – I guess put the question of viability of it if it's a very short length of longwall as well.

MR BEASLEY: Yes. All right.

MR O'DONOGHUE: Okay. I might go to the next – look, I know we're running out of time. So I'll just quickly – I guess the other key issue that was in submissions, and I guess in terms of the size of the impacts, is really around the bores located in the subsidence area. I guess the key aquifer in the area is the Hawkesbury Sandstone and there's quite – there's hundreds of registered groundwater bores in the region. However, of that, 46 bores are predicted to experience a drawdown of greater than two metres, which is the middle impact or consideration of the aquifer interference policy. I guess one – we requested more information from the company about to explore that further about the risk of impact.

They came up with a classification process in looking at all the bores in terms of where they were located, the depth of the bores, and the available drawdown within the Hawkesbury Sandstone. Out of that, they predict that 10 of the bores have a high risk of requiring make-good provision where some works may be required to return water supply to the landowner. And that's supported, I guess, by experience at Tahmoor North where two bores have required make-good due to the impacts on water supply. The modellings predicted that there'd be 72 bores predicted to exceed the two metre AIP trigger.

MR BEASLEY: Yes.

MR O'DONOGHUE: Tahmoor Coal developed a make-good strategy which they supplied the department in responses to questions asked, and they're committed to make-good provisions and a bore census for those affected bores. There's also – if you read the report, there's also information about cumulative impacts, too, that I won't go into here. But there's certainly conditions that are managing the impacts on bores through census monitoring and make-good provisions. Next slide, thanks. I guess the other key impact from subsidence effects is on stream features, pools along the watercourses.

Again, there's 63 pools located above the longwalls and impacts from non-conventional subsidence, as outlined earlier, from valley closure upsidence. Around 15 are predicted to experience increased impacts, whether it be fracturing that could lead to water losses in the pool and reduction in standing water levels.

MR BEASLEY: Mr O'Donoghue, just because we're – I think we're going to – Professor Mackay is going to give you some extra time. But just because we're getting tight for time, can I just interrupt you there?

MR O'DONOGHUE: Yes.

MR BEASLEY: And, Mr Young, you should feel free to answer this as well and, please, don't take this as what I'm about to ask as a criticism because it's not. It's just an idea from reading the materials and there might be reasons why it's not a good idea. But I just want to propose this to you. Professor Mackay and Professor Fell have got before them a series of reports on groundwater modelling and groundwater issues and potential impacts in relation to groundwater and surface water. So they obviously have what's in the EIS from hydro-simulations and then we have – and then there's the independent expert scientific committee report, which in that report – we could go through it.

But I think you're probably generally familiar that it expresses either a lack of confidence or a low level of confidence in relation to some parts of the modelling and expresses a doubt that – with the view from the EIS that there won't be – there's likely to be minimal impacts on Thirlmere Lake, and I think it even mentions the special area. And then, of course, we have more recently the department engaged Hydrogeologic, Mr Middlemis who has provided a report where he says, "Well,

things have changed a bit and I think the model is fit for purpose. I think it's properly described as a class 2/3 model, and I think that – in my view, based on all of this, I think there's a low risk of groundwater impacts to the lakes from this project".

I'm just wondering whether there was any thought given to possibly getting the authors of the IESC report together with Mr Middlemis to reach a consensus of whether they now agree on certain things and why, and disagree on certain things and why. I'm sorry that's such a long question. I'm not feeling bad about that because there's no judge here telling me that it's impermissible because it's so long. But I hope you understand what I'm putting to you. It'd be nice to have sort of a – from all the experts in this groundwater field like a final short report saying, "Look, we've now agreed on points A, B and C, and the one area or two areas of disagreement we've got are this and that and for these reasons".

MR YOUNG: So I understand the question, Mr Beasley.

MR BEASLEY: Sure.

MR YOUNG: And I'll hand to Steve in a minute. But a couple of things to say there is those kind of issues are precisely why we engaged Mr Middlemis, who is a well-recognised expert in his field and was actually one of the key authors of the Australian Groundwater Modelling Guidelines.

MR BEASLEY: Yes.

MR YOUNG: Secondly, the IESC only provides advice earlier on in the process and is not – typically doesn't engage further in the process or involved in expert debate. It has provided advice and that advice needs to be considered in the process. So there's normally not an opportunity to 'hot-tub' experts, as you might do in the Land Environment Court.

MR BEASLEY: Yes.

MR YOUNG: That opportunity is not there. I'll let Steve - - -

MR BEASLEY: Can I ask you – and sorry to interrupt.

MR YOUNG: Yes.

MR BEASLEY: But has something of significance changed in relation to the project from the time the IESC did their report to the time that Mr Middlemis at Hydrogeologic is doing his advice to you?

MR YOUNG: Steve, have you got any response to that?

MR O'DONOGHUE: Look, certainly in the – you know, for the amended project and the – more work was done by the company to address IESC concerns, and that

was certainly something that Mr Middlemis looked at and provided us advice on in terms of whether the issues raised by the IESC had been addressed. I guess one of them, for example, is the uncertainty analysis which is – that comes up quite regularly in groundwater impact assessments. And it's certainly an area that Mr Middlemis is fully aware of, having, you know, written the guidance for the IESC in terms of undertaking uncertainty analysis.

So that, as an example, that's an area where he's looked at. He was satisfied, I guess, with the work done by the company and their experts in addressing, you know, some of that uncertainty in the predictions. And particularly, I guess, given that there is a – it's not a greenfield site. There's a lot of data around, you know, to inform the modelling, whereas I guess uncertainty analysis, for example, you know, for a greenfield site where there's less stress on the system is certainly warranted. But the advice from Mr Middlemis is that, you know, I guess the key issues raised by IESC have been addressed in the subsequent information.

MR YOUNG: And, Steve, was there any feedback from DPIE Water on some of these matters?

MR O'DONOGHUE: Look, certainly, in terms of the interrelationship between surface and groundwater, there's been a lot of studies on Thirlmere Lakes. I guess one, you know, which has informed the assessment and will continue to inform the assessment – there's a lot of monitoring and studies going on of which OEH is heavily involved, in particular with BCS. Certainly, that will inform any ongoing modelling as well for the project. But, certainly, we've considered the advice from DPIE Water and BCS in terms of the impacts on Thirlmere Lakes through that process.

MR YOUNG: And the only thing I would add, Mr Beasley, is, clearly, the experience of Tahmoor North is that even the modelling undertaken for that project predicted more significant impacts than actually occurred in practice in terms of groundwater drawdown. So it is – it's a fairly known quantity and I guess we were satisfied with the advice from DPIE Water and Mr Middlemis that the issues raised by the IESC and the additional information provided by the company was sufficient to address those matters. But, of course, if the IPC considers that it would like further clarification or advice, we'd be happy to provide that.

PROF MACKAY: Thank you, Mr Young, Mr O'Donoghue. It's Richard Mackay here just intervening and we will have another look at that and thank you for that procedural suggestion. I'm very conscious of our timing today, but there are still a couple of matters that we are very keen to hear from the department about. So could I suggest that we try to limit the department's presentation engagement to another five minutes, and if I may perhaps be led by some questions from Mr Beasley, and perhaps we could put the department's presentation on the Commission's website.

MR YOUNG: Absolutely. That's perfectly fine. I think possibly if we skip to, you know, the second last slide, possibly, I think that might be helpful and we can skip straight - - -

MR BEASLEY: I think both Professor Mackay and Professor Fell are interested in the issue of this mine being a gassy mine and what are the options and possibilities for reducing the greenhouse gas emissions.

MR YOUNG: Well, let's talk about that slide that's on the screen now in regard to air quality and greenhouse gases. Steve, did you want to quickly cover that?

MR O'DONOGHUE: Yes. Certainly, I guess through the assessment process, you'll note that we did ask the question of the company to update the greenhouse gas scope 1, 2 assessment based on more recent data. I think the original assessment was based on 2013 information that was reported to the Commonwealth Government through the NGER scheme. It was updated based on more recent data. I guess the key component here is the capture of, you know, pre-mining gas at the face of the longwall and post-mining in the Growth Area is where there's potential for flaring and use of methane.

There's already – at the site there's already a facility that was approved back in the 80s, you know, for – which does capture methane from those sources, and there is current flaring and, you know, use of methane for power generation through a third party provider. So there is – the – I guess the existing operation is set up to try and maximise the flaring and methane gas, and I – we've included conditions to ensure that, you know, the greenhouse gas is captured and beneficially used as far as possible or flared. So we've sort of tried to address that through the conditions and through air quality and the greenhouse gas management plan requirements, in particular.

MR BEASLEY: What are the prospects – Professor Fell knows a hell of a lot more about this than I do, though. But there are some challenges, aren't there, in terms of using methane from this line for – this mine for either power generation or even flaring. Can you just expand on those?

MR YOUNG: So maybe I'll comment on that.

MR BEASLEY: Sure.

MR YOUNG: It's Mike Young here. Look, we fully recognise that as a resource this is a relatively gassy mine. Really, the gas comes out – you know, there's three things you can do with it. One is that you need to sort of drain it and vent it, you know, for OH&S type reasons and capturing and flaring or using that for power generation, I'm not aware there's any technology that allows that to occur. However, there are – there is the ability, you know, as mining progresses to capture some of the methane and to potentially use that for flaring or gas or power generation.

Clearly, the company has been attempting to do that with a third party provider now for some years, and we'd certainly seek to, you know, encourage them or to put in conditions to demonstrate that they are using their best endeavours to continue that. However, there are issues with commercial and/or sufficient quantities and concentrations of gas that need to be available, particularly to generate power. And so - - -

MR BEASLEY: And having enough methane? Is that - - -

MR YOUNG: Having enough methane and at certain concentrations, and also the certainty in terms of the delivery of that, you know, to that site to enable consistent power to be generated. Certainly, you know, where there is methane captured and it's potentially not able to be used for power generation, one could flare that and, as Mr Fell would – Professor would be aware, that would turn the emissions from methane into CO2 and, obviously, that has less of a carbon intense footprint.

PROF MACKAY: Thanks.

MR YOUNG: So, look, I think we're out of time by the sounds of it.

MR BEASLEY: Professor Mackay just has a question to ask on biodiversity.

PROF MACKAY: If I may, Mr Young and Mr O'Donoghue, and I'm very comfortable if the department would like to take this question on notice. We're conscious of the proposed clearing of 10 hectares of a critically endangered ecological community, the broad and narrow-leafed ironbark grey gum community. And the assessment report is clear that this is a small proportion of the local community of the order of one per cent. But it would be good to hear from you, perhaps from the Biodiversity Conversation Science Division colleagues, about the incremental effect of that change. Are we talking about a significant corridor? Are we talking about an impact on viability of the corpus as, clearly, that is one of the ecological impacts of this application to which the Commission needs to turn its mind.

MR YOUNG: Thank you, Mr Chair. I think, broadly, we'll take that on notice and confer with our colleagues from the Biodiversity Conservation Science Division, and happy to get formal or informal questions, you know, to us so that we can target that advice for you in the most helpful way. The only thing is I would say are two things. One is that, clearly, we've sought to minimise the impacts on that community and there has been significant changes to the layout, particularly of the reject emplacement area, to minimise impacts.

And, secondly, I guess, if the project is approved, we've recommended that there's a clear obligation to offset those impacts in accordance with the biodiversity offset scheme, which obviously has – takes into account that critically endangered aspect and would involve significant multipliers in terms of the offset credits and

obligations. But, look, I think it's best that we get the advice from our biodiversity colleagues and come back to the Commissioner in writing, if that's okay.

PROF MACKAY: Well, thank you, and thank you to both of you for your presentation and answers. I'm conscious we have run over time, but I think in the context of the overall application and the public interest it was appropriate that we did so. So thank you and over to Mr Beasley.

MR BEASLEY: Yes, thank you both and we'll see you on Wednesday.

MR YOUNG: Yes, thank you.

MR O'DONOGHUE: Thank you.

MR BEASLEY: I think the next speaker we have is Alexandra Stengl, who is from the Wollondilly Shire Council. Mr Stengl, are you there?

MS STENGL: I am. Thank you.

MR BEASLEY: Please go ahead.

MS STENGL: Am I right to start?

MR BEASLEY: Yes, you may. We can hear you.

MS STENGL: Okay. Thank you. Okay. As you know, I'm Alex Stengl and I am the Manager of Environmental Outcomes at Wollondilly Shire Council, and I've been asked to speak as a representative of council today. I'm also joined off to my left and not on screen by my colleague David Henry, who is our expert on mining matters. So if there are any questions for us, if it's okay, he may participate in some answers. So I guess, firstly, look, council has been actively providing comments and submissions regarding the Tahmoor South proposal, including the second project amendment report back in August 2020.

We submitted two submissions. One is a whole-council perspective, and one specifically relating to the Bargo Waste Management Centre, as we appreciate that that's, I guess, an operational component of our council services. The broad view of council is basically that council recognises the direct and indirect employment and associated social benefits of the project and we obviously support those. Council recognises the modification of the project, which has obviously removed two of the longwall panels and seen a reduction of up to 80 per cent of subsidence, and we welcome that. We also retain residual concerns regarding the assessment and the management of potential impacts to water resources and the risk of impact regarding the EPA licence to the Bargo Waste Management Centre.

Council asked that the residual concerns are considered as part of the investigation of the project application by the IPC. We also would like to highlight and note that

SIMEC has made considerable effort to contact and meet with council over the concerns put forward in an attempt to mitigate these impacts and, additionally, council provided comments to DPIE on the proposed conditions for the project application in November 2020. What I'll do now is bring up two current resolutions that council has resolved on the position of the mine. We will note that, due to the timing of this hearing, that council was unable to provide an updated formal position.

The two relevant resolutions are the following. The most contemporary one, which was of 18 March 2020, which council resolved to write to the New South Wales Department of Planning and Environment requesting that the current application be reconsidered due to identified significant shortcomings, which are detailed in the submission and those were around water resources, subsidence, and biodiversity matters. We also have an older resolution, which is from 15 February 2016, and it was resolved that council take a proactive role in advocating for the protection of the natural environment from impacts of mining under Redbank Creek.

So that was in relation to the Tahmoor North area, which we appreciate that this proposal isn't about. However, the community does have concerns regarding the impacts of mining to the significant creeks and watercourses in our area. So I'll unpack that a little further. In regards to economic and social benefits of the application, the council – we appreciate that the mine already employs, and will continue to employ, up to 40 per cent of its workforce from the local area. We understand that workers travelling to and from the mine will stop and shop and get fuel and services from the surrounding villages of Tahmoor and Bargo.

We also note that the infrastructure is well established at this mine, and that the coal is removed by rail, which is a benefit in the sense that there is less impacts with trucks on our roads from coal haulage. So I guess that's one thing that we need to highlight. The residual concerns, though, regarding the project application, okay, and the following – I will now go through some of the concerns of the project application based on council's previous submissions. So subsidence impacts to residential dwellings. We understand that there will be social and economic implications for the remaining 143 potentially affected dwellings, as well as additional unspecified dwelling in close proximity to the longwalls.

We've received feedback from local residents expressing their issues associated with the adequacy of the new process in reviewing and approving mine subsidence claims. One received issue with the new process is the absence of the independent advisory group. So we wanted to highlight that to the panel. Council is aware of representations made by residents to DPIE that focused on this matter subsequent to the closure of the exhibition period. So I guess from our point of view we'd like to see, and that council requests, the ability for residents to make claims is clear, and that there is ongoing support for those whose houses are undermined.

As a region that has faced horrendous bushfires, floods and COVID, the potential stress of subsidence on these people's properties is a tough consequence for people to

accept, and we ask that the IPC understand that in context. We also suggest that there's a robust engagement program that needs to be created including the subsidence advisory. Assessment and management of potential impacts of water resources, surface and groundwater. Staff agree in principle with the conclusion of the second amendment's assessment that the variety of recognised impacts to surface waters and groundwaters have either been maintained or reduced as a result of the removal of the two longwalls and other initiatives, including enhanced wastewater treatment.

Positive aspects of the DPIE assessment report include recommended reduction in longwall length of 103B to reduce the extent of predicted subsidence impacts to DogtrapCreek, and we really welcome this because there's unique cultural heritage, as well as water quality implications at this location. A further positive aspect is the recommendation for an updated groundwater strategy following the conclusion of the Thirlmere Lake's research program.

Further, the modified application is viewed as not responding to a range of issues raised in previous council submissions, and this includes the following: that all potentially affected watercourses be subjected to a detailed scientific assessment to enable the design of longwalls to minimise impacts associated with subsidence to watercourses, including shallow groundwater aquifers; that all watercourses impacted by the mine-induced subsidence be rehabilitated to former ecological health that existed prior to the commencement of any mining operations; that trigger action response plans should have specific base performance measures that will promptly and adequately identify any impacts to the ecological health of waterways. We also would like to note in the recent determination of the Dendrobium project that we recognise that the geology is different; however, we do believe that the impacts of subsidence should also be, I guess, reviewed and considered in a similar fashion, although we do also accept that Tahmoor is not in a drinking water catchment, so there are some differences there.

The operation of Bargo Waste Management Centre, I will speak of this separately. So council's separate submission on the second amendment assessment report raised concerns over the implications of directly undermining the Bargo Waste Management Centre, including satisfying the EPA licence requirements and potential contamination of groundwater from leachate associated with the centre.

MR BEASLEY: Can I just ask you, Ms Stengl, it's a general waste management facility, is it? Is that what it's licensed as?

MS STENGL: Yes. It's non-putrescible.

MR BEASLEY: Yes.

MS STENGL: So – yes. It's a general waste facility.

MR BEASLEY: Sorry to interrupt you. Go on.

MS STENGL: No. That's okay. No. That's fine. Thank you for clarifying. I should have said that.

MR BEASLEY: No. It's all right.

MS STENGL: Council and Tahmoor Mine have agreed to establish a technical committee to assess, mitigate and manage potential impacts on Bargo Waste Management Centre. The inclusion of requirements for the establishment and roles of this committee in the draft conditions is welcomed in principle. However, we still have one main concern which we've expressed previously, and that is, I guess, the risk liability of an actual pollution incident. And we appreciate that we can engineer and work together, and we're happy to do so. However, there still is that risk of when the actual pollution incident occurs or should it occur, council will be the licence or post-operational licence holder and, therefore, liable for any, I guess, compliance action from the EPA. Council would appreciate - - -

MR BEASLEY: Can I just ask you another question then on that - - -

MS STENGL: Yes. Yes.

MR BEASLEY: - - - in relation to the – obviously the Commissioners have got to make a fundamental decision about whether this project is approved or not.

MS STENGL: Yes.

MR BEASLEY: If I could just ask you because it's only relevant to talk about conditions if there was an approval – if it was approved, you've just mentioned something about risk and damage and who has to pay for it in relation to any damage from subsidence from the waste management centre. Is the council otherwise satisfied with the subsidence impact performance measures in the proposed conditions for the waste management - - -

MS STENGL: Yes.

MR BEASLEY: - - - centre? Yes. Okay.

MS STENGL: Yes. Look - - -

MR BEASLEY: Thank you.

MS STENGL: Yes. SIMEC has – yes – met with us and we've formed this committee.

MR BEASLEY: Thank you.

MS STENGL: So that's – yes. We're hoping that that will resolve the issue.

MR BEASLEY: Thanks.

MS STENGL: However, there still is that issue of leachate pollution under the - - -

MR BEASLEY: Yes.

MS STENGL: - - - POEO Act, we're still responsible as the polluting agency, so that's our concern that we would be held accountable - - -

MR BEASLEY: Are you insured - - -

MS STENGL: - - - .....

MR BEASLEY: Is the council insured for that?

MS STENGL: It is. Yes. But I guess it's one of those things that we can - - -

MR BEASLEY: Sure.

MS STENGL: We're concerned will fall into, you know – you know, disrepute. Sorry.

MR BEASLEY: Sure.

MS STENGL: And an issue for us as a council is the – yes – loss of face value, I guess.

PROF MACKAY: Ms Stengl, it's Richard Mackay speaking.

MS STENGL: Yes.

PROF MACKAY: Can I just clarify. If the Commission were of a mind to approve, is there anything further that council would suggest in relation to the current draft conditions and the waste management facility, having regard to your comments about risk?

MS STENGL: No. We've provided our comment back to DPIE regarding that particular risk, so no, that should be fine.

PROF MACKAY: Thank you. And could I also ask while I'm interjecting if you could draw things fairly quickly to a conclusion as we're out of time.

MS STENGL: Yes. Absolutely. No. Look, I think that has come to an end. We can submit what we've spoken about today, and we previously have made representations. So we appreciate your time today. Thank you so much.

PROF MACKAY: Thank you.

MS STENGL: Thanks.

MR BEASLEY: I think the next speaker we have is Peter Vale, who's the mine manager for Tahmoor Coal. Mr Vale, can you hear me?

MR P. VALE: Yes, I can. Good morning.

MR BEASLEY: We can hear you.

MR VALE: Can you hear me okay?

MR BEASLEY: So please go ahead.

MR VALE: Thank you. I would like to begin by acknowledging the Tharawal people, the traditional custodians of this land from which I meet with you today, and pay my respects to their elders past, present and emerging. I extend that respect to Aboriginal and Torres Strait Islander peoples here today. Thank you for your time, Commissioners. We're here today to prevent an overview of our Tahmoor South Project and over the next three days to hear from the community and other stakeholders regarding the project. My name is Peter Vale. I'm the head of coalmines at SIMEC, a member of the GFG Alliance. In my capacity as head of coalmines, I oversee the Tahmoor operations.

I began my career at Tahmoor Colliery as a subsidence surveyor more than 30 years ago and have since held a range of roles within the business, including stints underground, then as the mine's production manager and more recently in the role of general manager. In that time, I've had the privilege of being part of the Tahmoor Coal family. Over the years, we've had local families of up to three generations working together in the mine, fathers, daughters, brothers, sisters, cousins and lifelong friends. We're also proud to be members of our local community and proud of the contribution we make as an employer of local people, an economic contributor to local businesses and a supporter both financially and in kind of community groups and initiatives.

During my time at Tahmoor working across the range of roles I've had, I've also been involved in the development of processes, techniques and the equipment that we use. Importantly, I've been witness to the learnings we've made which have been applied to our operations in Tahmoor North and informed our approach to Tahmoor South, and that approach has been a balanced one. We've undertaken extensive community consultation and have listened to those who have concerns. Our mine plan has changed due to what we've heard.

In its assessment report, the Department of Planning, Industry and Environment stated that the mine plan before the Commission today, which includes the significant revisions, achieves a reasonable between maximising the recovery of a coal resource of state significance and minimising the potential environment and amenity impacts. The consultation we undertook was fundamental to achieving that balance.

In short, it achieves a viable project which keeps people employed and contributes significantly to the local economy whilst also minimising the potential impacts to properties and the environment. We understand the community has evolved, which is why we've responded to the feedback we have received and made significant changes during the evolution of our project to achieve a balanced outcome.

Before I speak more about the project itself, our owner and executive chairman of the GFG Alliance, Sanjeev Gupta, has asked to provide a statement to today's hearing as he is currently overseas. We've provided a video. If you could please play that now.

VIDEO SHOWN

MR BEASLEY: Mr Vine, we've got you back. You proceed now. Sorry. Mr Vale.

MR VALE: Thank you very much. That's okay. Thank you. If I may, I will talk through a presentation that I will share, if that's okay. If you can please confirm that you can see that presentation.

MR BEASLEY: We can. Yes. The title page has come up.

MR VALE: All right. Thank you very much. As you've just heard from Sanjeev in the video, the Tahmoor South Project is a vital step in the SIMEC and GFG transition to carbon neutrality by 2030. It does this by bridging the gap by keeping staff employed and supporting Australian manufacturing while we explore new technologies in steelmaking and continuing to supply high quality coking coal during this period. The project before the IPC in the public today is part of a carefully considered long-term strategy within SIMEC GFG and the result of many years of robust technical investigations and consultation with government agencies and the community. The IPC public hearing process is an important step in the decision-making process for state significant developments in New South Wales. We acknowledge all the work that has been done to date on the project and the feedback received from the community which has contributed to the evolution of the project.

The Tahmoor South Project is not a greenfield project. It's a brownfield extension of mining within existing leases using existing infrastructure. Tahmoor Coal began underground mining in the Wollondilly Shire more than 40 years ago in the 1970s, and we commenced worked on the Tahmoor South Project around 10 years ago. The project will use the same mining methods with the same type of mining equipment in the same coal seam. The project will enable the continued operation of the existing workforce of around 400 people for a further 10 years, with the resources within the existing approved mining area being exhausted in around 18 months. This will have significant flow-on employment benefits to local businesses within the Wollondilly Shire and neighbouring regions. This project will also create an additional 50 to 175 positions for the installation of new infrastructure during the construction phase. The

project is forecast to deliver a net benefit to New South Wales of $664.9 million and $137.5 million to the local Wollondilly region.

The work on the project commenced in around 2011. Throughout the period since commencement of the project, we've been mindful that the work we do can have impacts. We've worked closely with the government, government agencies and other stakeholders to understand their concerns. As a result, we've made a number of changes to our project, including significant alterations to the mine plan in acknowledgement of the concerns raised during the consultation process. I would like to take a bit of time now to step you through some of these improvements.

Amendments to the mine plan were made prior to the EIS submission, and they included no longwall mining in the metropolitan special area, which is a part of the Sydney water catchment area, through the shortening of three longwall blocks and avoiding mining beneath Aboriginal heritage sites of high significance, such as sandstone shelters, by a further shortening of longwall blocks. Since submission of the EIS, there have been two amendments to the project which involve further changes to the mine design and layout. The first amendment included changes in longwall configuration to two series of shorter panels, reduction in the maximum extraction height from 2.85 metres to 2.6 metres, and a reduction in the longwall width from a maximum of 305 metres to 283 metres to reduce subsidence impacts. We removed aa longwall from the plan and we reduced impact of threatened species and communities in the area around the refuse emplacement area through a 74 per cent reduction in the footprint extension.

Even further changes were then made in the second amendment, which included the complete removal of two full longwall blocks directly below the township of Bargo to dramatically reduce subsidence effects, completely avoiding clearing of threatened species and communities in the area around the refuse emplacement area, and reductions in the impacts to identified threatened species and communities in the area of the ventilation shaft and transmission lines by modifying the layout.

I will illustrate the key amendments to the mine plan using the images on the next slide. So on the left-hand side, the image illustrates the mine plan from the original EIS submission. This plan includes the shortening of the three longwall blocks to completely remove longwall mining from the metropolitan special area in the bottom right and an avoidance of mining beneath highly significant Aboriginal heritage sites in the area being circled at the moment. You can see the change in longwall configuration to two series of shorter panels and the removal of one longwall in the middle image. This is from the first amendment report. It's a little bit more difficult to see on this image, but the width of the longwalls were also reduced from a maximum of 305 metres to 283 metres. The image on the right illustrates the removal of the two longwall blocks directly below the township of Bargo, which were removed to dramatically reduce subsidence effects.

This is the final plan for consideration by the IPC. We consider it provides the best balance of all factors environmental, social and economic. This image illustrates the

changes to the refuse emplacement area footprint from the original EIS submission to the final plan submitted for consideration by the IPC. The brown shaded area illustrates the refuse emplacement area footprint from the original EIS submission, which required 43 hectares of clearing. There was a 74 per cent reduction in the footprint extension in the first amendment report, significantly reducing the impact of threatened species and communities. The final plan that was submitted for assessment by the IPC completely avoids any extension to the current approved footprint. This is illustrated by the black dashed line. This removes any impact to the critically endangered ecological communities at the refuse emplacement area.

I will now go on to provide some regional context behind our project. As I mentioned earlier, Tahmoor Coal began underground mining in the Wollondilly Shire more than 40 years ago in the 1970s, and we're one of the largest employers in the Wollondilly Shire. The Bargo area was declared a mine subsidence district in 1975. More than 80 per cent of properties in the district have been built since that time, with the requirements to build to mine subsidence standards, which enables properties to be more flexible and resilient to minimise the effects of mining-related subsidence. Wollondilly Shire Council's local strategic planning statement recognises that Bargo is unsuitable for expansion due to the need to protect state significant resources. The planning statement instead focuses on the Wilton Growth Area as a higher priority growth area for the next 20 to 30 years.

Mining associated with the Tahmoor South project extends the life of the mine for 10 years and is forecast to conclude by 2032. Over the last 40 years, we've gained extensive experience in managing impacts to the built and natural environment in which we operate. During that time, we've mined beneath more than 2000 houses, with more than 90 per cent of these experiencing nil to minor effects on similar subsidence for that predicted for Tahmoor South. We've also mined beneath businesses, rail infrastructure, such as bridges and trackwork, schools, petrol stations, churches, heritage structures, dams, swimming pools, as well as an actual environment, such as creeks and waterways.

We've developed innovative techniques to mitigate and manage the potential effects of subsidence on many of these items, which I will take you through some examples of this in future slides. As a result, as you drive through the township of Tahmoor today, the effects of our operation are imperceptible to the naked eye. Throughout this period, Tahmoor has remained a progressive, thriving community where families and businesses have been able to grow and prosper.

Tahmoor Colliery itself has a dedicated environment and community team with significant experience dealing with mine subsidence and the agencies managing subsidence. The team conducts extensive community engagement prior to mining, which includes community information sessions, doorknocks with residents, letters, newsletters and face-to-face meetings. Resident information packs are regularly distributed to all residents in the mining area to explain the process of mining before, during and after. The images that you can see on the slide today are of operating

businesses that we've mined beneath in Tahmoor North, with the buildings and businesses being managed to remain safe and serviceable at all times.

I will now step you through the process relating to potential subsidence impacts to houses. Prior to mining occurring, subsidence predictions are determined by a qualified subsidence engineer. A free pre-mining inspection is available and offered to property owners. This is something we encourage all homeowners in the subsidence study area to do. Substantial surveying of the land is undertaken to understand how it responds during mining, and if there are impacts, a claim is lodged with the independent government agency, Subsidence Advisory New South Wales, who manage the process to legislated timeframes.

The legislation regarding subsidence compensation claims changed in 2018 with a new Coal Mine Subsidence Compensation Act which was enacted in 2017. There were significant changes made to make the process fairer, faster and more community responsive. The process starts with Subsidence Advisory assigning a case manager to each claim to support property owners and ensure they're treated fairly. The case manager oversees the claims management process, coordinates the assessment of damage and facilitates mine operator involvement at key points of the claims process where damage is determined to be the result of an active mining operation.

Claims are independently assessed by a panel of expert assessors, and mine operators are required to compensate property owners accordingly. Mine operators are required to comply with guidelines to ensure that claimants are fairly treated and claims are processed within strict timeframes. There are new dispute resolution pathways to provide claimants with access to an independent determination without having to resort to costly litigation. Both Subsidence Advisory and underground coalmine operators are required to report against key performance indicators to ensure claimants are treated fairly, including minimal response timeframes. The vast majority of claims for Tahmoor North were wholly managed under the previous legislation.

The new system provides a much more improved process, with strictly enforced timeframes to manage claims, and because of this, it's expected that the timeframe for processing claims will be substantially reduced under the new system. In its assessment report, the Department of Planning, Industry and Environment states it's satisfied this Subsidence Advisory New South Wales process is a well-established mechanism supported by legislation which is effective in maintaining and restoring structures to a condition equal to or better than their pre-mining state at no financial cost to owners.

Tahmoor Colliery has been mining beneath the Main Southern Railway between Sydney and Melbourne since 2007. To date, nine longwalls have passed directly beneath the Main Southern Railway equating to more than 4.6 kilometres of track. The Main Southern Railway is dual track and has trains travelling every 20 minutes with a track speed of up to 80 kilometres an hour. Tahmoor Colliery prepares

subsidence management plans for every longwall to manage and maintain the track during subsidence.

To obtain approval to mine beneath rail infrastructure, Tahmoor Colliery has pioneered the development and use of track expansion switches that are installed approximately every 300 metres on both tracks. These expansion switches are like interlocking fingers that move in and out to reduce stress on the track where subsidence movements occur. The track is then electronically monitored in real time for temperature, stress and displacement of the switches. The system is alarmed should any predefined trigger be exceeded. Tahmoor Colliery won an award from Engineers Australia for the pioneering work on managing rail during longwall mining. The Main Southern Railway has remained safe and serviceable at all times during mining.

We do recognise that mining beneath creeks can result in shallow fracturing of the creek bed, causing surface flow diversion primarily via pools. We do acknowledge that there have been impacts to Redbank and Myrtle creeks, resulting in shallow cracking of the creek beds. None of this water is lost, though, as there is no surface to seam connectivity and, therefore, no net loss of water. All this water travels below the surface of the creek where cracks are evident and resurfaces downstream. Regardless of this, a successful remediation process for Redbank and Myrtle creeks has been developed in consultation with and approved by the Resources Regulator.

As illustrated in the before and after photos on the right side of the slide, remediation of pool 23 at Myrtle Creek in Tahmoor North has resulted in the pool continuously holding water since completion of remediation in February 2020, which is illustrated in the graph. Additionally, the aquatic ecology of that pool has returned to be comparable to unaffected pools in the area. Similar remediation is underway at Redbank Creek, with similar results starting to become evident. Should there be any impacts on creeks that are mined beneath in Tahmoor South, this proven practice will be implemented to return them to their natural state as quickly as reasonably practicable.

With regards to Thirlmere Lakes, the water research laboratory at the University of New South Wales has undertaken significant research into water levels at the lakes. Its overall finding was that the water levels of the lakes are primarily affected by changes in the natural climate conditions. Another of its findings was that current evidence does not show that the lake water levels are influenced by changes in the deep groundwater table or nearby longwall mines. The Tahmoor South Project is significantly further from Thirlmere Lakes than the Tahmoor North mine, with the closest point being 3.5 kilometres and the mine progressing even further away from the lakes.

Tahmoor currently operates to an existing environment protection licence with specific licence limits. A new reverse osmosis water treatment plant will be installed to further treat water that is discharged offsite to achieve ANZECC guidelines. Significant noise mitigation measures will be implemented as part of the project in

recognition of residential encroachment that has occurred since the mine began 40 years ago. These measures include cladding the Coal Handling and Preparation Plant and limiting operations at night on the refuse emplacement area. In addition, Tahmoor is committed to actively capture as much methane as practicable, which will be used to either generate power on-site or flare to reduce our scope 1 greenhouse emissions.

MR BEASLEY: Can I just ask you a question there, Mr Vale, about the - - -

MR VALE: Tahmoor is extremely proud to - - -

MR BEASLEY: Mr Vale, can you hear me? Mr Vale, can you hear me?

MR VALE: I can. Sure.

MR BEASLEY: Right. I just wanted to ask you a question about the methane. You probably heard some questions asked if you were – I'm not sure whether you were listening to Mr O'Donoghue and Mr Young, but Mr Young talked about the potential for flaring methane or using it for electricity. What should the Commissioners understand that that potential is? How real is that potential for flaring methane or using the methane from the mine if it goes ahead for electricity? Is it a high probability, a low probability? What can you tell the Commissioners about it?

MR VALE: Well, it's more than a probability. It's a current reality. We currently use methane that we capture from the mine workings to produce electricity with a plant on-site. What we can't use to generate electricity we flare. We have – if the project goes ahead, we have thoughts of expanding on what we currently already do in that area so that we can, if possible, use more gas, generate more electricity and continue to flare the residual to reduce our impacts.

MR BEASLEY: All right. Thank you. I don't know if Professor Fell wants to ask anything further about that.

PROF FELL: No. I'm happy about that comment.

MR BEASLEY: Thank you. Thank you. Sorry. I interrupted.

MR VALE: No. No problem. I will just continue on. Look, we are very proud to have been part of this shire for over 40 years. During that time, we've developed longstanding partnerships with local businesses and community groups. We're one of the largest employers, with 45 per cent of our employees living locally. Our staff are part of the community. We're strong supporters of local initiatives both financially and in kind. I will just go through a few examples of that. We support the Australian Wildlife Sanctuary, and we recently purchased an educational van to ensure their valuable work is able to reach those that can't visit them.

During a plant outage in 2018, we made sure our workers, both employees and contractors, remained employed during the extended period the mine was inaccessible while also offering the skills and time of our workers to the community. Our workers participated on a daily basis in various community projects free of charge to the groups, including rejuvenation of the Thirlmere playground, assistance with a variety of local farmers, repainting of the Bargo Sportsground fence, building a refrigeration room for Our Community Pantry so they could store more food, maintenance and clean up at the Thirlmere Railway Museum and refurbishment of the picnic areas at Thirlmere Lakes.

And the bushfires went through our community in late 2019. As you heard, Sanjeev Gupta pledged $250,000 of a personal donation to the mayor's bushfire relief fund, and our employees put their hands in their pockets to donate over $30,000. Funds were given to the Bargo Rural Fire Service to assist in building a new shed which was put to the test in the recent fires. Like everyone in our community, we were deeply saddened by the passing of two firefighters when fighting a Green Wattle Creek fire and donated $25,000 to the Buxton Rural Fire Service Memorial at Telopea Park.

We support two buses per day in the summer months to transport people from the Wollondilly Shire to coastal beaches for free. When we heard that Our Local Community Pantry had no longer – sorry – had no location to deliver its hampers from, we offered our car park and volunteers so that hampers could be picked up safely with ease by community members on a weekly basis. We heard that the Miners Memorial at Thirlmere was in need of repair, so we were there with our apprentices to rebuild it, and it can now be used for community events, such as Christmas carols.

We've long time been a partner of the Wollondilly Pony Club, riding for the disabled, and we partner with the local council on the All Abilities Program adjacent to the Tahmoor Sportsground, and most recently again partnered with the council to upgrade the local BMX track. We recognise the importance that the local schools play in the community, and we support them in a number of different ways, such as provision of computer equipment, supporting end of year awards, educational programs and our apprentices even assisting with cooking barbeques at their fetes. We consider ourselves to be a huge part of this community, and we want to continue that for years to come.

So in closing, the Tahmoor South Project design for which approval is sought represents the outcome of amendments made over a period of more than eight years on the basis of considerable community and government agency feedback and robust technical studies. If approved, Tahmoor South will enable continuation of a brownfield underground mine and ongoing employment of a workforce of around 400 people for another 10 years, the continued supply of high quality coking coal for steelmaking to both the domestic and export markets using existing infrastructure, significant benefits to the State of New South Wales and the local Wollondilly region, GFG Alliance will be able to pursue its carbon neutral 2030 commitments

whilst continuing to support local manufacturing, and it will be a continuation of the significant contribution that our business makes to local communities within the Wollondilly Shire.

The Department of Planning, Industry and Environment have included in their assessment report and we believe that the project achieves a balance between the significant benefits the project brings to the local area and the potential impacts of the project which we've demonstrated that we can successfully manage over many years of mining in Tahmoor North. Thank you very much.

MR BEASLEY: Thank you, Mr Vale. I think Professor Mackay has a question on biodiversity, the EEC.

PROF MACKAY: Yes. Thank you, Mr Vale. I would just like to raise with you, if I may, something that we've already raised with the company during our meeting last week, and that relates to the site of the two vent shafts. As designed, that will have an effect on approximately 10 hectares of identified critically endangered ecological community, the ironbarks and grey gum. It would assist the Commission if you might comment either now or, if you prefer, on notice about what the company would do to accommodate the vent shafts in the event that those lands were actually not available, please.

MR VALE: Yes. Look, further to our site visit last week where this matter was raised, we have already commenced a review of what we may be able to do in that area. There are some very early indications that we will be able to make some changes and make some different arrangements in that area which will potentially minimise the need for some of that clearing. If it's okay with you, I will take that question on notice and provide a much more detailed response in our written submission. But – yes. We commenced work on that immediately after the visit last week.

PROF MACKAY: Thank you, Mr Vale. And we look forward to that further information submission which we will publish on our website. Can I just check with Professor Fell and Mr Beasley whether there's any other questions.

MR BEASLEY: I think if you could also take on notice, Mr Vale, whether you can provide any assistance to the Commissioners on the water treatment plant contemplated in the proposed conditions B29 and the quality of water that will come out after it's treated in that plant.

MR VALE: Yes. As I said, we've been working with the EPA for some time on that, and our commitment is that all analytes will be reduced to a level well below the ANZECC guidelines.

MR BEASLEY: Right. Okay. Thank you.

MR VALE: But, again, we're more than happy to provide more information on that in our written submission.

MR BEASLEY: Thank you.

PROF MACKAY: Thank you, Mr Vale. And conscious that we are a little over the published time, what we may do now, please, is adjourn for a break, and the online public hearing will recommence promptly at 12 noon Sydney time. We will look forward to participants joining us again then at 12 noon.

RECORDING SUSPENDED [11.35 am]

RECORDING RESUMED [11.58 am]

PROF MACKAY: Well, welcome back. And we will resume the day 1 hearing of the Independent Planning Commission online public hearing into the State Significant Development Application for the Tahmoor South Coal Project SSD8445. Mr Beasley.

MR BEASLEY: I think the next speaker we have is Mr Nathaniel Smith MP who's the member for Wollondilly. Are you there, Mr Smith?

MR N. SMITH: Yes. Good morning, Commissioners. ..... Mackay.

PROF MACKAY: Please go ahead. We can hear you.

MR SMITH: I thank you both for the opportunity to address you in relation to Tahmoor South Coal Project. I was elected to the New South Wales Parliament for the seat of Wollondilly in March 2019. My electorate contains the Tahmoor Colliery and the proposed project area of Bargo. I strongly oppose this application. Let me be clear. I have one motivation in stopping the proposed mining beneath ..... Bargo. I have heard too many heartbreaking stories of misery dealing with mine subsidence. I have seen doors that won't open, walls that are cracked and sewerage pipes that are broken. Many of these repairs need to wait until subsidence has stabilized, a period that usually takes up to five years.

My office has provided assistance to more than 50 families by mine subsidence since becoming a member of Parliament less than two years ago. Whilst the original plan has been amended twice, the fundamental problem remains. Mining beneath homes and the devastating impact that expected levels of mine subsidence will have on them. I will not support any proposal which involves mining beneath family homes. There have been recent criticism in the media by supporters of the mine and I've refused to meet with SIMEC or the unions to discuss this mine expansion. Let me be frank. This is simply an attempt to undermine my stance on this proposal by placing

doubt in the minds of the community that I fully understand the extension proposal, or have not given SIMEC management the opportunity to explain it.

For the record, since SIMEC lodged their original proposal to mine beneath Bargo, I've met with their management on six occasions, more than any other non-government organisation since becoming a member of Parliament. I've also met with union delegates of the Construction Forestry Maritime Mining and Energy Union, the CFMEU. The suggestion that I have not met with these two stakeholders is, quite frankly, albeit, a joke and a very bad one. With your indulgence I would like to quickly respond to the most egregious of smears forwarded by supporters of the mining extension, that is, I am advancing the interests of developers or of a particular developer.

In recent weeks a whispering campaign has been ..... peddling untrue stories to a number of media outlets. It is disappointing that one of the media networks gave air time to these outrageous smears. Again, this is designed to put unfounded doubts in the minds of the community regarding my sincerity in opposing this mine extension, and to bully and pressure me to stop my campaign of spreading the information about the devastating impact of mine subsidence. For the record, the iron ore Development Application was refused last year. The department refusal specified on a number of grounds including its susceptibility to mine subsidence.

I understand from Subsidence Advisory New South Wales that the expected level of subsidence in Bargo cannot be mitigated by current building standards, but the important point from this matter is that even if the Tahmoor South Coal Project was not in play, the iron ore development would still have had significant hurdles to overcome, and would not have been approved. Moreover, my concerns regarding mining beneath homes and mine subsidence dates back to my inaugural speech in Parliament in May 2019 and followed up in a private member's statement the following month. It predates any meeting regarding the iron ore DA. I find it disgusting that senior members of the CFMEU would dog whistle underbelly stories to defend a mine expansion plan, particularly a union that is under its own real cloud of underbelly-style corruption. I do declare that I - - -

MR BEASLEY: Don't forget, Mr Smith, we're here to hear your views about this particular project.

MR SMITH: Yes.

MR BEASLEY: Not the union. So if you could focus on that. Thanks.

MR SMITH: I'll keep moving on. I do declare that I have held four meetings with either Planning Minister Stokes or department officials about this current proposal. In each meeting I have been crystal clear in my opposition to this mining expansion. I am frustrated that this matter is before you today with a recommendation for approval from the department. For the community to have confidence in a process that are determined at arm's length through government, it is important that there be

consistency in decision-making. Whilst I would argue that on its own the merits of the Tahmoor proposal should fail, it certainly should not have been received favourably – a favourable recommendation when the Hume Coal Project near Berrima received a not approvable in its present form.

The Hume Coal Mining Project proposed a low impact underground operation. The plan involved extracting high quality coking and industrial coal from the Wongawilli seam 70 to 180 metres below ground using an extraction method known as first workings, designed to preserve the long-term stability of the overlaying strata and landscape above. Total coal production was expected to be 39 megatons over a 19-year mine life compared to Tahmoor's 33 megatons over 10 years. Hume was to invest approximately 640 million compared with Tahmoor's investment of 342 million. Royalties are a bit more difficult to determine with certainty, particular with the price of coal at present, but I'm advised that Hume would have generated a net present value of about 148 million against Tahmoor's 131.5 million.

Hume coal would have generated 300 full-time equivalent jobs compared to 245 jobs for Tahmoor. I will touch on the last figure a little later. The most significant differences are the area of subsidence. Hume coal would have created just 20 mil compared to the averages in the Tahmoor project of well over a metre. No homes would have required repair under the Hume proposal. In contrast, Tahmoor will see over 100 family homes damaged to varying degrees, with 22 homes damaged to such an extent that they will effectively be destroyed and require offers of acquisition. In the case of water bores, Hume would impact 94, Tahmoor 228. Not one indigenous rock shelter is impacted by the Hume proposal, but Tahmoor will impact 10 significant sites.

In addition, the Tahmoor proposal will impact the Hume Highway, Moomba Sydney Gas Pipeline and up to 7.6 kilometres of the main southern railway line. You may now understand my astonishment as this proposal receiving a recommendation, when, clearly, it appears to be a greater reach for damaging both built and natural environment compared with the Hume proposal, but here we are having to deal with this matter today. Commissioners, I am also perplexed by the arguments put forward in support of the application by both SIMEC and the department. They both herald the 81 per cent reduction in homes impacted from the original DA as grounds for supporting this application.

This reduction is not due to technological advances that result in less impact, nor different mining methods. This reduction is simply achieved by reducing the size of the project. This is not a logical argument that supports this application. If there were, mining applications would have been refused, would simply need to reduce the scale of the project to a more acceptable size and resubmit. Logically, they could never be refused. Don't lodge to go under 751 homes in one go, do 143 homes today, another 120 in a few years and so on and so forth. Another argument advanced by SIMEC and the department supporting this application is that Bargo was declared a mine subsidence district in 1975. Put simply, the township knew it was coming for them, and they should just accept it.

This argument, however, overlooks a few key facts. Firstly, 83 per cent of the township was built after 1975. Successive councils – and I must add, State Governments – have been complicit in permitting increasingly urbanised development in and around Bargo. It has sent a signal to the community that mining would never occur beneath the township. Secondly, in 2016 Glencore, the previous owner of the Tahmoor Colliery, publicly announced they intended to close the mine in 2019. I understand that the mine is no longer financially viable and with the legislative reforms of the new subsidence compensation scheme shifting the burden from the mine subsidence fund to individual collieries. Glencore wanted out.

This was a watershed moment. The Tahmoor Colliery with its 340 employees and contractors had announced to the local community that it would close forever. There was no mention of the economic tsunami coming for the area. The local community weren't rallying to save the mine. Instead, people saw new opportunities, but, of course, other events intervened. And now SIMEC are the owners of the mine. This gives me the opportunity to deal with the final argument put forward by SIMEC; the number of jobs this project will save, the economic impact it will have on the local area. We have again heard today the line that the mine will support more than 400 jobs.

I do believe it's time that these claims be substantiated. We must deal with the full-time equivalent numbers, and all the advice I have received from experts in the industry is that Tahmoor cannot support more than 245 full-time equivalent jobs. This brings me to the economic case which is supported by Ernst & Young economic impact assessment. The figures contained in it are not verified by Ernst & Young and are provided by SIMEC. When simple job figures are not accurately provided, it is fair for the community to be sceptical about the economic benefits. It has not helped when the net present value of mine subsidence costs is estimated by SIMEC to be 13.8 million. This is included in the operational cost borne by SIMEC, but in my considered opinion, is entirely inadequate when the full cost of Tahmoor North operations are fully investigated and extrapolated to this project.

Furthermore, I'm advised that Kalinya Estate, an award winning Bargo luxury residential accommodation venue, has estimated that its predicted damage bill for subsidence will be between 10 and 14 million, and this is important. Unlike previous owners of the mine, SIMEC is wholly subsidiary of an overseas private parent company. Its financials are a bit .(wording needs to be checkd).... unlike public companies that publish regular financial updates. The community is largely in the dark about SIMEC. We know that Glencore retreated from Tahmoor due to profitability concerns. This was when mine subsidence levies were imposed prior to the current spending and were a fraction of the direct cost of subsidence damage, which SIMEC must directly now bear.

I accept that whether some activities are profitable is a matter for them. However, if they fail, it may have implications on the taxpayer of New South Wales who would need to cover the outstanding compensation claims. No sensitivity analysis has been conducted in the Ernst & Young report around this scenario. The

economic assessment makes the assumption that the mine will not reduce the output of other industries. Presumably, it assumes that there is no opportunity cost by undertaking this project. These assumptions are wrong. Wollondilly Shire has made a conservative effort outlined in its development strategy to pivot towards agritourism. This mining proposal will undermine that strategy and stymie investment opportunities in the local area, not just for Bargo.

The glaring omission from the economic analysis is the mental health costs and the loss in productivity from subsidence-related matters. As mentioned earlier, damage to a home happens over a prolonged period, lasting about five years. Lacking of functioning bathrooms and kitchens throughout his period has serious and lifechanging impacts on the households effected. Disputes regarding whether liability is accepted for damage is frequently raised as an issue. I understand that on average about 40 per cent of claims are refused, usually on grounds of reactive soil or drought impacts. It would be irresponsible to ignore these mental health impacts from dealing with subsidence and its economic impact on the community and this project.

Commissioners, I have presented to you key facts that have been at my disposal, and I believe it would be in the best place for you determining this matter. However, I will concede that there is more information that should be made available to you. For example, I am led to believe the government may have prepared a report around 2013 that investigated the issue of coexistence between mining and urban development. I would urge you make contact with the Department of Premier and Cabinet as well as the Department of Planning to ensure that any detailed studies have been made available to you.

Another factor that is denying you all the facts are the non-disclosures that settled compensation claimants are required to sign. This gag order are concealing the true social and economic costs of the mine subsidence. SIMEC claims to put people right if they suffer from mine subsidence. However, the evidence I have seen from those effected differs from the rhetoric. I am yet to receive a satisfactory reason for not permitting these people to be released to talk of their experiences to the Commission. After all, if settle claimants are happy, as SIMEC may suggest, what do they fear from people being free to discuss their experiences?

Commissioners, I have stated in Parliament last week that mining expansion beneath parts of Bargo is an embarrassment to those in the industry that I have spoken to, and as someone who supports mining, it is an embarrassment to me. When I explain the true impacts of mine subsidence to my parliamentary colleagues, irrespective of their political stripes, they express shock and dismay. The Tahmoor South Project is unique in its damage profile on family homes and its harmful effects on the mental health and wellbeing of the community. I urge that this Commission factor in the enormous social cost of this project proposal. If you do, I am confident that you will find it must be refused.

MR BEASLEY: So, Mr Smith, just to underline precisely what the key matter – reason for your opposition to this project is, it's not that there's not a statutory scheme to – for repairs to be done to houses or for compensation to be provided, but it's – you want the Commissioners to consider that period of time which, as you say, might be five years or a long period of time between the first impact of subsidence and when repairs can actually be done. That impact on both the home, but also to the owners and occupants of the home during that period of time – that's something you think needs to be factored in very carefully by the Commissioners.

MR SMITH: Absolutely. And obviously the amount of compensation that the mine is putting towards that because I just don't believe it's adequate. The amount of people I've had in my office in tears over what they've experienced, whether it was through the old scheme, whether they're currently going through the scheme now, and the fact that they had to sign gag orders and can't speak about it. That's why it's sort of – it's not talked about as much as it should be.

MR BEASLEY: All right. Thank you. Thank you for that. Next speaker we have is – should be Andrew Wardle from Tojolu Pty Limited. Mr Wardle, are you there?

MR A. WARDLE: Yes. I am. Can you hear me okay?

MR BEASLEY: We can. Please go ahead, sir.

MR WARDLE: Good morning to the Commission. I would like to further lodge my strong opposition to the proposed extension of Tahmoor South Coal Project. My objection is on three grounds. Based on the reports submitted by Professor Sackett objecting to Tahmoor South Coal Extension, 10th of October 2019, it's unconscionable in this time that we continue to increase CO2s when the world is pushing for dramatic lower levels. Dr Ian Wright, senior lecturer at the University of West Sydney, specialist in water chemistry, water pollution and water ecology, wrote a damning report on the impact of underground mining covering both the historical behaviour of the SIMEC mine in Tahmoor, and the potential if this mine were to be extended.

Past swimming holes in the region have dried up through cracking, and highly toxic chemicals are already present in local creeks where people drink and swim. Any extension of this mine will be highly dangerous to the local community. Barium, strontium, lithium were at alarming levels. In reports presented by Undermined, the environment has been totally compromised in both Myrtle Creek and Redbank Creek, are perfect examples of mines not putting the environment on the agenda. Longwall 30 has already decimated creeks, left pollutants. These creeks, once swimming holes in the community and the lifeblood to animals, have dried up and have not been repaired or restored from past mining.

Secondly, Dr Geoffrey Bennett's expert witness report, 17th of December 2019, the author of 140 international journal papers, 18 books in the field of environment, natural resources and agricultural economics, was damning of the economic impact

assessment of Tahmoor South as prepared by ..... Some of Mr Bennett's findings ..... stated are too high and reflect artificial tax elements. Employment benefits stated are grossly overstated, as was supply chain values. Overall, the net present value of Tahmoor South fell by over 450 million over the life of the project in his report. Further, indirect costs have been omitted from the report. The report does not give a clear picture to the full cost of the project.

For example, what is the cost to restore Myrtle Creek and Redbank Creek from past projects? Inaccurate forecasting of the effects of the longwall mine have already occurred. This damage cannot be remediated. What is the cost of future latent damage to our waterways? What is the cost if Bargo cannot grow as a community because the subsidence will not allow development? None of these costs have been considered. Nor the particular mental health issue that was just raised. Further, in 2019 local developers approached SIMEC to work on a coexistence proposal, a proposal that the mine and the community can work together. The developers agreeing to subsidise the mine for its subsistence liability in support of coexistence, a plan supported by local and State Government.

SIMEC rejected the offer. What does this say about: (a) the real cost of subsidence and; (b) the mine's willingness to work with the community. The actions to cut back two walls is a positive, sure, but it's not enough. Future town growth is at high risk. My last point. The paper – a paper for Wollondilly growth vision was set out by Mr Dieth as a vision for Wollondilly 2040. The plan was built on two key pillars; liveability and sustainability. In Bargo there are three sites for development representing 177 future homes. Bargo is an affordable living community where people commute to the city suburbs for work. Demand to live here is high.

These 177 homes would have more direct benefit to the town than the mine expansion. 177 new homes would create 250 plus jobs for tradesmen. 177 new homes would provide families affordable housing. 177 new homes would bring spending to the local business, an outlay of some 70 million to new housing, a minimum of two million per year spent in local business, or 70 to 80 million over the lifecycle of the proposed mine. The benefits without impacting the environment – liveability and sustainability. Today the mine extension will stop liveability in its tracks and the risks to sustainability are high. Past longwall mining has created enormous stress for many families living in conditions created by longwall mining.

The past subsidence issues, still not addressed. Past environmental issues, still not addressed. There is little economic advantage to this mine as the previous mine owners have shown by not proceeding with the mine years ago. Independent analysis shows the economic benefits of the mine are minimal. Common sense says Bargo is a growth hub for low cost housing. There is more benefits to no mining, both economically and environmentally. It's a clear no to the extension of Tahmoor South Project. I'll just conclude that Wollondilly is attributed to have the meaning, water trickling over rocks. Ironically, there'll be less water trickling over rocks if this mine goes ahead.

MR BEASLEY: Thank you, Mr Wardle. The next speaker we have is Jarred Danaher from RStar Mining, I think. Mr Danaher, are you there? Mr Danaher.

MR J. DANAHER: .....

MR BEASLEY: There we are. We can see you. Please go ahead, sir.

MR DANAHER: Thank you. Good afternoon, Commissioners. I'd like to thank you for the opportunity today to speak in support of Tahmoor South Coal Project. My name is Jarred Danaher. I'm the owner and operator of RStar Mining. We supply contract workers, materials, equipment to mines in the area, but this is almost exclusively to Tahmoor Coal. My association with Tahmoor Coal dates back to my father who moved here from Queensland as he accepted a job as the mine was being constructed in 1976. My father, John, was seriously injured on the 21st of December 1977 whilst working on the construction of the drift. This resulted in the loss of his left arm and the sight in his right eye. Soon after, my parents moved to Bargo.

Following his accident, the mine offered him a job for life which he accepted and continued to happily work at Tahmoor until 2010 when he retired. Over time there's been seven different owners of the mine. Each of the mine honoured his job for life arrangement which, if they challenged, possibly could have been overturned, but such is the culture at this mine. It supports its workers and the community that they live in. In 1979 my parents built a home in Wattle Street. This was built to mine subsidence standards as the land was recently classified as subsidence in 1975. My wife and I purchased this home in January 2010 to live in, and eventually become the home of RStar Mining.

My parents moved into another home in Wattle Street where they continue to live to this day. Longwall 106B will mine under both of these homes if the Tahmoor South Project goes ahead. Given our family's connections with the mine, we fully understand the potential impact of subsidence. We do not intend to move from the area and have full confidence in the Subsidence Advisory New South Wales process should anything arise. I commenced work at Tahmoor Colliery as an operator in December 2004. I worked in many different roles and many different shifts. In January 2012 I saw an opportunity to start RStar Mining, and started RStar later that year.

We started with one employee. We have grown now to over 250 thanks not only to the strength to our business, but also the commitment of companies like Tahmoor Coal who continue to provide opportunities to local suppliers and local people. More than 90 per cent of our employees live within a 40 kilometre radius of Tahmoor Colliery. All these fathers, mothers, men, women and children, rely on the ongoing operation of local mines, particularly Tahmoor. This allows them to continue living and working in the area. We've worked at other mines, but specialise in Tahmoor. It's been extremely hard to get work at other mines due to the recent economic climate, COVID and other external factors.

This demonstrates (?). how critical our ongoing work at Tahmoor is to the survival of RStar Mining. During the current pandemic and ongoing pandemic, thousands of jobs have been lost. The Australian government has injected billions of dollars into the economy to counteract this. If the extension is not granted at this stage, it would see RStar Mining reduce its workforce immediately. These reductions would continue until RStar Mining would close its doors over the coming months. This would be heartbreaking for us, being we built the business up over eight years and knowing the important role coal mining plays in this district.

Just like the colliery, we also support local charities, sporting teams, obviously to support them in the causes, but also because our staff are members of these clubs and groups. They are, we are connected to the community. Tahmoor Colliery, particularly SIMEC, has always supported all workers at Tahmoor Colliery. This is no more evident than in 2018 when number 3 shaft became inoperable for six weeks due to an incident. Rather than stand our workers down with no pay, Tahmoor Colliery kept them working by sending them into the community to work on various community projects free of charge. Some of the projects our team worked on was miners helping farmers at the top 40 orchards and other farms during the drought. We purchased materials and built a new cool room for our community pantry food rescue service in Bargo, painted fencing, built sheds, concreted paths for Tahmoor Community Links, rehabilitation of the facilities at Thirlmere Lakes National Park.

These community groups really appreciated the help our teams gave them, and our workers definitely appreciated the opportunity to continue being paid and doing rewarding work at a time when the mine could have just sent them home with no pay. In 2019 the devastating bushfires almost destroyed the mine. The workers were evacuated and the mine was almost lost. Whilst the workers were at home they were paid as if at work and I will always remember this. Peter Vale, the operations manager, saying, “We will pay the workers as it falls within our core values”.

In today’s time not many companies take this approach these days, and, again, our business and workers were hugely appreciative of the mine’s commitment to keep paying them when they could have just easily stopped payments until they returned to work. This is another example how Tahmoor Colliery invests in its workforce and the local community. In conclusion, the mine is a community within the community. It doesn’t matter whose name is on the front gate. It’s the people who are inside and this is what genuinely makes Tahmoor Colliery great. As someone whose families live and work in a street that will be mined under and as a business owner who has more than 250 workers’ futures depending on the approval of this mine, I strongly support the approval of this project.

You don’t have to look far. Look at the township of Tahmoor, which has been mined under for 40 years, to see that a community continues to grow and thrive when mining is occurring underground, and it’s this very mining activity which keeps many locals employed and businesses surviving. I’ve seen firsthand the rectification works through ..... subsidence impacts. When required – and I’m not concerned

about my own property. If there is impact, I have full confidence in the Subsidence Advisory New South Wales process to ensure we will receive any support we need.

In closing, I recognise that 143 homes will be mined under, including the family home I grew up in, the home of RStar Mining, and the home of my parents. Some of these homes may be affected, but if the extension is not granted, the loss of over 500 jobs is guaranteed. In turn, this will affect thousands of people's ability to live and work locally. Commissioners, I thank you for your time today.

MR BEASLEY: Thank you, Mr Danaher. The next speaker we have is Mr Rod Doyle. Mr Doyle, are you there?

MR R. DOYLE: Yes, Mr Beasley. How are you all?

MR BEASLEY: Good. Good to see you again. Please go ahead.

MR DOYLE: Likewise.

MR BEASLEY: We can hear and see you.

MR DOYLE: Thank you. Thank you, Commissioners. I'd like to start by saying that I support an indigenous voice to the Australian Parliament and look forward to the day a treaty is in place for the country's indigenous people, and I thank the IPC for setting a positive example of their acknowledgement of country. I also support the extension of Tahmoor Mine and I urge the IPC to approve it. I'm currently employed by the coal industry and have worked in it for over 40 years. As a coal geologist and an underground geotechnical engineer, I have an understanding of both the impacts of longwall coal mining, and appreciation of the benefits.

On balance, it's my assessment the extension of Tahmoor will be in the best interests of the regional community, and, more broadly, the people of New South Wales as a whole. I'd like to stress that Tahmoor produces prime metallurgical coal from the Bulli Seam. It is of exceptionally high quality and is in very high demand. This coal produces coke. Coke is a vital material for use in blast furnaces for the production of steel. Again, I'd like to stress the rarity of the hard coking coal in New South Wales. It is an extraordinary beneficial resource for the State. With the recent refusal of Dendrobium, the extension of Tahmoor becomes even more necessary for many other industries as well, including BlueScope Steel, the Whyalla Steelworks, Port Kembla Coal loader and the ongoing use of the ARTC rail network, to name a few.

The proposed extension will support the existing workforce maintain their jobs and provide benefits via royalties which, in turn, supports our emergency services. It will also see value put into the local community, but, more critically, improving Tahmoor is a vote to support the production of steel, and, as Mr Gupta notes this morning, support for the transition to alternate power sources, support to make a rational and prudent approach to reduce greenhouse gas emissions rather than an emotional

approach. Steel is critical to produce such items as wind turbines. If we're going to make the successful transition away from the carbon-based economy, we must put alternate means of power production in place. Steel is essential in making that transition which makes metallurgical coal vital to our future.

..... Mining causes impacts. No one is denying that. Associated with ..... for example, the subsidence largely discussed today, gas emissions and also groundwater impacts. The mine plant at Tahmoor has already been substantially modified to restrict the impacts of subsidence and Tahmoor's willingness to modify their mine plan reduces those impacts further. Fossil fuels contribute about 70 per cent of all global greenhouse gas emissions. Coal contributes 25 per cent of those total greenhouse gas emissions, but many fail to recognise the simple truth, that agriculture and the clearing of land are responsible for the remainder. Agriculture produces just about the same amount of emissions as coal. There's one example I'd like to put to you. 10 billion cattle are on the planet today all producing methane at a rate of about 1000 times more than a human being.

To make matters worse, the impact of methane is 25 times worse than carbon dioxide. It's my belief that we need to address all areas of greenhouse gas emissions, not just coal (?)..... Coking coal is essential to make that transition to alternate power generation. Currently New South Wales generates about 80 per cent of its electricity from coal. We have a long road to go to turn that around which means a lot of renewable infrastructure needs to be constructed and operating. It's not going to happen overnight and it's not going to happen without steel or without coking coal. I'd like to draw your attention recently to Lock the Gate who issued a warning about the coal industry being greenhouse gas polluters, and criticised the IPC for approving mining projects, highlighting the IPCs lack of independence.

I'd like to reinforce that just because the referee makes a decision that Lock the Gate doesn't like, doesn't mean that the referee lacks independence. It's my belief that what we need is a collective approach, a realistic and positive way of going forward with a transition to a lower carbon economy that sees all contributors working towards a solution. We need a viable roadmap from all greenhouse gas contributors to minimise their emission footprints. In this nation of obesity (check), one needs to ask what has Lock the Gate ever done to reduce emissions from the industry it represents. How many farms in the state are assessed on their offsets to greenhouse gas emissions? How many farms in the state actually monitor their usage of water against their entitlements?

As primary producers, coal mines are required to do this. Why aren't farms? I call on Lock the Gate to do what they can do reduce greenhouse gas emissions in the agricultural sector, not just point the finger at the IPC and the coal industry. Personally, I maintain faith in the IPC and am confident that they will assess the Tahmoor extension on its merits. Thank you, Mr Beasley. Thank you, Commissioners.

MR BEASLEY: Thank you, Mr Doyle. Anyone got a question? Thank you. Next speaker we have is David Eden from Undermined Inc. Mr Eden.

MR EDEN: Yes. I - - -

MR BEASLEY: We can hear you, sir, and we can now see you. So please go ahead.

MR EDEN: That's great. I declare I'm a community member of the Independent Hearing Assessment Panel for Wollondilly local government area. I also declare my views submitted on this Tahmoor South Coal Project are not part of a Wollondilly Local Planning Panel. I will share my screen showing my presentation.

MR BEASLEY: Yes. We – that's come up now.

MR EDEN: Thanks.

MR BEASLEY: Yes.

MR EDEN: And I will explain the key matters – the reasons that underlie my – objections to this proposal and why it should be refused. Drying. The SIMEC mine design maximises extraction of the valuable coal resource and that's because it causes unacceptable surface subsidence, water drying and loss. Greenhouse gas emissions from scope 1 and 2 of 28 million tonnes from this project will not be captured or offset. So it's kind of saying you can just make as much greenhouse gas as you like. That's totally unacceptable. I would like you to refuse the project on that ground alone. There is an unacceptable risk increase as climate change has already increased the frequency of unacceptably hot weather, bushfires, drought and extreme flood events.

In the past, self-regulation has been used to reduce the environmental impact of this mine. It's inadequate. This IPC is the last and only chance to stop irreparable damage. This photograph shows the relationship of the mine to Thirlmere Lakes on the left and the proposed mining on the bottom right. Dr Philip Pells will talk on the topics of geology and hydrology on Wednesday. Thirlmere Lakes are the blue colour about 700 metres west of longwall mining in 2001, near the white dot to the left of the mined area. Lake Couridjah is the middle of five lakes, normally the deepest, with a maximum water depth over six metres before mining and the closest lake to Tahmoor Coal Mine. Past mining is turquoise and the darker green is mining proposed by SIMEC. This and the next three graphics in our Undermined presentation are from the new Environment, Energy and Science Progress Report of the Thirlmere Lakes Research Program.

The 70 members of the community group Undermined ask why Thirlmere Lakes started drying when underground mining got closest and the mine-produced water trebled in volume from four megalitres a day, before the mine approached Thirlmere Lakes, to 12 – or 13 megalitres a day after the mine did its closest approach to

Thirlmere Lakes. There's a big question there. Has rock fracturing to the east reduced water flowing west, so lake replenishment is less. Is climate change the major cause of lake drying. Is mining contributing to climate change. We don't have scientific evidence either way on this. We've got really good idea though. Will the next bushfire be so bad that it burns the water-retarding peat lining the lake bottoms that holds the water in. Can we rely on the New South Wales Government to regulate greenhouse gas emissions affecting the climate, to limit surface drying, to enforce licence limits on wastewater produced by the coal mine.

I'm saying these questions are important. They're important enough that the New South Wales Government funded the Riley Inquiry in 2012. Now, the New South Wales Government is spending a further $1.9 million on scientific research to understand what's happening, to answer these questions, yet we still do not have a measure of mining's contribution to drying. These photos from the research program show on the left the lakes in 1962 with water in them. The water there is, in depth and area, up to 1990 and, 2002, there's plenty of water there but Lake Baraba is decreasing in volume and you can see in this slide how the lakes are getting generally drier. Until you come to the last slide in January 2019 where the three lakes on the right are totally dry.

It takes an individual rain event in 2016 to fill the lakes to about one metre depth, in the left-hand most 2017 photo, and they get about another metre in 2020 when it rained in February. A particular rain event. Look, these lakes used to be used for motorboats and water-skiing. Not only is it drying, it's Aboriginal heritage. Do the rubbing, sharpening or grinding grooves in Redbank Creek and Myrtle Creek have an Aboriginal origin? My photograph was taken in Redbank Creek 200 metres downstream where you, the IPC, inspected remediation work last Tuesday. It was a First Nations person who said without water you lose the heritage. Undermined says, by diversity, an Aboriginal cultural heritage loss would be significant if this project was approved. Past by one generation on to future generations. The key matter for this IPC is the SIMEC application is not consistent with a principle of intergenerational equity.

Climate change has had an effect on me. It has had an effect on a lot of people. I know it has had an effect on me because bushfire risk is increasing. Professor Penny Sackett will present the issue of climate change on Wednesday. The Green Wattle Creek fire in 2019, on 6 December at Oakdale, occurred earlier in the fire season because of climate change. This photo shows our place and our carbon sequestering tree plantation planted in 1998 being burnt. We had 18 years to prepare for the 2019 fire. This photo shows our neighbour's property going up in flame. Extending Tahmoor South would emit greenhouse gases making climate change worse, increasing the risk of bushfires and their intensity, increasing the intensity and frequency of drought. Our dam helped save other properties nearby when the Green Wattle Creek fire struck.

As well as warming, other changes to our climate include increase in weather variability, weather .(?).. .. less rainfall on average, occasional more intense rainfall

events when it does rain, and longer droughts. Even with conditions to offset greenhouse gas emission in a hotter world how much bigger will dams have to be? How much bigger should we make our dam? How much more effective will bushfire preparations have to be? We say that water produced by the Tahmoor Mine results in the white, dried salt deposits that you can see on the banks lining Bargo River at Mermaid Pools. Existing mining conditions and adaptive management had not prevented river pollution. Dr Ian Wright will describe the mine's pollution of Bargo River tomorrow.

You saw where cement and plastic was being injected into subsided, cracked and dried creeks and it was called rehabilitation. It's not rehabilitation. Unless the water seals remain flexible over the years, as the rocks continue to subside and settle, they're not durable. The Department of Planning, Industry and Environment has not recommended offsetting greenhouse gas emissions from Tahmoor South. That's enough reason to refuse it. SIMEC applied to extend its mine before the scientific results investigating Thirlmere Lakes have come in, failing to apply the latest science and best practice to its mine design and environmental predictions. Are there low expectations of what you can expect from a mine. Why did South32 ask the Department of Planning to assess their Dendrobium Mine extension which was so inadequately planned that South32 intended to dry up land swamps. Why would SIMEC offer such – this environmentally damaged – damaging proposal for your consideration? They haven't put enough effort into it.

As well as doing bad things, it was foreseeable and there are alternatives – alternative non-polluting ways of progressing. Mining jobs are well-paid because of the capital intensive nature of the mining industry. That could be why people want to stay with the same jobs they've had. There are less polluting alternatives to blast furnace technology making steel. The Gupta Family Group have already announced Liberty Steel Whyalla investigating green steel making, to be explained by Tony Wood and John Pye this afternoon. Refusal will help mineworkers to transition into sustainable employment early and refusal will help the Gupta Family Group to green its steel making.

How do we adapt socially to environmental change? The environmental change is happening. How do we adapt to it? Well, we've had scientific knowledge. That's a really good way of understanding why it has happened. Joseph Fourier, in 1824, realised the earth is kept warm by its atmosphere, like a big blanket. Seventy years later, Svante Arrhenius measured just how much carbon dioxide influences this greenhouse effect. and increasingly higher record daily temperatures. Asphalt on roads melting. Is that enough to convince the world population that global warming is happening? I don't know. Perhaps knowing the number of people dying from record high temperatures would be enough to shift people. Over 4000 died in Paris from a heatwave.

How about number of animals killed. People dying in the 2019 bushfire, more 2001. Nicholas Stern made scientific arguments for acting earlier. We've had great people – well, some of you might think they're great – Bob Hawke wanted to reduce gas

emission. John Howard wanted to reduce it. Kevin Rudd tried. Julia Gillard. Barack Obama. Malcolm Turnbull. Even papers said we ought to reduce greenhouse gas emissions. So, summarising, 200-year-old scientific knowledge has not been enough to change human behaviour. Our experience of more frequently hot and drier weather has not been enough. Powerful people haven't persuaded us to sufficiently reduce our greenhouse gas emissions. It's up to this Independent Planning Commission to weigh the scientific evidence presented. Landscape scale dewatering at Thirlmere Lakes. Mine subsidence in what were natural areas. Causing the loss of heritage. You've got to tackle this. The New South Wales Fire Service even had to assist Tahmoor Coal from not going up in the last bushfire.

MR BEASLEY: Mr Eden, we better wrap it up here, but can I - - -

MR EDEN: I hope you - - -

MR BEASLEY: Can I invite you, please, to send in your presentation to the Commission. Can I also just ask you – and please take this on notice, and I could be wrong, but I thought – and I only just noticed it before the slide went off – but I thought on one of your slides you attributed 28 million tonnes of CO2 to this project for scope 1 and scope 2 emissions, where I've seen figures - - -

MR EDEN: That's right.

MR BEASLEY: - - - and I'm not suggesting this is a low figure but, the reports I've seen, it's about 13.4 million tonnes of CO2 for scope 1 and scope 2, and about 88 million tonnes for scope 3. If you've got access to something else, please, let the Commissioners know when you send in a written submission. Thank you.

MR EDEN: Yes. I will do that.

MR BEASLEY: Thanks for your presentation.

MR EDEN: Thank you.

MR BEASLEY: I think the next speaker we have is Brad Coulter from RSTAR Mining and SIMEC GFG Alliance. Mr Coulter. Are you there, Mr Coulter?

MR B. COULTER: Yes. You there? Hello.

MR BEASLEY: Yes.

MR COULTER: Yes.

MR BEASLEY: I can hear you.

MR COULTER: Yes. Goodo. Good afternoon, Commissioners. My name is Brad, or better known by my work colleagues as Cobbler and that's because before mining

I was the business owner of Cobbler & Keys, a small local business that was strongly supported financially by Tahmoor Colliery for engraving and repair work. So it's easy for me to say that this mine supports local businesses. My dream of owning my own business came to a grinding halt when I started feeling the consequence of a damaged economy. Fighting a losing battle and heading home to my family not knowing where the next dollar will come from. As some of you may know this feeling, as owning a local business it isn't easy. The mental state I was left in, knowing that I can't supply an income to my wife and my four-month-old daughter, was gutting. It's probably the hardest time in my life so far.

It was then I decided to approach RSTAR Mining, a well-respected contract company at the mine. It may sound cliché but RSTAR and Tahmoor Colliery taking me on board has saved my life and my family. I make the fourth generation of miner in my family, some of which were employed at Tahmoor, so mining is in my blood. I speak to you today not only on behalf of myself but also on behalf of hundreds of men and women working at the colliery. If this project doesn't go ahead not only will be looking at hundreds of jobs lost but thousands of lives impacted from families to local businesses that are continuously supported by Tahmoor Colliery and its employees.

I am extremely lucky to have a job only minutes from where I live. It fits so well with my young family as I'm able to come home to them every night and know I can wake up to my daughter's little happy face. Without having any experience in any other career than cobbling, if this project were denied it would make myself and hundreds of other coal miners fighting to get another job in a similar career. This would force a lot of miners, including myself, to do FIFO or for you – some of those who don't know what that is, it's fly-in, fly-out. It's working away from our family for extremely long periods of time. My biggest fear in this project not being approved is obviously supporting my family. I take my daughter to swimming school on a Tuesday, preschool Wednesday and Thursday, and I take her to dancing every Friday, all of which I put my wage back into the local economy.

But she is the reason I wake up every morning, come to work and do my hours, so I can see a happy little face at the end of the week and know I have done the best I can to make her life amazing. My little family's routine we do week-in and week-out will come to a standstill until we know how I'm going to make an income to support them and a new house that I'm currently in the process of building right now. With all this being said, I'm only one of many employees impacted by Tahmoor South project, so I can't stress to you enough how much this project would mean for all of us. My comrades need this, my community needs this, and I need this. Thank you for listening and I wish you all the very best. Cheers.

MR BEASLEY: Thank you, Mr Coulter, for that. The next speaker is Rod Sweeting from Sweeting Consulting. Mr Sweeting, can you hear me?

MR R. SWEETING: Yes. I can. Can you hear me?

MR BEASLEY: We can see you as well. Please go ahead, sir.

MR SWEETING: I – let me share my screen. I've prepared a quick little presentation. Can you see that?

MR BEASLEY: It's coming up. Yes. Yes. We've got it now.

MR SWEETING: Okay. I have been - - -

MR BEASLEY: Might not quite be aligned.

MR SWEETING: Let me – where is it.

MR BEASLEY: We just need it to go to the - - -

PROF MACKAY: Other way.

MR BEASLEY: I won't say right or left but – you might - - -

MR SWEETING: Yes. The screen - - -

MR BEASLEY: Yes. We can't – we've lost the typing now.

MR SWEETING: Let's try again.

MR BEASLEY: Yes. Just try – yes. Try it all over again.

MR SWEETING: I will do that one.

MR BEASLEY: Reboot.

MR SWEETING: Is that better?

PROF FELL: Make it smaller.

MR BEASLEY: Yes. I think you might – I'm being told you might have zoomed in too much.

MR SWEETING: The screen is too big a resolution.

MR BEASLEY: So zoom out if you can.

MR SWEETING: Let me - - -

MR BEASLEY: You can always talk to it and mail it in as a submission.

MR SWEETING: I have emailed it in.

MR BEASLEY: Right. Okay.

MR SWEETING: If I just do it as a window – maybe try one more thing. Well, I can start while I'm doing this. I've - - -

MR BEASLEY: Yes.

MR SWEETING: - - - been working with Tahmoor Coal since 2007 where – and what I do is I have been installing monitoring on their - - -

MR BEASLEY: I think that's better.

MR SWEETING: That's better?

MR BEASLEY: I think it's working now. Yes. Yes. All good.

MR SWEETING: So I've been installing monitoring systems and maintaining them for Tahmoor Coal for many years. So to allow them to mine under the train line in Tahmoor initially, I developed, with the company I was working for, the rail monitoring system that was working there. It also allowed them to go under Ingham's as well – or mine next to Ingham's. I then passed that on when I left my company and have been working for myself since 2013, but they got me back to look at the Picton industrial area, the high school, the water recycling plant and we're in the process of installing more things on the train line as well, so I'm monitoring the train line in other places but not actually the rail but I believe there are other people talking about that later.

So Tahmoor presents a significant proportion of my work and I've been anticipating continued work from Tahmoor South, so there will be an impact on my business if the process doesn't go ahead. But I want to talk about the monitoring that we've been – that I've been doing which is mainly on industrial scale – places, not so much on the houses that lots of people have been talking about. So Tahmoor has been using continuous automated monitoring as part of the management plan for many years since – that whole time and they use it in areas where the infrastructure is critical, like the train line, like the Picton Water Recycling Plant. It sometimes is the optimum technique to use in those areas – for train line, it's the only technique that really works – and it's also used to minimise the impact on the infrastructure owner. So in the industrial area we had some tiltmeters on a whole pile of machines so that it didn't affect the operator at all, but we knew exactly what was happening, and a lot of what this is able to do is it identifies problems before anyone else knows about them.

So this – you've got monitoring sitting there going 24 hours a day. As things start to change, we realise it well before other people – the actual site knows about it.

MR BEASLEY: Sure. Yes.

MR SWEETING: This allows any rectification work to be done again before it has had any impact on the site owner. When it's critical – the systems are also alarmed so that they can tell you – I spent years being woken up in the middle of the night because there was some slight change on a train line. So it's all there for early warning so that it doesn't impact anyone. The monitoring equipment – just a few quick pictures here of some lasers on the bottom left and some tiltmeters that measure the ground tilts, that's installed on a milling machine in the top right, and then strain gauges to measure any stress changes – that one is on the Picton High School Hall.

So just a few examples of what happens. So if you look at this, this is some concrete silos in the Picton industrial area. Prior to mining, we installed tiltmeters and strain gauges on parts of the structure and there were also a whole lot of modifications done because of the critical nature of this and the height, tilts could have caused large problems. So all the modifications that would require for everyone to react quickly were all done prior to mining. When the mining went through, as you can see from the graph, it's showing tilt. There's six or seven tiltmeters shown on that graph and the bottom wavy line is the temperature profile, and as – when the first longwall went through it jumped up and then slowly decreased over time. As you can see from these, the tilts, for the last year and a half, did not change very much at all as subsequent mining went through.

The interesting thing about this graph is you can see – up the top – there are wavy tilt lines. They were actually weighing the hopper levels. So as the concrete – the level of cement in the silos reduced, they changed and we could actually tell the operator exactly how much material they had in their hoppers. But from all of this the hoppers tilted and no-one needed to actually do any rectification work at all. It all just went through and there was no problems whatsoever for the site. Another example is this is a milling machine in the Picton industrial area. This is one of the largest ones that the bed travels and it's about 15 metres from one end to the other. So – and they're trained to machine, things that are .01 – .1 mill accuracies.

So any movement of this – or any twist is the main concern for a milling machine – would cause problems. So we installed a series of tiltmeters on that and the graphs there, below, again, same sort of thing happened. It changed. A big step down when the mine first went through. Then it came back with subsequent longwalls and you can see on the right-hand side of that graph is, at the end of mining, we re-levelled the machine for them and it went back to what it was originally. These factories also had gantry cranes above them, so we installed some laser distometers across the span just to ensure that there were going to be no problems with the cranes. There was lots of other work. The cranes were upgraded for the sites before the mining to ensure that they were all capable of handling any affects that were happening. So - - -

PROF MACKAY: Mr Sweeting - - -

MR SWEETING: - - - this all happened - - -

PROF MACKAY: Mr Sweeting, it's - - -

MR SWEETING: - - - it all went through - - -

PROF MACKAY: It's Richard Mackay here. You're significantly over time even allowing for that slow start. So could we ask you to conclude very quickly, please.

MR SWEETING: Yes. That's fine. So, basically, there's no – well, no infrastructure over there since 2007 that has been forced to stop operations. Many shots showed negligible or no impact. The Picton Water Recycling Plant didn't do a single thing. Any impacts that develop are very slow, allowing intervention to happen. The – the systems are all designed for faster impacts but they've never occurred since 2007, in my experience, and we know about them before anyone else does. So we can plan any modifications, any repairs if we need to. There has been minimal impact and no safety issues in that time.

MR BEASLEY: Thank you. Thank you very much, Mr Sweeting.

MR SWEETING: Thank you.

MR BEASLEY: The next presenters are Scott and Shane Fulko from Tahmoor Coal. Can you both here me?

UNIDENTIFIED MALE: Yes.

MR BEASLEY: We can see you. Please, go ahead.

UNIDENTIFIED MALE: Good afternoon. My name's ..... - - -

MR BEASLEY: We're having little trouble hearing you at the moment. Is there - - -

UNIDENTIFIED MALE: .....

MR BEASLEY: It's still pretty faint.

PROF MACKAY: Can we switch to the next one and come back?

MR BEASLEY: Yes. I don't think there is anyone. We can't hear you at the moment so we might have to get you on the phone after a short – after a break.

UNIDENTIFIED MALE: Okay.

MR BEASLEY: All right. We're going to come back at 2 o'clock.

PROF MACKAY: Okay. That's - - -

UNIDENTIFIED MALE: Thank you.

PROF MACKAY: Look – so, thank you to those who have presented to the Commission this morning. We will now take a lunchbreak. Mr Fulko and Mr Fulko, we could – we will sort out the technical issue, if we can, and we will resume, please, at 2 pm, promptly, Sydney time. Thank you.

RECORDING SUSPENDED [1.07 pm]

RECORDING RESUMED [1.58 pm]

PROF MACKAY: Well, good afternoon and welcome back to day 1 of the Independent Planning Commissions online hearing into the State Significant Development application for the Tahmoor South Coal Project SSD 8445. Mr Beasley.

MR BEASLEY: Yes. I think we're going to go back and hopefully be able to hear this time Scott and Shane Fulko.

MR SCOTT FULKO: Yes, we're here.

MR SHANE FULKO: How you doing?

MR BEASLEY: I think we can hear you now so please go ahead.

MR SCOTT FULKO: Thank you. Good afternoon, Commissioners. My name is Scott Fulko and I am currently an undermanager on day shift at Tahmoor Coal and this here is my brother, Shane, who is a night shift operator currently at Tahmoor Coal. I've worked at Tahmoor for the past 12 years and have been in the industry for 15 years. I started out as an electrician underground and at Tahmoor as a contractor initially. To gain more experience I took a job away from home up the Hunter Valley. As soon as a job became available back at Tahmoor I took it so I could be close to my growing family. At Tahmoor I enjoy the mateship and the friends I've gained at work and the leadership it takes to do the job. I have formed workmates and a few mines in the Hunter Valley also where I've worked in the Illawarra region and can honestly say that Tahmoor is one of the stand out mines.

It has given me the opportunity to further my career and help me gain two statutory tickets, being a deputy and an undermanager, which I currently use. I am also a part of the mines rescue team in which it taught me extra skills that I have not learnt outside of the industry such as emergency response and advanced first aid skills which can easily be adapted to all other aspects of my daily life. I live currently at Harrington Park which is just down the road and am actively involved in the children's sporting teams and assist in the surrounding area's soccer and football

clubs. Tahmoor is close to home for me. It allows me to be home every night with my wife and four children. Not a lot of people get to say that in their current roles and the children's sporting activities and school events is where I like to spend my off time.

If I didn't work at Tahmoor there's a good chance I would be working remotely to stay in the industry. This also makes it easier for me to visit family and friends that also live in the Tahmoor area. If the extension does not go ahead, it would mean that I would be looking for a different employment opportunity. Being a statutory ticket holder, it would be difficult to stay in the industry without having to work remotely or away from home. The local area, in my opinion, would suffer with the other workers' contribution to local businesses no matter how small or large the involvement is. This would have a substantial effect on my personal life and create new challenges associated with raising four children and trying to stay locally in the area. I would hope that one day the industry would ensure a working opportunity for my growing family and I certainly hope to see out my career here at Tahmoor in the coal industry.

MR SHANE FULKO: Hi, I'm Shane Fulko. I commenced working at Tahmoor Colliery in 2012 and have held a full-time position since to which I am so thankful. In 2014 I moved to Tahmoor and bought my house. I have three kids aged seven, three and one. My family shops at Tahmoor Foodworks. We fill our cars up at the Shell service station across the road, get our hair cut at Jim's Barber Shop in Tahmoor and often indulge in fresh bread from Bargo Bakery. I am also the coach of the Picton Magpies under 7 football team. I have enjoyed coaching the team so much and have truly learned a lot from this experience and watching the kids grow and develop their skills has been amazing.

My time at Tahmoor Colliery has had its ups and downs and we have had three different owners during my time and through the uncertain times at the colliery and people that work there have stuck together and positively contributed to the community. Tahmoor Coal has provided myself with multiple opportunities through learning and progressing my career. They have put me through the mines rescue course in which I am a current active member and they are currently putting me through a deputies course which once completed will allow me to take a more supervisory role and pass on any knowledge I have been taught on to new employees. If the mine extension is not granted, I would have to look at employment elsewhere and, unfortunately, this could mean travelling far which would mean leaving my home, my friends and my working family behind.

MR SCOTT FULKO: Well, thank you, Commissioners, for allowing us the opportunity to speak in support of the Tahmoor Coal Project. This – our livelihoods rely on this project's approval. Thank you.

MR SHANE FULKO: Thank you.

MR BEASLEY: Thanks, Shane and Scott. The next speaker is Fred Quinsey from Intrim Group. Mr Quinsey, I think you're on the phone.

MR F. QUINSEY: Yes. That's correct.

MR BEASLEY: Yes. Go ahead. We can hear you.

MR QUINSEY: Yes. I'd like to say good afternoon to all those listening. I've been asked to speak on behalf of SIMEC as a local business owner that employs approximately 40 staff of whom 90 per cent live in the local area. We all admit there are challenges in living and working in a mine subsidence area and we're not ignoring that ..... We as a business have experienced it with our factory, in particular, we have never had any issue with the mines taking responsibility and paying for the remedial works needed to re-establish the building to its original structural state. It has some substantial remedial works but we again have to leave (?)..... our factory over the next few months as the result of further subsidence. But SIMEC have accepted liability and will be funding that project in the next couple of weeks.

They have funded smaller remedial works on our factory to date and will continue to do so, no doubt. While ever there are challenges with buildings and roads, etcetera in the local area resulting from mine subsidence and you observe and notice them, I would encourage – strongly encourage you to ask for SIMECs help to investigate and resolve the issue should it be determined that mine subsidence is the cause of the challenge. SIMEC are there to help so just reach out to them for their help. In favour of the Tahmoor South Project, we would like to highlight the fact that they would be one of the largest stable employment bases in the local area. It is an operation that has been supporting the local community since 1979. That's over 40 years. Nearly half a century. That's a long time to help sustain a local economy including 400 direct employees and contractor and on top of that the local suppliers and businesses including cafés, restaurants, fuel stations and retailers, etcetera.

It's not easy to put a definitive number on the impact – the negative impact that this would have on the local community should this project be rejected. I was at a local business council community forum a couple of years ago and one of the very alarming items on the agenda was the large amount of the employed population from this local area that travel outside of the area for work. I looked up the figures this morning and 66 per cent of the working community commute outside the Wollondilly Shire for work. Very disappointing for a local business owner but also for those that live locally. Is the Local Government being proactive, looking at approving and putting in place infrastructure and industrial development to provide employment locally?

It is very short-sighted to be approving and providing large housing developments without thinking about the long-term outcomes and objectives of not approving and providing industrial land .and (?).... developments. This narrowminded mentality is detrimental to the local community and economy. We understand there are objections to the Tahmoor South Project coming from housing land developers but

there'll be no need for housing if there's no employment in the local area. We need to be thinking smarter with long-term objectives on this whole housing and industry sector to support the people and community locally - ..... why we support any business providing employment locally which in turn supports the local community. If we don't support these initiatives, we will end up a ghost town. Thank you for listening.

MR BEASLEY: Thank you, Mr Quinsey. Next speaker we have is Chris Wilson.

MR C. WILSON: Good afternoon, Commissioners. My name's Chris Wilson. I live at 7 Remembrance Drive, Tahmoor. Directly below my dwelling is longwall number 28 from Tahmoor Colliery. Firstly, I'd like to say that I'm not against longwall mining because I earn a living from the coal industry as I have done for the last 40 years. Driven coal trucks in this area and I have seen a lot go through the industry. Secondly, what my main concern today is the damage that is caused by longwall mining directly below houses and the damage that it has done to our home for my wife and myself. We have been dealing with this since 2013. Subsidence Advisory New South Wales are responsible for the repairs to homes or properties that longwall mining has damaged.

Dealing with Subsidence Advisory New South Wales has and still been a complete nightmare for myself and my wife. The stress that it has put upon both of us should not be allowed to happen but Subsidence Advisory New South Wales do not care about it and make it very difficult to work with them. I could talk at great lengths of what they have done and what they have done to fix homes. Living in a home that is uneven, leaking bathrooms, cracks throughout the home, kitchen cupboards that are uneven and a floor that is at an angle, needs to be packed up and much more. Subsidence Advisory has said that longwall mining has caused the damage to our home and that they've stated they will fix the damage but by the time Subsidence Advisory look at the damage, prepare the paperwork and I have to engage a builder to fix the problem, compensation offer is always below what the marketplace has to offer to get quotes from tradies.

A lot of tradies will not deal with Subsidence Australia because of the prolonged process in which they take on because they know that Subsidence Advisory is a complete waste of time because they take too long or have to requote several times and tradies are not interested in the – what Subsidence Advisory have to offer. Once again, this puts great pressure on my wife and myself as to the outcome will be. Subsidence Advisory New South Wales inspectors when they look at the damage they give you a feeling that everything will be all right and you have great hope that your home will be fixed but when they put it in writing it's two different results.

Once again, we don't know where to turn to. All we can do is try and go back to Subsidence Advisory and they simply say no or will not return phone calls, emails and time goes on. This puts great pressure on the whole family living in a home that needs urgent repairs. At the moment we have completed stage 1. On this, it took six years to start and complete. After waiting some 14 months for stage 2 to start and I

have no idea when it'll be, this is extra strain for my wife and myself. Once again - - -

MR BEASLEY: When was your house built, Mr Wilson?

MR WILSON: 1988.

MR BEASLEY: And when did you - - -

MR WILSON: And it was built .to withstand (?) .... mine subsidence at that time.

MR BEASLEY: Right. And when did you first – when did the house first get some signs of damage from subsidence?

MR WILSON: 2015.

MR BEASLEY: And how bad were they in 2015?

MR WILSON: To give you an understanding, we had it internally surveyed and from one length of the house to the other it was out 114 millimetres.

MR BEASLEY: And that was causing – beyond cracking, what other issues was that causing for the house?

MR WILSON: Cracks in the bathroom, windows not level, cracks in the gyprock .....

MR BEASLEY: How big are the cracks? What – you know, a crack can be – look minor or are these substantial cracks?

MR WILSON: The cracks around the windows would be sort of like pencil line thin. The windows – the joints would be uneven. The cornices come away from the ceiling to the wall.

MR BEASLEY: Yes. And so that sort of commenced in 2015. What's the expectation for when the subsidence issues will have resolved so that the whole house can be repaired?

MR WILSON: That I can't answer because they're saying that the – from a geotechnical point of view it takes a minimum of five years for the ground to settle.

MR BEASLEY: Right.

MR WILSON: Subsidence Australia have started work in our houses on piers. We have gone on the outside and levelled it but now what has happened and it needs to be re-levelled again. This'll be the third time that it's been attempted to be re-levelled.

MR BEASLEY: And I'm guessing – I'm guessing that this is thousands of dollars of damage or is it in the tens of thousands?

MR WILSON: We – I have quotes at home from various builders, painters, etcetera, gyprockers up around the $200,000 mark at the moment.

MR BEASLEY: Right. Okay. Sorry. I interrupted.

MR WILSON: Plus they've already spent – no. That's okay. Plus what they've already spent on stage 1 which is just on 100,000.

MR BEASLEY: Right. Okay. Thank you.

MR WILSON: So we don't know when stage 2 is going to start nor when it'll be completed. We've – this is taking time and stress on the family. Subsidence tried to take shortcuts at the owner's expense and do not cover the correct work when this is to be done. Why should homeowners go through the aggravation, strain, stress and worry ..... burden. My wife is very house proud and likes to entertain but in the condition that the house is in at the moment she refuses to have anyone come into the home and this is very disappointing. It leaves us no social life to entertain at home. I have not got a tally nor counted the time, energy and days away from work at home on the phone, sending emails, talking to tradies. Like today, I'm not at work and this is at my expense. This should not be placed on families of today.

Subsidence Advisory should take the approach if it's broken simply fix it. The few people that I've spoken to about the effect of longwall mining and how long it takes for the ground to settle is a minimum of five years. This brings me to another point. How long before the ground settles, continual house movement, meaning that homeowners are continually dealing with Subsidence Australia – Subsidence Advisory for the years to come and bring complete misery to lives of many years. Once your home is damaged by mine subsidence, from a real estate point of view makes it very hard to sell because of the damage and this has to be declared on the point of sale meaning that the buyers are aware of what the damage has done to the house and they have two choices: they either walk away or the – or they negotiate with the owner at a reduced price, therefore, the owner takes a loss on the sale at a financial cost to the – for the repairs to be done and I'm talking hundreds of thousands of dollars in my case.

The only way to sell a home is to have the work carried out by a certified builder to the standards that they are licensed with. Subsidence Advisory New South Wales have started work on homes before the ground has settled like our home. This can be backed up from geotechnical expert. What I am saying is that homeowners will have to go through a lot of strain, get their home back to original condition because of longwall mining. It is my opinion that longwall mining should not go ahead under residential homes. Thank you.

MR BEASLEY: Thank you, Mr Wilson.

PROF FELL: I just wonder if I might ask one question and that is - - -

MR WILSON: Yes.

PROF FELL: - - - has the company helped at all in your problems?

MR WILSON: Which company is that, sir?

PROF FELL: Tahmoor Mine.

MR WILSON: No. None whatsoever. All I've dealt with is the Subsidence Advisory.

PROF FELL: Thank you.

MR BEASLEY: All right. Thank you, Mr Wilson. The next speaker we have Kathleen Wild from Doctors for the Environment Australia. Dr Wild.

DR K. WILD: Hello. Thank you, Commissioners. Can you hear me okay?

MR BEASLEY: Yes. Hear and see you.

DR WILD: Thank you. So my name's Dr Kathleen Wild and I'm representing Doctors for the Environment Australia which is a national non-profit organisation of Australian medical students and doctors committed to protecting human health with respect to the environment. I pay my respect to the first nations of where I stand today, that being the Wobagal people and also the Dharawal people of the Tahmoor South location. So we object to this project based on its risk to human health by reason of the effect that its operations will have on climate change and we believe strongly that any planning authority in New South Wales should take the impact of major projects on climate change into account when making approval and conditions for any project.

So I'm going to start with a few fairly incontrovertible facts. Climate change poses several significant risks to human health. The second fact is that climate change is worsened by greenhouse gas emissions and the third fact is that the operations of this mine lead to significant greenhouse gas emissions including an increase on the greenhouse gas emissions from its current operations of about 25 per cent in my last reading of the environmental impact statement. Now, it follows from that that the operations of this min through the greenhouse gas pollution will have a negative effect on human health and that to me is not something that should pass without appropriate consideration and approval and conditions based upon the proponent.

Some of the effects that climate change has on human health are by the effect it has on heat and in terms of occupation it should be noted that the risk to human health from heat decreases available worker hours in a lot of – a number of heat sensitive occupations and some global estimates have found that there has already been a 15 to

20 per cent reduction in available labour – daylight labour hours due to heat. It is simply going to become unsafe for people in multiple occupations including agricultural workers, labourers, couriers, anyone who may be exposed to heat to work in the manner to which they've been accustomed.

The Lancet in 2019 had an estimate that appropriate action for the costs of – health costs of climate change would outweigh the costs of addressing climate change by up to 1.45 to 2.5 times. So it's going to be that much more expensive to ignore the profound health cost that climate change has on our health. Now, with this project many – this – I believe this proponent and many other proponents of fossil fuel extraction projects in this state have made the argument that they should not be responsible due to the fact that their product is combusted overseas. To me, this relies on an interpretation of global greenhouse gas accounting standards that were not developed for planning authorities such as yourselves to measure the impact that these projects have on local communities. They were developed for international treaties and coordination of global efforts on climate change.

Your job is to assess the impact that this project will have on New South Wales and the local community. That impact includes the health effects of climate change from the product being burnt. Do we say that tobacco farmers are not responsible for cigarettes because someone else rolls them? Is the asbestos miner not responsible because someone else made the drywall? I think we need to accept that the people who are profiting from fossil fuel extraction bear some degree of responsibility from the effects from its combustion downstream. If there is going to be profit, there must also be responsibility. This is – effects in a variety of different ways and Doctors for the Environment endorses that we take action and responsibility where it is due for the health effects of greenhouse gas emissions due to their effect on human health. Thank you.

MR BEASLEY: Thank you, Dr Wild. The next speaker we have is John Nowlan from BlueScope Steel. Mr Nowlan, I think you're on the phone.

MR J. NOWLAN: Good afternoon, Commissioners. Yes. Today I'm going to cover - - -

MR BEASLEY: You might need to – I'm not sure quite what the problem is but we're struggling to hear you. We can hear you but the volume's very low.

MR NOWLAN: Okay. I'll - - -

MR BEASLEY: That's better. That's better. That's better. Yes.

MR NOWLAN: Yes. So it's John Nowlan from BlueScope. Today I'm planning cover five things: why the steelworks is located at Port Kembla. Basically, the three strategic reasons why it's here. The economic impact of the steelworks. Some facts about steelmaking at Port Kembla. The critical importance of local metallurgical coal supply from the Illawarra to our operations here and BlueScope's commitment

to addressing climate change. So on the first topic about why the steelworks is located at Port Kembla, in 1928 – so almost 100 years ago – the Hoskins family relocated from Lithgow for Port Kembla and the move was for three strategic reasons: (1) was the proximity to Sydney and access to the major east coast markets in Australia, particularly Queensland, New South Wales and Victoria for the steel product.

(2) was a deep sea working port to bring in raw materials like iron ore and fluxes and also to access global steel export markets and domestic markets by sea and the third reason was the quality of the local metallurgical coking coal supply in the Illawarra and the just in time delivery that provides operational efficiencies and reduced transportation costs and these three strategic legs and competitive advantages are still as relevant today as they were nearly 100 years ago and will continue to be for the future. They are the foundations for us remaining an internationally competitive steelmaker for so long and today I'd like to focus on the first point, the local coal supply and why it is critical to the future of steelmaking in the Illawarra. So the economic impact of the steelworks. In the Illawarra BlueScope's impact is quite striking.

The Port Kembla Steelworks, we directly employ over 3000 people and the multiplier on that means that there's probably something in the order of 10,000 highly skilled and well-paid jobs. Around 10 per cent of jobs in the region. That are contributed to by the steelworks. We provide 11 per cent of the gross regional product – that's about $1.6 billion – and 24 per cent of the region's total output at 6.5 billion and more broadly in New South Wales BlueScope accounts for almost one per cent of gross state product at 4 billion and supports about 19,200 jobs which is about .6 per cent of the FTE jobs in New South Wales.

There is no question that based on these numbers – and they've been provided by the Illawarra Regional Information Service in 2017 – that BlueScope and the steelworks is a important and significant economic contributor to our region and the state of New South Wales. But just to talk to a little bit about steelmaking at Port Kembla Steelworks, the site is 760 hectares and Port Kembla Steelworks is the largest manufacturing site in Australia. We produce just over three million tonnes of steel per annum and over 2.2 million tonnes of that production is processed and sold into the Australian domestic market. The balance of around 800,000 tonnes is exported with about half of what is exported going to our sister plants in the US and ASEAN and since 2011 we have operated a one blast furnace operation.

Over two-thirds of steelmaking technology globally uses the same route that we use, ie, a blast furnace and LD..... route with the balance using electric arc furnace using scrap steel and a small amount using direct produced iron. Our location and scale are significant factors in keeping us cost competitive. Just to talk about the importance of metallurgical coal supplies, we consume up to three million tonnes of coal per annum. So that's both coking coal and PCI coal or coal for pulverised coal injection. Over 80 per cent of this supply comes from the local Illawarra coal mines in the

southern coalfield and our operations have been optimised using the local coal ..... potentially, the Illawarra has four main coal suppliers.

They are South 32 with the Dendrobium and Appin Mines, SIMEC with the Tahmoor Mine, Peabody with the Metropolitan Mine and Wollongong Coal with the Russell Vale Mine and as you would be aware that the last two – that Russell Vale is currently not operational, has approval to recommence using a bord and pillar method and recently the Metro Mine has been placed in care and maintenance which just reinforces the importance of the approval of the Tahmoor Mine to maintain surety and competitiveness of local coal supplies. South 32 including its Dendrobium and Appin Mines supply about two-thirds of our coking coal requirements with the most recent rejection of . approval for the Dendrobium Mine. This effectively knocks out the newest, most efficient and lowest cost mine in the region and may place the total supply from South 32 in jeopardy.

Currently, coal is supplied on a just in time basis and we hold only one week's supply in coal beds onsite. The Port Kembla Steelworks is not configured to replace this supply via imports. We don't have the capacity currently to cope with the volume across our berths or the ability to stockpile the replacement volumes required. The proximity to the mines and the quality and unique combined blend of local coal has been a key component of our international competitiveness for nearly 100 years and the future success of BlueScope's Port Kembla Steelworks continues to rely on access to the competitive local metallurgical coal supply and having the right blend of quality coal required. These are fundamental foundations for the success of our ongoing operation.

I'd just like to talk about BlueScope's commitment to addressing climate change. BlueScope has climate change action and reducing its carbon emissions embedded in its new strategy. We have established a climate change council to address the challenge facing our industry. We understand the need to reduce carbon emissions and are actively working on ways of doing that both in the short-term and over the longer term. The prospects of breakthrough technologies like hydrogen and green steel are exciting but we recognise this technology and building industries to support them are possibly decades away from being commercially available at scale.

We are examining a raft of projects being ..... bolted on to reduce emissions further by deploying proven technology potentially as part of the blast furnace ..... later this decade. Since 2011 we have reduced our total carbon emissions by around 30 per cent as the result of a closure of one blast furnace and increasing the use of scrap in the mix to make steel. In the near-term we're committed to reducing our emissions intensity by a further 12 per cent through to 2030. Steel is vital in the deployment of renewable energy infrastructure and the use of steel worldwide is expected to grow by something like 30 per cent over the next 30 years. Currently, 23 per cent of the input to..... Port Kembla Steelworks raw steelmaking is recycled scrap and for cooling we use recycled water – 97 per cent of our cooling is either recycled water which is basically 20 megalitres of recycled effluent and seawater and 20 per cent of our electricity supply comes from renewables via our Finley Solar Farm power purchase agreement. We

also co-founded Responsible Steel with ArcelorMittal and have committed to the Port Kembla Steelworks being accredited in 2021.

So, in summary, we support SIMECs Tahmoor South proposed extension. The continuation of competitive and cost effective local quality metallurgical coal supply is critical to the future success of Port Kembla Steelworks. I've highlighted the significant economic impact of the steelworks not only on the Illawarra but on the whole of New South Wales. Local quality metallurgical coal supplies one of the three strategic legs and competitive advantages that the steelworks was established on at Port Kembla nearly 100 years ago and it is just as important today. BlueScope has addressing climate change at the forefront of its new strategy and is committed to continuing to reduce our carbon emissions. Thank you.

MR BEASLEY: Thank you, Mr – our next speaker is Peter Buckley fromNEPEAN Engineering and Innovation. Mr Buckley.

MR P. BUCKLEY: Good afternoon, Commissioners. Can you hear me?

MR BEASLEY: Yes. We can see and hear you. Thank you.

MR BUCKLEY: Thank you. Like I said, my name's Peter Buckley. I'm the general manager of NEPEAN Engineering and Innovation and today I'd like to provide my support to the Tahmoor South Underground Project both in my role as general manager of NEPEAN and also as a lifelong resident of the Wollondilly Shire and fifth generation farming family. NEPEAN Engineering and Innovation was founded in 1974 and today forms part of NEPEAN Group which is one of Australia's largest privately owned engineering and mining services and industrial manufacturing organisations. NEPEAN Engineering and Innovation has been a valued, sustainable and continual supplier for the Tahmoor Mine since it began its operations in 1979.

Our facilities here in Narellan occupy a 55,000 square metre workshop and support not only Tahmoor Mine but BlueScope Steel, the defence sector, scientific and the research and development sectors. Just this week we provided BlueScope Steel a large project for their hot strip mill which was involved in a upgrade for their line which again shows our commitment to local organisations. Today NEPEAN is a strong, diversified growing Australian-founded business with 29 operations or 29 operating businesses across five continents. Today we employ 1400 amazing employees and over 500 in New South Wales including many in regional areas. In the Wollondilly and Macarthur area we employ over 250 people and for NEPEAN Engineering and Innovation we employ over 120 people, many from the Wollondilly Shire. Our people are passionate and dedicated to our combined success.

We have sustained success through market cycles over 45 years and grown because of our customers, our employees and commitment to investment in projects that make a positive impact on our communities. NEPEANs continued sustainability as a business and continued job security for our valued staff is all reliant on the

continuation of sustainable projects in our local area, again, such as the Tahmoor South Underground Project. I have confidence in the Tahmoor South management team and respect their experience, consultative approach and compliment their determination to deliver a sustainable project for the community over the lifetime of the project.

This is a sensible project, in my opinion, that has been designed so our community can enjoy the continued economic boost the mine provides without negatively impacting other local industries and land uses and I speak, again, from the point of view of being a fifth generation farmer in the local area ..... continued benefit to the local community and New South Wales and from my perspective there are four main elements. Continued employment. The Tahmoor South Project will provide much needed continued employment for 400 plus people in the local and surrounding communities. Job creation. The project will mean 150 more skilled jobs in the local community not only during the construction phase but also benefiting many other businesses in the area. The local economy. The project will boost our local economy and help local business owners. It will support a wide range of local businesses throughout the construction phase and operation of the mine over the next 10 years.

Projects like this one will mean local businesses can make more investments, grow their operations, hire more people and keep workers, especially young people, in the region. Importantly for NEPEAN Engineering and Innovation, last year we proudly employed eight apprentices, two graduate engineers and this year we have already employed three apprentices and one graduate engineer. Without local customers and local projects our long-term sustainability could be in jeopardy. The economic benefits of the project will reportedly generate $664 million for the New South Wales State Government and local councils. This money can be used to upgrade regional hospitals, schools, roads and infrastructure and, again, as a lifelong resident of the area we need projects in our local community because our council cannot sustain or grow our shire.

Support the community organisations. As a local resident of the area, I'm aware that Tahmoor Mine has provided funding to many local community groups over many years. One project I am familiar with is the upgrade to the Picton Memorial Park. Anzac Day is a special and solemn occasion as my grandfather and grandmother both served with distinction in World War II. The investment in the past by Tahmoor Mine along with many other local businesses ensures that future generations can respect and honour our local heroes as without this generation donation and in kind support by Peter Vale and some of his employees, the contributions would not have occurred and the park would not have been upgraded by our council.

These benefits will make a substantial long-term difference to the communities of the Wollondilly and surrounding shires and New South Wales. I strongly believe our community needs a diverse economy and the Tahmoor South Underground Project can help make sure our economy continues to sustainably prosper. Thank you for the opportunity to present today.

MR BEASLEY: Thank you, Mr Buckley. Next speaker is – I apologise if I don't say this correctly – Florentino Chicharo from Globetech.

MR F. CHICHARO: Yes. That's correct. Well done.

MR BEASLEY: Thank you.

MR CHICHARO: I assume you can all hear me.

MR BEASLEY: Yes, we can and we can see you so please, go ahead.

MR CHICHARO: Well, good afternoon, Commissioners, ladies and gentlemen. My name's Florentino Chicharo. I'm the managing director of Globetech. Globetech provides services to Tahmoor Colliery. We have an ongoing relationship that spans over 15 years. Based on our experience with Tahmoor, its management of personnel will support this project. Globetech provides services such as electrification design, software design, programming automation systems, construction services, equipment maintenance and switchboard manufacturing. We employ some 36 full-time personnel with additional casual labour as required. The majority of our personnel are qualified electrical trades and professional electrical engineers. Globetech's business is made up of regular ongoing customers as well opportunistic projects from government and industries that may happen from time to time.

Repeat business sets the foundation of our company – for our company and Tahmoor is consistently within our top 10 to top 5 customers annually. We have people every day of the week either on – at Tahmoor site or offsite in our offices and workshop planning for the next lot of work. We have all seen that established businesses, especially in manufacturing, have been diminishing in our region for a number of decades with little development of new or replacement industries to our once stable base. The consequences of Tahmoor and other businesses moving on or shutting down in the region is of serious concern to us all. We, however, understand that industries that cannot meet the brief of sustainability and minimising impact to the environment long-term need to be challenged to find ways to do so. To that end, Globetech is a leading technology provider to Tahmoor and over many years we have worked on a number of important environmental projects on this site.

These have included site water consolidation, water discharge projects, automation of dust suppression systems, water treatment plants and methane gas extraction. In working on these environmental projects with Tahmoor, we always found that Tahmoor personnel and management are clearly focused on achieving the environmental outcomes that they have agreed to. Some 13 to 14 months ago fire ravaged through the area and a number of assets were damaged including equipment associated with site water consolidation system. Globetech was approached by Tahmoor within days of the site being made safe to provide an emergency team to rectify and replace all equipment that was damaged and recommission the system.

Over the last six years Globetech has been a key member associated with monitoring and modelling of subsidence in underground mining in the Illawarra (?).....area. Our role focused on monitoring the southern rail corridor, the main passenger line and commercial long haul line between New South Wales and Victoria. The monitoring covered over five kilometres of rail including hundreds of sensors positioned on the rail line and surrounding area. A unique process of monitoring ..... was implemented. Specific sensors were installed, collecting and storage data system installed along with robust field equipment for a challenging environment. Several layers of system ..... so as to minimise or eliminate data loss and systems to analyse and model the data developed. The unique signature of the normal day-to-day rail movement was established so that abnormalities could be filtered out and detected.

Globetech provided technology and support for this system, the regular maintenance of sensors, the replacement of damaged sensors, on call personnel to provide a one hour response which is a 24/7 every day of the year requirement from rail ..... the collected data and subsequent analysis provided the basis for early planning and maintenance and rectification works before serious issues developed or any disruption of the ..... schedules was experienced. As Peter Vale stated, this was a unique, award winning project, a national and international best practice project not seen on such a scale before. From my understanding, the expansion to the southern domain will include the implementation of the same system, well proven development in the northern domain. Globetech would be happy to assist and provide support and resources to implement a similar system in the southern domain should it be approved. This will provide ongoing business opportunities with companies such as ours should the project be approved. Thank you for your time.

MR BEASLEY: Thank you. Next speaker is Keith Dunbier from Trazblend. Are you there, Mr Dunbier?

MR K. DUNBIER: Yes, I am. Good afternoon, Commissioners. Can you hear me?

MR BEASLEY: Yes. Can see you as well. Go ahead.

MR DUNBIER: Very good. Good afternoon, Commissioners, ladies and gentlemen. I am the managing director of Trazblend. My association started at Tahmoor in the late seventies as an apprentice. My roles have been mechanic, dozer driver, truck driver and now managing director of a family business. Trazblend is a supporter of the mine application for the Tahmoor South Project. The Tahmoor Mine operation is a key part of the Trazblend business and its employees and suppliers are dependent on the mine for the livelihood going forward. The Tahmoor Mine operation has become over the last 40 years a very significant part of the Trazblend business. For 40 years we have served the site. The founder of our – of the Trazblend Group, Max Dunbier, my father, went to the opening of the mine in 1981 and was a key supporter of the mine.

The Trazblend family – Trazblend is family owned and operated business based in the local area and nearly half of our staff and directors live in the Wollondilly Shire.

Tahmoor Mine treat their employees and contractors as part of the SIMEC Group as does our family business treat its employees as part of our family which in today's business world is something to be proud of. Tahmoor also contributes significant royalties and taxes back to the State and Federal Governments which support thousands of jobs outside our local area. Service Trazblend perform for the Tahmoor Mine include coal ..... emplacement, steaming coal transfer for export, magnetite supply to the washery which we recycle from another site, rehabilitation services and hire of equipment.

Trazblend related party services also supplies fit to port logistics for the coal shipment and train coordination of the Tahmoor Mine. The annual turnover from our services to the Tahmoor Mine is $1.4 million per annum average. We have nine staff directly associated with the Tahmoor Mine operation. I would like to thank the Commission for this time today to put our case forward. Thank you.

MR BEASLEY: Thank you, Mr Dunbier. Next speaker we have is John Matheson who's from Tahmoor Coal SIMEC. Mr Matheson.

MR J. MATHESON: Good afternoon. I'll just do a sound check at your end. Hopefully, you're not overwhelmed.

MR BEASLEY: No. We can hear you very well. Thank you.

MR MATHESON: Excellent. Well, let's hope it keeps that way. Thank you for the opportunity to present today. Before I start, I note that I'll periodically mention Tahmoor Colliery. This is synonymous with SIMEC Mining and JMA is a supporter of the Tahmoor South Project. JMA Solutions or JMA in short is a specialist consulting engineering firm that's been working in the field of mine subsidence impact on structures since 1993. The firm is affiliated with Engineers Australia and the Association of Consulting Engineers of Australia. I myself am a chartered professional consulting structural and civil engineer. I have extensive experience in the design and construction of buildings, bridges, roads and drainage systems in Australia and South East Asia.

I've been involved in a number of research projects individually and collaboratively including the design and construction of a residential building for the University of Newcastle way back in 1993 which was tested for the impact of mine subsidence under the guidance of the then Professor Adrian Page. I've been involved in a number of other subsidence studies on the impact of mining on rail and road infrastructure both individually and collaboratively for Tahmoor Colliery. I've worked on the assessment of mine subsidence impacts on residential, commercial, education and institutional projects and buildings, public rail and road infrastructure in the Tahmoor and Picton area since 2000. So this goes back some years this involvement with Tahmoor.

JMA is an active member of the Tahmoor SRG which manages the impact of subsidence on residential building structure and the RMG which is the Rail

Management Group which manages impact on the Main Southern Rail. The company has been contributing to the development of structure management plans where structures are at risk of mine subsidence impact. We've worked with other specialist engineering consultants in Tahmoor to evaluate the impact of mine subsidence on a number of railway bridge overstructures and in some cases we've recommended that some of the older infrastructure actually be replaced with structure which has been generally to the benefit of the community.

In one case we were able to realign a road by constructing a pre-stressed concrete overbridge on elastomeric and slide bearings to enable some ground movement to occur and we were able to realign that road to improve road safety and improve vehicle speeds in that particular area and in another case were able to design a new steel bridge structure which included pedestrian access across the Main Southern Railway. So we were able to get away from pedestrian crossing, which was a benefit, I think, to the community. When residential and commercial building structures have been impacted by mine subsidence, we've been commissioned to design relevelling procedures for structures and also design and implement repair plans for building structures. So we've got quite a wide ranging background and experience there over 20 years.

Tahmoor Colliery has increasingly become a major customer of our company. Whilst not the only company, it provides a significant proportion of our company revenue and our company provides employment to some family members and I feel that if the Tahmoor South Project doesn't proceed – if it's not approved – it would have a very direct and significant impact on our business and, you know, consequentially revenue stream. But it's not just our family would be concerned about. We have neighbours in Tahmoor and Picton that we've kind of got to know over the years and the picture looks fairly bleak for them if Tahmoor South is not approved and to that end I've done a bit of sleuthing on this and I refer to you a report that was presented in May 2017 for the International Institute for Sustainable Development and it was titled the End of Coal Mining in South Wales, not New South Wales, Lessons Learned from Industrial Transformation and I note the following points and I'll try and keep it brief because I know this is going to drag on a bit but the original policy objective, to generate new business and employment throughout the Welsh Valleys have not succeeded in counteracting the loss of employment or staunching overall population decline and that is a concern because the communities were built largely around – dependent upon mining for economic and social prosperity.

The communities were vulnerable to the changes and the economic realities once the mines were closed and interestingly enough whilst there was inward investment directed towards the valleys, it didn't end up getting spent in the valleys. It ended up being spent on the coast and not where it was really needed and although there were opportunities opened up for women and younger men such was their experience, new roles for the miners seemed to be few and far between. So I have grave concerns in the longer term about the resilience of the local community if the mine was not actually approved to go to Tahmoor South and given there's only one colliery in

Tahmoor, I can well-imagine that the economic decline could be significant over the longer term.

Now, closure of the mine would impact State Government revenue. That may be a concern for some. I imagine it would have a direct impact on things like the demand for new housing in the area if there is a significant economic impact on the local community. From the point of view of coking coal, some of the issues that I do hear when I'm out and about, I note Tahmoor Colliery produces a particularly high grade of coking coal for manufacture of steel domestically and overseas and I note in an ABC Fact Check from 27 November 2015 that, essentially – I suppose I'll have to sort of mention some names here, but essentially Fact Check finds that the focus is really on thermal coal.

That there is no greenhouse issue around coking coal because there's no other way of making steel and I think that's where we're at, really, and further sort of research on alternatives indicate that we're a long way off having a viable – from a perspective of manufacturing steel and being financially viable, we're now seeing a number of the major manufacturers talking about getting into alternative technologies. We're still a long way off and there are only pilot plans in train and some of the majors like ArcelorMittal, Nippon Steel, POSCO, ThyssenKrupp, it's all very early days of looking at using hydrogen to manufacture steel. Some of the technologies or pathways to zero emissions seem to be avoid the use of carbon dioxide by way of hydrogen or carbon capture and sequestration.

Both of these technologies, whilst being piloted, have not been implemented at scale and not been proven commercially at scale as of end of 2020. I note in the production of flash iron making, you know, we're talking using hydrogen and carbon monoxide which is produced from natural gas so we still have a dependency on fossil fuel even with some of those technologies. So, in summary, I find that – concern with the lack of an alternative form of manufacture that it still requires us to supply high grade coking coal to the steel manufacturing industry. If the local economy and world economy's going to continue to grow at a pace that is sustainable and for that reason I recommend that the Tahmoor South Project be approved. Thank you for your time. I'm sure there's many to follow me in their submissions.

MR BEASLEY: Thank you, Mr Matheson.

PROF MACKAY: Well, may I thank all of those who have made presentations to the Commission through this afternoon's proceedings. The Commission will now take a short afternoon adjournment and we will reconvene at 3.25 pm Sydney time. So we shall look forward to seeing participants back online at 3.25 pm, please. Thank you.

RECORDING SUSPENDED **[2.54 pm]**

RECORDING RESUMED **[3.23 pm]**

VIDEO SHOWN

PROF MACKAY: Well, good afternoon, and we will re-resume the day 1 of the Independent Planning Commission's online public hearing into the State Significant Development application for the Tahmoor South Coal Project SSD 8445. Mr Beasley.

MR BEASLEY: Yes, thank you. We have Matt Floro, who's a senior solicitor at the Environmental Defenders Office, who's representing Undermined Inc. Mr Floro.

MR M. FLORO: Afternoon, Mr Beasley and Commissioners. Can you hear and see me okay?

MR BEASLEY: Yes, all good. Go ahead, please.

MR FLORO: Thank you. I will share my presentation on the screen. Can you see that?

MR BEASLEY: Yes. Thank you.

MR FLORO: Commissioners, I acknowledge the Dharawal People, traditional custodians of the land on which the project is proposed, and pay my respects to their elders, past, present and future. I'm instructed to make this submission on behalf of Undermined Incorporated. Undermined is a community action group formed to address concerns about damage caused by longwall mining in the Wollondilly Shire. It is Undermined's case that the project should be refused development consent on the basis of, amongst other reasons, the project's climate change impacts and the project's subsidence impacts.

Firstly, the project will cause unacceptable harm to the environment through the generation of scope 1, 2 and 3 GHG emissions over the life of the project. The impact of the project's emissions has been significantly understated by the proponents in the context of the urgent need to reduce GHG emissions and adopt alternative technologies, such as green steel. In relation to subsidence, the project will cause unacceptable subsidence impacts on the infrastructure of Bargo and a number of tributaries to the Bargo and Nepean Rivers. Fundamentally, Undermined submits that the environmental and social disbenefits of this project outweigh its purported social and economic benefits. The project is not in the pubic interest, and consent must be refused.

Commissioners, my oral submissions today will focus on the legal framework governing the project's climate change impacts. EDOs written submissions on behalf of our clients will provide further detail, including regarding green steel tech,

groundwater and subsidence. In this respect, I acknowledge the independent experts engaged by EDO on behalf of Undermined: Professor James Goodman, UTS, on climate change; Mr Tony Wood, Grattan Institute, on green steel; Associate Professor John Pye, ANU, on green steel; and Dr Philip Pells on groundwater and subsidence.

Commissioners, climate change is a diabolical policy problem, as Professor Ross Garnaut said in 2009. It is our client's case that the approval of the project at the current time is not in the public interest and contrary to the principles of ESD; in particular, the principles of intergenerational equity, the conservation of biological diversity, and the polluter pays principle. We note that the IPC will hear from experts, including Professor James Goodman and Professor Penny Sackett on climate science and the project's impacts on GHG emissions and climate change, although we note that Professor Sackett is not engaged by our client on this occasion.

It is our client's submission, Commissioners, that the effects of carbon in the atmosphere arising from the activities at the site and the burning of the coal extracted from the development are inconsistent with a carbon budget and internationally agreed policy intentions to keep global temperature increases to well below two degrees Celsius above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels. In light of that projected substantial cumulative environmental harm and the critical importance of combating climate change now, the project must be refused consent.

Commissioners, there are three statutory pathways under the Act by which the IPC must have regard in relation to the impacts of the project on climate change and which permit the IPC to refuse the development on this ground. Firstly, section 4.15(1)(a) requires the Commission to take into consideration the Mining SEPP, and clause 14(2) of the Mining SEPP requires the Commission to consider an assessment of the GHG emissions, including downstream emissions, and must do so having regard to any applicable state or national policies, programs or guidelines concerning those emissions. We note that clause 14(2) makes an assessment of scope 1, 2 and 3 emissions a mandatory relevant consideration, and, further, in the recent LEC decision in KEPCO Bylong, Pain J held that the New South Wales climate change framework is an applicable policy for the purposes of clause 14(2). And that framework states that the New South Wales Government's objective is to achieve net zero emissions by 2050, and the New South Wales Government endorses the Paris Agreement and will take action that is consistent with the level of effort to achieve Australia's commitments to the Paris Agreement.

The second pathway is section 4.15(1)(b), which requires the IPC to take into consideration the likely impacts of the proposed development, which, of course, include environmental impacts and, therefore, climate change impacts. The third pathway is section 4.15(1)(e), which requires the IPC to take into consideration the public interest which has been held to include the principles of ESD. In turn, the court has held that the principles of ESD, particularly the precautionary principle and the principle of intergenerational equity, require consideration of climate change

impacts, which include scope 3 emissions. It's important to note that the objects of the Act include to facilitate ESD through the integration of economic, environmental and social considerations, and to promote the social and economic welfare of the community and a better environment, including an opportunity for community participation in assessment. Undermined's - - -

MR BEASLEY: Can I just ask you a question there, Mr Floro?

MR FLORO: Yes, Mr Beasley.

MR BEASLEY: One is when Mr Eden was making his submission, he had on a slide scope 1 and – you may come to this – scope 1 and scope 2 are about 28 million tonnes of CO2 and, in a question, I implied that he might have been wrong about that. He's actually – he's not. I was looking at a report that was out of date, and there's almost a footnote in the assessment report about scope 1 and scope 2 emissions, and there's an updated report form the applicant for the mine that shows that scope 1 and scope 2, unabated, at 28 million tonnes, and scope 3, about 65 million tonnes. First thing I just wanted to ask you about that is that on its face, that – there seemed to be quite a lot of scope 1 and scope 2 emissions associated with this proposal, but also, I'm wondering if, in terms of the legislation, the Planning Act – and you referred to 4.15. I'm wondering whether 4.15(1)(c), suitability of the site for development, has any role to play here, given this seems to be a very gassy mine with quite a lot of methane.

MR FLORO: That would be in our client's submission, Mr Beasley, particularly in relation to the subsidence impacts, and in terms of the scope 1 and 2 and 3, I will address those shortly.

MR BEASLEY: Sure. Go ahead.

MR FLORO: Thank you. So it's our client's submission, Commissioners, that the IPC would, in considering the climate science, which I will get to in a second, against the text, objects and context of the EP&A Act, that the Commission would refuse consent to the project. Now, the Rocky Hill case, our client submits, should be given substantial weight by the Commission. As Commissioners will be aware, climate change was a significant factor in the refusal of consent to that mine, and in that case, Chief Judge Preston said that the project will be a material source of emissions and contribute to climate change, that approval of the project will not assist in achieving the rapid and deep reductions in emissions needed, and that must equally apply, in our client's submission, to the current project.

In particular, Chief Judge Preston set out an approach for the assessment of the environmental impacts of a fossil fuel development in absolute or relative terms. His Honour said:

> *In absolute terms, a particular fossil fuel development may itself be a sufficiently large source of emissions that refusal of the development could be*

seen to make a meaningful contribution to remaining within the carbon budget and achieving the long-term temperature goal.

In relative terms, similar-sized fossil fuel developments with similar GHG emissions may have different social, environmental and economic impacts. Other things being equal, it would be rational to refuse fossil fuel developments with greater environment, social and economic impacts than fossil fuel developments with lesser such impacts. It's our client's submission, Commissioners, that Undermined – that the environmental impacts of the project are sufficiently adverse in both absolute and relative terms to warrant refusal of consent.

And going to Mr Beasley's comment earlier, we note that the assessment report estimates that the project would generate around 28 million tonnes of carbon dioxide equivalent scope 1 and 2 emissions, with scope 3 emissions modelled to produce around 66 million tonnes over the life of the project, and that amounts to approximately 94 million tonnes over the life of the project. You can see on the screen, by comparison, the Rocky Hill Coal Mine was predicted to produce only 37.8 million tonnes from scope 1, 2 and 3 emissions in total over the life of the mine. This is a significantly smaller amount, and yet in the Rocky Hill case, those emissions were considered sufficiently grave to provide a further reason for rejection of consent. Commissioners will be aware that the scope 1 - - -

MR BEASLEY: The relativity with Rocky Hill was, what, also considering the visual and social impacts, was it?

MR FLORO: That's right.

MR BEASLEY: Yes.

MR FLORO: And it's our client's submission that in addition to the other range of impacts for this project, subsidence is another sufficiently grave relative impact.

MR BEASLEY: There was no subsidence issues for houses, was there, with Rocky Hill? I don't think there was.

MR FLORO: No, because Rocky was in an area without houses.

MR BEASLEY: Yes.

MR FLORO: So Commissioners will be aware that the scope 1 emissions from the project are the highest of any fossil fuel development considered by the IPC. This is a gassy mine, as was described earlier today during the hearing, and by comparison, the recent refused Dendrobium project had a projected 17 to 22 million tonnes of scope 1 emissions. The claim that the emissions over the life of the project would only represent approximately .65 per cent of total emissions for New South Wales and 0.2 total emissions for Australia is disingenuous, with respect, particularly regarding the emission of scope 3 emissions. And fundamentally, Professor Will

Steffen said in the Rocky Hill case that all emissions are important and contribute cumulatively to climate change.

MR BEASLEY: But your – sorry. Your submission, if the Commissioners are to understand it correctly, is that just on absolute terms, the extent of the scope 1, scope 2 and scope 3 emissions associated with this project are sufficient alone to justify refusal. Is that right?

MR FLORO: That's correct, Mr Beasley, and if that submission isn't accepted, our submission is that on relative terms - - -

MR BEASLEY: Then you move on to relativities from there.

MR FLORO: Yes, correct.

MR BEASLEY: Yes. All right. Understood.

MR FLORO: Correct. And the relative basis for refusal, I remind the Commission, was used by that Commission in the Bylong matter. So if, Mr Beasley, I may have several more minutes to conclude - - -

MR BEASLEY: Sure.

MR FLORO: So if the IPC were minded to grant consent, although we note that our client opposes the granting of consent to this project, Undermined submits that the project's total 1, 2 and 3 scope emissions must be offset such that the project is carbon neutral. We draw the Commission's attention to clause 14(1) of the Mining SEPP, which applies to the project, and it requires the IPC to consider whether or not consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner, including conditions to ensure that GHG emissions are minimised to the greatest extent practicable. And, of course, by clause 14(2), downstream emissions are a mandatory relevant consideration. Undermined submits that if the IPC were minded to grant consent, any consent should indeed be issued subject to conditions that ensure GHG emissions are minimised to the greatest extent practicable.

And it's clear, Commissioners, that from clause 14(1) and (2), the IPC does have the power to impose conditions regarding carbon offsets. Indeed, in Hunter Environment Lobby Incorporated v Minister for Planning [2011] NSWLEC 221, Pain J found that the proposed conditions requiring the offset of scope 1 emissions were lawful, while not deciding as to the lawfulness of scope 2 or 3 emissions.

MR BEASLEY: That got overtaken, didn't it, by what Mr Abbott called the carbon tax. Her Honour didn't have to – she was – I mean, the scheme's gone now, but it was coming in, which is why she did what she did in that case.

MR FLORO: Yes, that's right, Mr Beasley, and I note in Hunter Environment Lobby v Minister for Planning (No 2), it was decided that the Gillard Government's scheme covered the proposed condition - - -

MR BEASLEY: Yes.

MR FLORO: - - - and, yes, therefore the condition didn't have to be imposed. But we note that that scheme no longer exists.

MR BEASLEY: Yes.

MR FLORO: So just to wrap up in terms of our submissions on offsets, it is clear that clause 4(1) and (2) do provide the IPC with that power, and we note that in the Rocky Hill case, the Chief Judge said that what the applicant might do is, perhaps, commit to reducing the emissions by deploying emission reductions technology, such as CCS, or offsetting the emissions of the development by increasing the removal of emissions from the atmosphere, by establishing sinks. This is not proposed, we note, in this particular project.

MR BEASLEY: How do you say the Commissioners should approach Rocky – I mean, it's a merits decision, so it's not a precedent, as such, but you say the reasoning process that Chief Judge Preston went through is that it can be used and should be used in an analogous fashion by the Commissioners here.

MR FLORO: Yes, Mr Beasley. It should be given persuasive guidance to this current project. It's not binding, but - - -

MR BEASLEY: Yes.

MR FLORO: - - - of course, persuasive. And more recently, in the IPCs decision to refuse consent to the KEPCO Bylong Coal Mine, the Commissioners in that matter noted the KEPCO had not proposed any GHG offset measures. So the Commission is changing its approach to these issues, which is good to see, from a legal perspective. So it's our client's submission that in the context of that urgent need to reduce emissions to keep within a safe global carbon budget, a condition that requires a project to be fully carbon neutral would, on a reasonable view, be meeting that requirement to minimise emissions to the greatest extent practicable, and it would be an unreasonable reading – sorry, I missed you there.

MR BEASLEY: That wasn't us.

MR FLORO: Sorry. I will just start again. It would be an unreasonable reading of clause 14 of the Mining SEPP for the IPC to conduct a mandated consideration of scope 3 emissions, yet do nothing whatsoever about them in any development consent. Although scope 3 emissions, like scope 2 emissions, may not be able to be entirely controlled by the applicant, they will almost certainly result from the project. And further, according to the assessment report, a significant proportion of the scope

3 emissions will be emitted in New South Wales by BlueScope Steel. Scope 1, 2 and 3 emissions will cumulatively impact on the New South Wales environment, and the EP Act regulates the impacts on the New South Wales environment.

And in terms of the jurisprudence, HEL v Minister, in that case, there was a discussion of the tests for planning condition validity, and Undermined submits that the proposal to make this project carbon neutral or to impose conditions regarding carbon offsetting of 1, 2 and 3 scope emissions would meet those tests for planning condition validity not only in that case, in the HEL v Minister case, but also from a Newbury test perspective. In the alternative, if the IPC were not minded to impose a condition requiring full carbon neutrality, Undermined submits the IPC could reasonably impose a condition requiring carbon neutrality insofar as any scope 1, 2 and 3 emissions are emitted in this state.

Such emissions would fall under the IPCs state-wide jurisdiction and could be reasonably and fairly regulated by New South Wales Government authorities, including the EPA. In fact, the nature of any SSD proposal requires that the EPA grant an EPL, an environment protection licence, that is substantially consistent with the development approval. Commissioners, Undermined concludes that the proper consideration, weighing and balancing of the environmental, social and economic impacts of the project lead to a conclusion that the project isn't in the public interest and is contrary to the principles of ESD. Commissioners, the project must be refused consent.

MR BEASLEY: Thank you, Mr Floro. I take it you're going to send in a written submission in due course.

MR FLORO: Yes, Mr Beasley.

MR BEASLEY: Thank you very much.

MR FLORO: Thank you very much.

MR BEASLEY: Next speaker, I think, is Professor Tony Wood, also for Undermined.

MR T. WOOD: Thank you very much. For the record, I should point out that I do not have an academic role at the university and not "professor", so - - -

MR BEASLEY: Sorry. I've given you a promotion.

MR WOOD: - - - I think you have the presentation. Yes, I've got a – this is a short presentation which goes to the question of the green steel opportunity; in particular, based upon a piece of work that we published in the middle of last year. It arose from several things, not all of which are directly related to the interests of your hearing at the moment. However, it does go to the heart of an issue which is to do with, on the one hand, achieving net zero emissions in this country at any time soon,

and you would be aware that both sides of federal politics now seem to be committed at least to the principle, if not the speed of achieving that objective, but more importantly, in the case of this piece of work, goes to the question of the extent to which our emissions – activities in Australia contribute to global emissions and the fact that the decisions about the future of those sectors will be more likely determined in countries other than in Australia.

So what we identified based on the economics is the potential for green steel manufacturing to be a significant opportunity in a low-carbon world. Go to the next slide, please. The – and I will come to each of these in turn. We've identified that there are a number of Australian communities, not the least of which is the Illawarra, where there is a significant number of workers who are exposed to long-term reduction in carbon-intensive activities, that Australia, in a low-emissions world, courtesy of the nature of our renewable energy resource, has the potential to have a comparative advantage. Whether we can turn that into a competitive advantage remains to be seen. But steel, on the basis of the economics, seems to be the best opportunity. There are different ways or different pathways under which green steel could replace – let's loosely call it black steel, and that of the regions in Australia where this could be an opportunity, the Illawarra is certainly one. Next slide, please.

So this point just basically puts the jobs issue in context. So while there are a very large number of jobs in central Queensland, as you will see, there's only a small number of regions in the country where you've got this concentration of carbon-intensive jobs, and these are jobs that, therefore, will be subject to a low-emissions future in different ways. Australia, as you would know, produces significant amounts of both thermal coal and metallurgical coal, and, in particular, the east coast of Australia exports a significant amount of coal as metallurgical coal. There's a tendency at times to almost discount that on the basis that we will be using – the world will be using metallurgical coal for a long, long time, but I guess the thesis in this report was that that long, long time may not be as long as some people would like to think.

The next chart just illustrates that of the regions of the world where the primary source of this comparative advantage would be a combination of wind and solar energy in an area with a relatively small population, Australia fits that bill rather nicely. We've got a very significant wind and solar resource. They can – in many situations, they're not correlated. That means that some parts of Australia, there's a decent wind or solar resource, and other parts, there's not at the same time. And secondly, that relative to our population, the use of that energy for things other than electricity in this country would seem to represent a significant opportunity. Next slide. Can I have the next slide, please.

This one just illustrates that the various difficult to de-carbonise sectors in our economy – these are sectors that, in Australia and elsewhere, contribute to significant greenhouse gas emissions. Why we think steel becomes somewhat interesting when you look at the economics. And this basically says a lot. Steel produces about seven per cent of global emissions. It's a very significant market. The reason that number

is projected to go down somewhat between now and 2050 is because the most likely – the increasing percentage of recycled steel going into the production of final steel. But you will see there that some of the other sectors which are difficult to decarbonise and which we've also done some research don't offer the same number of opportunities, or they face some other interesting barriers that would make them less attractive to Australia as an opportunity. The next slide, please.

So on the economics, the first bit is about the potential. On the economics of where things sit, some of you may have heard the Prime Minister talk at some length, as has the – Australia's Minister for Energy and Emissions Reduction, Angus Taylor, talk about the cost of hydrogen. The fundamental issue of producing green steel is to replace metallurgical coal with hydrogen in the process, and the issue that arises, not surprisingly, is how much more expensive is that likely to cost. And the answer today is a fair bit. So if you look at these two charts, this is just comparing the potential interest in steel versus ammonia, but in particular, this chart is basically the premium that we would expect to have to pay for the green versus the black. And you can see that hydrogen, at $3 a kilogram, that premium will be about 60 per cent, and if you can get down to $1 a kilogram – this is US – it would be about 20 per cent. And in the middle of that is where the current government's target would be.

Now, the technologies behind this are well known. The production of steel using hydrogen is well known. In some parts of the world, it's done commercially, even though the hydrogen has not come from renewable energy. It's this chart that tells us, in our view, that the economics for producing steel from hydrogen and renewable hydrogen are looking at least worth pursuing very vigorously from an Australian perspective. And more recently than this report, only in the last few weeks, you may have seen media coverage of the announcements that Twiggy Forrest has made in relation to putting serious amounts of money into developing a green steel manufacturing facility in Western Australia. So the underlying economics would seem to be in favour of moving towards green steel as the world starts to look for, prepare to pay for and demand low-emission steel. And we're already seeing some aspects to that in some sectors in some parts of the world. The next slide, please.

This slide basically looks at the underlying process, and one of the questions is whether or not Australia would be better to basically convert the iron ore into iron and then export the iron to other countries, or whether it would make sense for Australia to take that right through to the final steel product. Now, that depends upon – the last bit depends upon the relative economics of the country to which we are exporting the material, but the underlying thesis is that by comparison with mining, iron ore and metallurgical coal, and sending both of those overseas in ships, iron ore certainly remains interesting, but the problem – but the challenge is – would be to send hydrogen overseas in ships. Now, it can be done. It can be transported as hydrogen with ammonia. But in our view, the economics would suggest it's far more economically viable to combine the iron ore with the hydrogen.

In Australia, that could then mean – in some countries, it might be more sensible to export the iron, or sometimes called pig iron. In other cases, it might be more

economic to produce the final steel product. But what this is saying is it starts to get very interesting again, based upon the underlying economics. And it's that fundamental point that transporting hydrogen is a far less attractive idea than transporting metallurgical coal. Now, the next slide, please. This is a simple way of taking that previous slide, those pathways, and looking at what the economics would look like in different countries, depending upon which pathway we were to take, and you can see here that if you look at Japan – if the hydrogen costs $2, then at the moment it would seem to us more economic to export the steel to Japan than to export hydrogen and have the Japanese convert that hydrogen in Japan.

I guess it's somewhat – it's not obvious, because there are some things that can be done in Japan in relation to renewable energy, but they do not have that renewable energy resource that Australia has. And equally, the economics change a little bit. The benefit – opportunity for doing this economically attractively in Australia does not at least look so attractive for Indonesia, but it's line-ball, and, of course, these – the numbers we're talking about here are not considered to be precise. They're indicative, but they certainly, in our view, indicate a direction. The next slide, please.

Now, this slide is not only the Illawarra; this slide is looking at the potential that could be achieved if we were to seriously expand green steel manufacturing. And so the issue is that green steel manufacturing has – on the basis of the economics, it looks interesting. It could replace metallurgical coal as a source of income for Australia, it could replace metallurgical coal as a source of emissions for the environment, and it could also replace coal as a source of jobs. And those three, it seems to us, provide both the economic and the political reason why this is worth pursuing. To put it into scale and to say is this in any way realistic, this slide attempts to have a look at that and says, look, we currently have something like 40 per cent of the world's traded iron ore market. We have about one per cent of the world's steel market. Given what we've done in LNG exports in the relatively short number of years off the east coast of Australia, it's certainly not infeasible to suggest we could do the same thing and scale up green steel manufacturing, and these numbers just illustrate that a relatively modest share of the global steel market could be captured, and that would create a significant number of jobs in orders of magnitude the same number of jobs that we see potentially moving if the rest of the world starts to demand green steel and we haven't taken advantage of that opportunity. And the next slide, please.

So what does this mean? It seems to us that there are basically two phases in terms of technically what could happen. We are currently in this first phase, where we have, arguably – I know we would certainly see this as an uncertain but interesting market opportunity. There is a role for government policy. Our focus should be on the technical engineering aspects of this, and that's where the Commonwealth Government's focus on technology is important, but the scale of the early commercial development means it looks to be quite challenging. Subsequent to that first stage, then you start to look at a market emerging as other parts of the world either impose some form of liability or provide some incentive for turning from black

steel to green steel. There are other colours of steel, as I'm sure some of you would be aware, but they involve different pathways and higher emissions. And the final slide, please.

PROF MACKAY: Just before we do, Mr wood - - -

MR WOOD: Yes.

PROF MACKAY: - - - could we stay on that previous slide?

MR WOOD: Indeed.

PROF MACKAY: It's Professor Mackay speaking. Look, thank you for this informative presentation. Could I just ask in terms of relating this presentation to the matters that are before the Commission, are you suggesting that in light of these opportunities, there is no reasonable demand need for the Tahmoor South Coal in terms of the mix of coking coal that's currently available within the Australian context?

MR WOOD: That's an issue we have not directly addressed and did not in this work. What is clear is that those who would suggest that there is an almost unlimited demand for coking coal are almost certainly wrong. How quickly the shift from the use of coking coal to other ways of producing steel emerges is very difficult to say. There is clearly – I think the risk that needs to be recognised is that - - -

PROF MACKAY: What are the best estimates in terms of timeframe for developing a commercially viable green steel industry here?

MR WOOD: Well, if Fortescue Metal had not made the announcement they're talking about, I would have said – you know, it would be the time we're talking about what we call phase 2, 10 to 15 years. We're talking about, you know, 2030 onwards, and that's the timescale we need if we're going to seriously gear up to move jobs, to move people into different sectors, to plan for this in places like the Illawarra. If we're going to start doing it, now is the time to start thinking about it. this is not an instantaneous thing, and I absolutely have not looked at the specifics of the particular project that you're having to consider in your review in relation to that question.

PROF MACKAY: Did – Mr Wood, were you online this morning when Mr Gupta presented? Because what he was - - -

MR WOOD: I was not, but I'm familiar with some of what Mr Gupta .....

PROF MACKAY: What he was suggesting was that his company, if I understood him correctly, is very much interested in hydrogen-based steel production.

MR WOOD: Yes.

PROF MACKAY: He sees that as happening from around 2030, and he regards, within his larger organisation, this mine as an important transitional step to enable that to happen. Would you be in a position to comment on that scenario, please?

MR WOOD: I think the timescale is one that I would concur is the sort of timescale for green steel. Different manufacturers have got different views about that, whether it's BlueScope, whether it's Mr Gupta's Liberty Steel, or whatever. He is also, in his Whyalla project, pursuing in a much shorter timeframe moving to a natural gas-based process, which would also be moving away from the blast furnace approach that's being used by BlueScope these days. So I not – I certainly would not be in a position to say this mine is necessary or otherwise for the transition, in terms of its – by itself.

PROF MACKAY: Thank you.

MR WOOD: Look, finally, in terms of what we've been looking at, in our view – and maybe this is consistent with what you've heard from Mr Gupta, and he's closer to the commercial face of this than we are, although I have certain – we spend a lot of time talking to a lot of people in the steel industry both in Australia and overseas about the reality of how real this could be. There is a real potential to develop this opportunity in Australia. The timescale is not in the – really getting this from where it is now, which is very, very early days to a commercial process, if it were to achieve that, is like in that 10 to 15 year timeframe. It's possible that organisations like Fortescue Metals could apply far more significant commercial dollars than we've been thinking about, and that could accelerate that quite sharply, and it's also possible that some of the demand centres – we do know that a lot of Asian steel companies are very interested in moving more quickly than we've been talking about. And again, I wouldn't attempt to sort of put this particular coal mine in the context of those hard numbers.

But our view is that we need to be moving now, on the technology development side, to be able to realise this opportunity. The technology issues associated with very large-scale renewable energy, electrolysers and hydrogen storage are very relevant. The Illawarra is – regardless of timeframes, it is exposed to the loss of carbon-intensive jobs and industries, but it does have a lot of the fundamental capabilities that would lend itself to a journey towards things like green steel manufacturing, and that's the reason why we think from the point of view of a broad planning approach that green steel manufacturing should be taken seriously in any consideration of the future of the Illawarra. Thank you.

MR BEASLEY: Thank you, Mr Wood. Next speaker is Associate Professor John Pye, also on behalf of Undermined Inc. Are you there, Associate Professor?

ASSOC PROF J. PYE: Yes, I am. I hope you can hear me okay.

MR BEASLEY: Yes, we can. Thanks. Please go ahead.

ASSOC PROF PYE: All right. Thank you very much, Commissioners, for this opportunity to speak with you today. I just wanted to mention that I'm from the Australian National University School of Engineering and also the ANU Energy Change Institute, where we've been working on a project with a major component of it around renewable e-refined metals, and that's our zero carbon energy for the Asia-Pacific project. I'm just going to go through the steel iron ore – steel and iron ore industries, very high-level, Australia's role, conventional versus green steel, some scenarios, and this discussion about local advantage. Some of the points I've got here overlap and are similar to what Tony just described, so I'll try to move through those quickly.

Context. The IPCC did a study in 2019 where they highlighted that if we want to limit global warming to 1.5 degrees, it's not enough to just improve efficiency of processes and our energy production. That is not enough. We need very major transitions in these sectors. And across all of the scenarios the IPCC looked at, the minimum reduction in coal use required to meet 1.5 degrees of global warming was 59 per cent by 2030. So there's massive pressure coming from the science to reduce emissions, and that's why we've seen all of these major pledges from Japan, Korea, China to meet net zero by 2050 or 2060. We've got the New South Wales net zero plan, US re-joining the Paris Agreement, the EU moving to make net zero legally binding for its member states. So all of these things are context, I believe, for what we're talking about today.

You will be familiar already, I think, with the fact that industry's a very large portion of global emissions. In this particular analysis, it comes out as the largest. There's different ways of slicing and dicing it, but this study I think is very important, because it associates electricity use with the industries where it's used, and industries as a whole need to be a transition. And steel comes out as the top emitting industry globally, and Tony's presentation mentioned seven per cent of global emissions coming from the steel industry, for which coking coal is an essential ingredient. Here's the production of crude steel over time. We're at record levels, and that's off the back of the Chinese economic miracle, global expansion there, and I suppose we can certainly question whether that level of demand is going to be enduring. The key uses of steel are for buildings and infrastructure, and that's been the basis of his huge demand from China in recent years.

Australia has been exporting enormous amounts of iron ore from primarily the Pilbara region, and we are the largest iron ore exporters in the world, as well as the largest coking coal exporters in the world. So this map on the right-hand side shows the locations of Australian ore mines. There's no sort of scaling of the dots, but actually, the scale of the exports in the Pilbara is far higher than the rest of Australia. And the point I'm making with this graph on the right is that the iron ore that we export is co-located with some of the best solar energy resource in the world and pretty good wind resource as well, and – yes, so these are the companies that are – some of the companies that are active in this area in Australia.

Steelmaking. You've already heard about blast furnace steelmaking and how it's going to be around for a long time. It is 96 per cent of current global production, but its emissions are about two tonnes of CO2 per tonne of steel produced. That compares with some of the alternative processes, and I will talk more about DRI in a moment. Significantly lower emissions are possible, but it's only at about six per cent of global production currently. But that's not an insignificant amount, and there's an immense amount of experience that has been already gained in this alternative steelmaking route. Just doesn't happen to be one that we've had great experience in in Australia because of our coal reserves.

So blast furnace depends on the use of coal for a few things. The coal is doing chemistry to reduce the iron ore, but it's also structurally important. These lumps of coke, they hold up the bed of iron ore in this sort of great burning bed inside the furnace and ensure porosity and flow can happen through this furnace and all of the layers with their different temperatures and different reactions can occur correctly. It's very mature, very optimised technology. You take the coal out of the blast furnace and it just doesn't work the same way any more. You know, you need the coal for this particular technology. So if we want to decarbonise steelmaking, we need a big transition away from the blast furnace. There is some opportunity to replace some of this fuel that's added at the bottom, but that can only give you a 15 or 20 per cent reduction in emissions from a blast furnace. That could be a short-term action, but longer term, it's a major transition that's needed.

On the right-hand side, I'm just highlighting the sort of major flows in the industry. Recycled steel is very important, and we're going to, obviously, be trying to maximise that in the years to come. There is this process route where we used direct reduced iron making into electric arc furnaces, and some recycled steel can go back into conventional process. This is where all the emissions are coming from, the blast furnace, though. I'm going to just talk about direct reduced iron quickly. This process is, as I mentioned, already in quite large scale, six per cent of global production, and it's based on the use of natural gas. But I want to highlight that the natural gas is reformed into carbon monoxide and hydrogen in this pathway and combined with iron ore in lump or pellet form into this furnace, which gives us a range of products.

Of interest for Australia would be HBI, which is a solid form of sponge iron, compressed. That can be readily exported to our trading partners. And typically, we're at about 40 per cent hydrogen in these processes as they currently stand, but up to 90 per cent has been trialled, but only in isolated demo plants. But there is already a significant scale of hydrogen in current steelmaking. This project in Sweden is probably the most advanced. In this case, they're using pure hydrogen from electrolysis of water, and that is from renewable energy sources in Sweden, primarily hydropower. But the hydrogen goes into the shaft furnace much the same way as for the direct reduced iron making, and is followed by electric arc furnace to produce steel.

The cost basis. This is consistent with what Tony showed a moment ago. We have a margin on the price of conventional, blast furnace steel associated with this hydrogen pathway. And it might be 20 or 30 per cent. Even today, current costs of photovoltaics and wind are around US$40 per megawatt hour electric or €35, which lines us up with this point on this scale, assuming we have a kind of continuous supply. So energy storage and all these things are mixed up with this, but we're not actually so very far away from hydrogen-based steelmaking being feasible.

I just wanted to highlight the massive activity that's happened in Europe, primarily, at the moment in this space. On the right-hand side, you can see ArcelorMittal. They're working on transforming the process to work with 100 per cent hydrogen feed. So that's a very large reduction in emissions. Primetals in Australia has got a fluidised bed process, which is actually a success. It's the Budari system that was built in the Pilbara some years ago as the prototype. This is also the large reductions in emissions. Thyssenkrupp has been injecting CO2 – hydrogen into blast furnaces, and there's the Salzgitter doing a transition approach with hydrogen DRI and electric arc furnaces. That's all hydrogen-based steelmaking. There's some other approaches as well. There's direct electrolytic ironmaking happening and being supported by the Gates Foundation and by Boston Metals in the US. There's ArcelorMittal doing a lower temperature direct electrolysis process. Neither of these involve hydrogen. They just electrolyse the iron ore, essentially. And finally, some Australian technology. Hisarna has been combined with carbon capture and storage, carbon capture utilisation for somewhat lower reductions in emissions, but still a major transformation being investigated by Tata Steel in Europe.

So the question that Australia needs to look at in this whole big puzzle is what role it might have. If our major trading partners are in China – the majority of our iron ore goes there and a large fraction of our coking coal – we have this excellent renewable energy resource in that Pilbara region, and if we compare with those regions either here, where steel is actually made in China, or these inland regions where there could, perhaps, be some power lines connected, the benefit looks like it could be as much as 30 per cent when you look at the cost of renewable energy due to the fact that there's so much more solar energy in the Pilbara compared to, say, Eastern China. So we need to understand and quantify how much this benefit is, but it looks like there's something pretty important there to look at.

These trajectories come from Bloomberg New Energy Finance. They say that from 2030, hydrogen is already going to be cheap enough for steel made using hydrogen to be competitive with the upper end of the range of steel made using coal, and then very much middle of the range by 2050, and also competing with hydrogen made with natural gas and CCS instead of directly with renewables. So why is that happening? Because of continuing major reductions in the cost of renewables, photovoltaics and wind, we've had 90 per cent reduction in the last 10 years.

PROF FELL: I will ask a question.

ASSOC PROF PYE: Yes. Did I hear – is someone asking a question?

MR BEASLEY: Yes, I think Professor Fell would like to ask you a question.

ASSOC PROF PYE: Please.

PROF FELL: Thank you for a very interesting presentation. I gather one of the big problems for Australia exporting clean steel is providing the water to produce it pure water, so effectively exporting water along with the steel, and, in fact, Australia hasn't got too much water. I would also ask the question that Professor Mackay asked earlier: when is this likely to be really practical? Is it within the 10 year span of this projected coal mine?

ASSOC PROF PYE: Yes. Well, I believe it could be. So this graph on the right shows 2030 being a period when it's becoming competitive, and this is in the absence of any CO2 price. So if a CO2 price comes into play – and this looks increasingly likely as a result of the carbon border tariffs that Europe is putting in place – in order to support and accelerate their own green steel efforts, it looks that there will be some pressure in international trade in steel to fall in line and also decarbonise. So I think it could be relevant. On the question of water, we did look into the cost of electrolysis – sorry, desalination of sea water to – for – as the hydrogen source for all of this, and the energy costs of desalination are very tiny compared to the energy costs of water splitting or electrolysis. So water would be expected to come from the ocean, and desalination would be a small cost compared to the conversion of water to hydrogen. And I will continue, unless there's something more.

MR BEASLEY: No. Please go on.

ASSOC PROF PYE: Yes. I think I finished that one, so – sorry. Yes. There's also been big cost reductions in electrolysers, at least 40 per cent, based on European numbers, and it's not quite clear, but even greater reductions are thought to have been made in China, according to Bloomberg. It's very unlikely to happen, but for a sense of scale, if we were to produce iron in the Pilbara at the scale of our current iron ore exports, we would need something like seven times our current national electricity market – electricity demand. So very big projects would be needed, and that's responsible for the Asian Renewable Energy Hub, Sun Cable, and the recent announcements from Fortescue Metals.

I will just mention these scenarios of hydrogen-based steelmaking in the Pilbara are – it's one attractive scenario, but there are a range of competing technologies, and work is happening now to figure out how all these things stack up. I mean, for example, we could use natural gas with carbon capture and sequestration. We could use nuclear power to make hydrogen. That's something China is looking into seriously. There's offshore wind. There's long-range HVDC. There's a whole bunch of possibilities. So we don't know how this is going to go yet, but it seems that Australia, with the renewable energy resources and the iron ore, has an interesting opportunity.

I would say that the scale economically would also be enormous and could give us an opportunity to transition away from coal and buffer us from the loss of that market. I won't talk about this in any detail at all, but we did some scenarios to look at how the transition away from blast furnace towards the alternatives might play out, and the key finding on this graph is that only by pushing towards completely zero carbon steelmaking basically as quickly as we can would put us on the path of limiting global emissions to 1.5 degrees from this sector in isolation. Business as usual, even the best available current technology, will not put us on that path. So massive changes are needed, and we're seeing that action coming from the companies and countries involved.

My key points in relation to the present inquiry. I would say that from 2030, hydrogen-based ironmaking is forecast to start becoming competitive. There are multiple major commercialisation efforts, and some of those companies in Europe that I mentioned are looking to Australia and pursuing – aggressively pursuing opportunities to build and demonstrate their technology in our country. Under these conditions, I think the urgency for securing a long-term coking coal supply can be and should be questioned. The Australian iron ore and steel producers should be and, I would say, are looking into how to benefit from local advantages from our coincidence of natural renewable energy resources in order to build a local green steel industry, and I would say, arguably, that this inquiry should be insisting on the highest environmental standards in our mining approvals – highest environmental standards in our mining approvals – because that will only help to accelerate the green steel transition which has to happen, and it will increase, if anything, Australia's eventual competitiveness in this space. That's my argument as more a technologist than an economist, but I think there's a case for insisting on high standards to ensure that we are doing everything across the board to minimise environmental damage both from emissions and from local effects.

MR BEASLEY: All right. Thank you, Associate Professor Pye, for that presentation. No doubt you will mail it into the Commission as well.

ASSOC PROF PYE: Yes. I will be happy to do that.

MR BEASLEY: Great. Thank you very much. I think the next speaker is Bob Tims from the CFMEU. Mr Tims.

MR B. TIMS: Yes, good afternoon, Commissioners, and I will - - -

MR BEASLEY: We just can't hear you for the moment, sir. Have you got your mic on? I think you might have muted yourself.

MR TIMS: Yes. The admin actually muted me, and I've unmuted myself again.

MR BEASLEY: All right. You're right now.

MR TIMS: Yes. Thank you very much for the opportunity to speak this afternoon. I understand you've had a long day, so I'll try to keep it short. The CFMEU will be making a more formal written submission outlining our position in support for the project, but today I just wanted to speak at a more personal level. I have a personal connection to Tahmoor Mine. I worked at the mine for 23 years before becoming a full-time union official. My late father, Keith, worked there for 29 years until his retirement. My uncle worked there with us, and I have cousins and good friends who continue to work as underground coal miners at Tahmoor. I'm certainly not unique in this respect. Tahmoor Colliery is a major employer in this area, and it's a feature of coal mines that they are big employers in regional areas like this one, and they've invited well paid, stable, long-term jobs for locals.

Today there are many coal miners at Tahmoor, like I was, who work alongside parents, sons or daughters, partners and other relatives. At our recent support rally for the mine, we heard from coal miner Shane Welton, whose daughter Emily is a second-year electrical apprentice. Another young electrician, 22 year old Mariah Gavin, works at the pit with her partner, her dad, brothers and cousins and her partner. There has been coal mining in this region for over 100 years, and during that time the industry has sustained generations of local families with stable employment and opportunity for skills and training. It has also generated and continues to generate substantial flow-on economic benefit to the community through the supply chains that service the industry and all other diverse businesses and services.

There are currently 400 direct coal mining jobs at Tahmoor, but there are hundreds more people working at the mine in administration and ancillary services. These jobs will be secured until 2032 if the mine extension goes ahead. Additionally, another 150 new jobs will be created in construction. The extension will inject 137.5 million into the economy and over 600 million into the state economy. This is a big deal for our shire and the local economy. There is no other business or industry locally that can generate this sort of economic value or number of skilled well-paid jobs. Conversely, if the extension doesn't go ahead, it will be a massive blow. The loss of hundreds of jobs locally will devastate families, especially those many extended families with multiple people who rely on the mine for their income.

Tahmoor Colliery has a high proportion of workers who live locally in the Wollondilly Shire. They are home owners and residents. Like our member, Luke Cox, who lives locally with his five kids who all attend local schools. As a union official, I see firsthand the fallout when mines close and people lose the jobs that have provided their family income. People lose homes. They sometimes lose their marriage. Their mental health suffers. At a time when our local mining industry is under extreme pressure, it is unlikely Tahmoor miners would find jobs in the industry. Apprentices like Emily Wilton would be hard-pressed finding an opportunity to finish their apprenticeships.

The most likely outcomes are people taking lower-paid jobs in other industries or leaving the area completely. Of course, mining projects must meet rigorous

requirements. I have seen the work SIMEC has done to adapt their plans, reducing the mine's footprint so there is dramatic reduction in mining under the town of Bargo. Concerns about subsidence should be taken seriously. Like many local miners, I also live in a subsidence-affected house, and I don't dismiss people's concerns. It's an issue that must be worked through and addressed so that damage is repaired and residents aren't left worse off.

In New South Wales we have a Coal Mine Subsidence Act and we have a process for dealing with claims. If there are shortcomings in the Act or the claim settlement process, then they should be addressed. This can and should be done without robbing workers of the jobs that sustain their families and communities of the industries and sustain their economies. I'm deeply concerned about the role property developers have played in establishing the No Mines at Bargo campaign, which spreads hysterical and unsubstantiated claims about subsidence risks of the mine extension.

No Mines at Bargo was established by a property development company, Ironlaw, which happens to own a parcel of land it plans to develop. These property development plans would be delayed if the mine extension proceeds. The communities urge transparency around the interests behind the No Mines at Bargo campaign and the information they are receiving. Their real interest is not the subsidence of current residents' homes; it's cashing in on the new properties they hope to develop. I'm not opposed to property development. We need development. But where there are competing interests for land use, let's have an open and transparent discussion about that, not astroturfing where commercial interest is dressed up as community campaign.

Finally, on behalf of the members of my union – and we represent over two and a half thousand mine workers in the southern districts and over 400 at Tahmoor – I want to express our deep disappointment with the attitude and behaviour of the State-level MP for Wollondilly, who has opposed this project out of hand and refused to meet with us as a represent of Tahmoor's 400-strong workforce. In my role we often have disagreements with politicians, but it's rare to be dismissed out of hand. Usually politicians in mining regions make an effort to understand the mining industry and the concerns of its workers.

I'm pleased that the local Federal MP Angus Taylor and New South Wales Deputy Premier John Barilaro have not taken our local state member's approach. They have met with us to discuss this important project, and our members appreciate their support for their jobs, for the Tahmoor extension, and our local coal industry. Our local southern district coalfields produce some of the best metallurgical coal in the world. Coal from Tahmoor goes to Whyalla steelworks, and it's used to make Australian steel. Metallurgical coal is not an industry of the past, and it is and should be an industry of the future, building the wind turbines and infrastructure we need for a new green economy. I'm proud to support the Tahmoor mine extension, and I urge the Commission to approve it.

MR BEASLEY: Thank you, Mr Tims. Next speaker is Rod Campbell from the Australia Institute. Mr Campbell.

MR CAMPBELL: Thanks, Mr Beasley. I will just see if I can share my slides, or I will introduce myself first without a slide. My name is Rod Campbell. I am an economist and the research director at the Australia Institute. We're an independent thinktank based in Canberra. I've been involved in economic assessment of planning projects, and coal projects in particular, in New South Wales for about 10 years. I've appeared in most of the major court cases and plenty of these hearings before, and it's great to be back. My key concern and what I'm talking about today – I will be making a more detailed submission – is the overstatement of economic benefits in the project documentation, an issue that has been entirely ignored by the Department in its assessment report. Let me just make sure I am starting to share screen.

MR BEASLEY: Yes, it's starting to – yes, we've got it now.

MR CAMPBELL: All right. So I'm just not sure if you're - - -

MR BEASLEY: Yes. "Overstates benefits, economic appendix".

MR CAMPBELL: Yes. I've changed slides, so let me see if I can find what has gone wrong here. So I'm not sure – so I'm just not sure what slide you're seeing at the moment.

MR BEASLEY: We're actually seeing Professor Mackay's biography, which probably isn't what you wanted to take us to.

MR CAMPBELL: No. Hang on.

MR BEASLEY: As impressive as it is, it's probably not relevant to the economics of this project, understated or otherwise.

MR CAMPBELL: How is that? Are you still on Professor Mackay's biography?

MR BEASLEY: No, we're just – we can see ourselves now. Do you want to try and start it up – that's it, yes. I'm being told by someone that perhaps maximise your screen. I'm being told if you can press play, play slideshow.

PROF MACKAY: Perhaps have the presentation and send this in.

MR CAMPBELL: That's a shame. How's that?

MR BEASLEY: It's back, but I think you need to play slideshow.

PROF MACKAY: Mr Campbell, if you go into the top menu and – yes, that's it.

MR CAMPBELL: Now we're there. So let's have a quick look at what's in the project assessment documents here. This is taken from the second project amendment report, appendix K, Economics Assessment. And you can see that the consultants to the proponents have come up with an estimated net present value of this project of $664.9 million. As an economist interested in the resource sector, just at face value the idea that a relatively small, relatively distant from port, relatively obscure coal mine and extension proposal would be worth two-thirds of a billion dollars at this point in time is a pretty surprising conclusion.

And a lot of that conclusion is related not to the fundamental financial and economic value of the project, but to what I think are deceptive items in the cost benefit analysis that has been submitted. You can see I've highlighted there two values called "net economic benefit to New South Wales workers" and "net economic benefit to New South Wales suppliers". Combined, these add up to $450 million, or two-thirds of the estimated value of the project, and I think decision-makers should be concerned that such estimates are considered very unorthodox and entirely speculative.

MR BEASLEY: Didn't – Oxford Economics in their report said you should exclude at least the benefits to workers.

MR CAMPBELL: Yes, that's correct. I guess the key – one of the key messages I would like the Commission to take away is, in considering the economics of the project, please read the Oxford review itself rather than the Department's, in my view, misrepresentation of it.

MR BEASLEY: Right.

MR CAMPBELL: The Department, despite agreeing with Oxford that a considerable amount of these values should be omitted, does absolutely no such thing. Have we changed slides now?

MR BEASLEY: Yes.

MR CAMPBELL: You can see the DPIE assessment report - - -

MR BEASLEY: Yes

MR CAMPBELL: - - - and its lack of questioning around these values. This is from the executive summary. You can see they've repeated the $664.9 million figure and the $450 million in indirect benefits, with no questioning around that. They say, and I quote:

> *Even when considering conservative assumptions, the economic benefits of the project to the state and region and would be significant.*

This is not just a – this is not just a shorthand in the executive summary. Deep in the report, here on page 129 of the assessment report, the exact same figure is repeated again without any questioning or reference to Oxford Economics' recommendations of omitting hundreds of millions of dollars in value here. They were unquestioning. As Mr Beasley has pointed out, despite Commissioning a review of this – and it's worth remembering that such reviews have only been conducted for – they've been conducted since about 2014 or 2015 because of a long history of economics consultants providing results that were grossly overstated and of very little use for decision-making in New South Wales. That's why these reviews take place, is because economics consultants basically can't be trusted to do their jobs, as successive New South Wales courts and often planning Commissions have found. The DPIE has misrepresented what Oxford have said. This is the DPIEs take on page 129 to 130 of the assessment report:

> *The Department commissioned the Oxford review to provide an expert review of the IEA. Overall, Oxford considered that the CBA was broadly consistent with the economic guidelines, but identified several areas requiring further consideration –*

such as, as Mr Beasley points out, this calculation around benefits to workers, and also some discussion of greenhouse gas emissions. Oxford actually pointed out a hell of a lot more shortcomings in Ernst & Young's review than the department is referring to, and I encourage you to read their report in full. But just unpacking in the minutes we have left a couple of these issues.

MR BEASLEY: Please go ahead.

MR CAMPBELL: Sorry. And further in the Department's assessment report, the Department says here in the highlight it agrees with findings from Oxford that the calculation of worker benefits should be excluded from the CBA, as it is highly likely that – and I'm paraphrasing here – it doesn't exist. That doesn't mean that it doesn't provide any jobs or they don't pay wages. It means that within this economic assessment, the benefits to workers has been overstated by hundreds of millions of dollars through economic sleight of hand rather than anybody saying that there are no jobs here.

The Department agrees with its commissioned review to exclude this $240 million from the assessment, yet as you've seen in these previous slides, they do absolutely nothing of the sort. They have repeated these misleading calculations at every possible opportunity, including, it's worth noting that the Oxford review is dated April 2020, the estimates that the Department is quoting are from August 2020, and the Department's report is in December 2020. So the Department had eight months to work out what this means, and they have failed to do so. Just a look at what Oxford actually said, they said that Ernst & Young's calculations on benefits to workers are not consistent with key elements of the guidelines, and they've suggested that it's omitted from the CBA.

This is important, as such benefits amount to $264 million in net present value terms. This would have material impact on the assessed benefits to New South Wales, reducing benefits by approximately one-third. I think decision-makers should be really considered that the peer reviewers Commissioned by the Department are saying, "You need to reduce these estimated benefits by at least one-third." I think that's telling you that this assessment really can't be trusted.

Furthermore – I've only got two slides left – Oxford also were critical of the approach to supplier benefits, which is another $200 million-plus line item in this cost benefit analysis, saying that they would not generally support the inclusion of benefits to suppliers, as they would be deemed as benefits occurring in secondary markets. I've seen a decade of cost benefit analyses of coal mines in New South Wales, and the only ones that include this value, which essentially double-counts the spending of the project, are ones by Ernst & Young, and it's the consultant who worked on this, Steve Brown. He is the only person, the only consultant that does this. Others, like Deloitte Access Economics, expressly say they do not include and do not calculate this benefit because it can't be estimated and is purely speculative.

MR BEASLEY: Well, Oxford says there's a lack of transparency in relation to spending on inputs, don't they?

MR CAMPBELL: Yes. They highlight the lack of transparency in the calculation, but I would go further, and I can – and in my written submission I will - - -

MR BEASLEY: Yes.

MR CAMPBELL: - - - provide references to cost benefit analysis textbooks, other mining consultants. The very idea of this benefit is speculative, not just transparency around how it has been calculated in this instance. Finally, the Oxford Review includes discussion of what I see as the massive elephant in the room, and that is, and I quote:

> *…the question of global demand for coal and justification for the export of Australian coal given increasing concerns about global warming impacts.*

They make the obvious point that this would affect the financial viability of the project itself and any benefits to New South Wales. Finally, and I quote:

> *In short, there is arguably a risk that costs of mine development impact the State, but the full benefits, eg, taxation benefits, are never realised. This may be an issue that the Department could further examine.*

This is one of many issues highlighted in the Oxford report that the Department has done its best not to examine and outright ignore. The idea that in 2021 you would write an economic assessment of a coal mine expansion project and not have a serious look at global coal markets and global climate policy I think beggars belief.

And the Department's determination to ignore recommendations by its own commissioned peer reviewers I find absolutely stupendous. This economic - - -

MR BEASLEY: Well, I mean, all of that is a risk that Oxford says hasn't been dealt with in the report you're criticising.

MR CAMPBELL: Yes, that's right.

MR BEASLEY: Yes.

MR CAMPBELL: And I don't believe that the Department in its recommendation to the Commission has considered these issues either.

MR BEASLEY: No. Sure.

MR CAMPBELL: So in summary, benefits heavily overstated. The economics of the mine and the underlying project have not been explored, and I think the production of documents like this that are designed to advocate at best or mislead at worst should be real red flags to the Commission, and I would recommend rejecting this application.

MR BEASLEY: Thank you, Mr Campbell, for that. And the Commissioners will look forward to your written submission.

MR CAMPBELL: I will look forward to submitting it.

MR BEASLEY: All right. Thank you. Next speaker is Troy McDonald from Project Portfolio Management. Mr McDonald.

MR McDONALD: Good afternoon. Can you hear me well?

MR BEASLEY: Yes. We can hear and see you. Thank you.

MR McDONALD: Okay, no problem. Just by way of introduction, my name is Troy McDonald, and I'm the CEO of a project management and engineering company here in Illawarra called Project Portfolio Management, founded here in the steel industry and expanded across into the resources sector, but now got quite a diverse portfolio across the resources, port and rail, energy and manufacturing sectors. We have about 150 employees nationally. But most of our revenue, just over 60 per cent, comes from the mining and the manufacturing sector here in the Illawarra.

I have a fair amount of experience in the mining in the Southern Coalfields, with over 25 years across a variety of positions, including senior management and executive roles for several mines here in the Illawarra. And just for transparency, PPM, our company, has been assisting SIMEC Mining with the development of the Tahmoor South Project since they took ownership from Glencore in 2018. Over the

last 20 years we've seen community and government expectations increase from mining companies, and they've continued to adapt their plans for proposed mining developments to better balance the economic and environmental impacts, both improving the protection of some of the built facilities around our region, but also the natural features.

I have been involved in in formal roles and have also observed many changes that the mining companies made to try and meet the requirements and adapt for the increasing in expectations. But they do come in certain circumstances with quite a high economic impact. Unfortunately, mines have as many underground aspects to take into consideration in the planning and design phase in addition to those on the surface such as the geological intrusions, quality, seam height, just to mention a few.

Now, there is a point where these projects become uneconomic, and the investment in many instances goes elsewhere, if not within Australia, offshore. It's also worth noting that delays associated with production discontinuities can also impact the project viability significantly. To SIMECs credit – SIMEC Mining's credit, they have already invested a significant amount of money in pre-purchasing equipment and underground remediation, investment that they knew was a risk since they purchased the business from Glencore to ensure they had continuity for the employment as they moved towards the south domain, knowing too well that they still needed to go through both the New South Wales and the Federal Government approval processes.

There's not too many companies that I'm involved with or aware of that would be willing to take this risk, and we all – we're talking about the future employment – that pre-investment for securing continuity has maintained - employment for a very large number of people for the last two years. SIMEC Mining has made a number of concessions and improvements in the preferred project application, which has significantly reduced the impact on homes in the regional area caused by subsidence. They have also included water treatment facilities to improve the quality of water discharged from the mine, which we heard Peter Vale talk through earlier in the morning. While it's not ideal – there is some local community members still impacted – the area has been deemed a mine subsidence zone.

There is a regulatory framework that governs all the developments and remediations of the impacts on these areas. And to Bob Tims' point, if the impact and the remediation process is a problem, then that can be dealt with through those forms of legislation. These projects are high upfront capital cost, which are recouped over the life of the project, and we're concerned that further sterilisation of resources would likely render that project uneconomic, which would mean the closure of Tahmoor in a few years' time. The quality of coal in the Southern Coalfields is some of the best in the world and brings significant benefits to the manufacture of local steel.

This is why the steelworks is here in the first place: local high-quality coking coal with no need to pay for shipping and unloading from other suppliers, whether it be here or offshore. Without local coking coal, I would expect the viability of

steelmaking at Port Kembla will be heavily impacted, consistent with the message from John Nowlan earlier. And I also believe that at some point the future of steelmaking will transition to a more sustainable low-carbon alternative. However, having provided advice and consulting support to several companies around this, both the technology and the economic impact of these is many years if not decades off.

So what's important to consider also is the broader regional implications, which many people have talked through, the jobs, the suppliers, the local transport companies. Just in the last three months, we have witnessed other coal mining companies suspended due to – whether it be falling prices or the external environment, and other continuation plans rejected by the Government, which has already started to impact our business. Several projects we were working on have been deferred, and without further certainty for the companies investing in these projects, further cutbacks are likely, ultimately causing job losses in the local region. So our business supports the application for this project. We want to see a sensible outcome and a balance between the economic needs of the region and the social and environmental factors that surround it. Thank you.

MR BEASLEY: Thank you, Mr McDonald. The next speaker is David Waldock from Tahmoor Coal. Mr Waldock.

MR WALDOCK: Hello. Can you hear me?

MR BEASLEY: Yes, and see you. Go ahead, sir.

MR WALDOCK: No worries. Thank you. Hello and good afternoon to the IPC panel. My name is David Waldock. I would like to thank you for the opportunity to speak in support of the Tahmoor South Project. My family and I have had a long history with coal as an industry and Tahmoor Coal as a business. As a fifth-generation coal miner, this industry runs in my veins, and from my great-grandfather starting his working life in 1930 as a 14-year-old labourer at Lithgow State Colliery with his dad, who was the deputy at the time, to my father Mark Waldock starting his fitting apprenticeship at Tahmoor Colliery back in 1978, and then myself in 2011, I started my mechanical fitting apprenticeship alongside my father at Tahmoor.

It's a family affair, even today, with both my uncles, who are directly employed by the mine. They also live in the local community with their employment supporting their families. Tahmoor Colliery for many years has provided career opportunities and stable employment for all of its workers. Upon completing my HSC in 2010, I was torn between university to study mechanical engineering or applying for apprenticeship at Tahmoor Colliery. After a tour of the mine facilities and meeting with the apprenticeship coordinator at the time, Steve Thomas, my mind was easily made up, and I began my apprenticeship soon after at Tahmoor Coal.

The apprenticeship program at Tahmoor is the best I've seen in the mining industry. Since 2009, 38 apprentices, both mechanical and electrical, have completed their

training, and 36 to this day continue to work at Tahmoor Colliery. The apprenticeship program is a unique opportunity where you are supported and encouraged to give back to the local community. I was fortunate enough to be involved in various community projects and events over my four-year apprenticeship. Community projects such as the Picton Memorial Park upgrade, Thirlmere RSL and community ....., Buxton Primary School upgrades, and numerous charity drives and school fetes, offering up our time for community barbecues. So the apprentices, they are afforded the opportunity to study engineering in parallel with their trades.

Many nights of night school later, I myself graduated with my mechanical trade and an Advanced Diploma of Mechanical Engineering. Management see value in investing in their people, and want to see us succeed in our careers, and for that, myself and three past apprentices were released to the business engineering traineeship program. That allowed us to work at various mines within New South Wales, open-cut and underground, to build our engineering base knowledge over a three-year period. The four of us are now holders of New South Wales Resources Regulator certificates of competence. It is a role that comes up with mine-wide responsibility and accountability.

Myself, I'm fortunate to have returned to the local area with my family and Tahmoor Colliery after my tenure abroad at various mines outside the Wollondilly LGA. At present I work in the role of mechanical engineering manager, a role in which I am now able to give back and support the next generation of apprentices coming through. With the Tahmoor South Project approval, the mine will continue to invest in training apprentices and producing quality tradespersons for years to come. There have been concerns raised regarding mental health impacts on 120 residents and their houses if they were to be impacted by mine subsidence.

I would ask the Commission also considers the mental health impact if 400 mine workers were to be put out of work. That's 400 families. And also consider the number of family-run businesses that will be impacted both financially and mentally, whose families will need to be uprooted and moved to find work, pulling their children from local schools, sporting clubs, and the community as a whole. I am a proud coal miner. It's an industry well-known to this area, and has been and will continue to be a vital pillar of the Australian economy. Revenue generated by this mine to the state funds critical infrastructure and will continue to do so if approved.

Statements regarding the lack of economic value from this project, hence the decision of previous mine owners Glencorp to not end this project, lack context. I would like to draw back to the words of our owner and executive chairman of GFG Alliance, Sanjeev Gupta. His green steel business model and vision, carbon neutrality by 2030, emphasise the key role Tahmoor South Project will play in realising that vision through a just transition. Please consider the approval of Tahmoor South on the facts brought forward. Tahmoor Coal has successfully mined in Wollondilly for decades as an extension of the community. With the continuation of mining, I will be able to mentor and support apprentices through their careers in

the industry that I love. Tahmoor Colliery has been an integral part of this community in bringing positive socioeconomic impacts, and will continue to do so while playing an important role in achieving the vision of green steel and carbon neutral by 2030. Thank you for your time, Commissioners.

MR BEASLEY: Thank you, Mr Waldock. The final speaker today before Professor Mackay's final statement will be David Richards from Port Kembla Coal Terminal. Mr Richards.

MR RICHARDS: Hi. Can you hear me?

MR BEASLEY: Yes, we can, and we can see you as well, so please go ahead, sir.

MR RICHARDS: Great. Good afternoon. Thank you for this opportunity to speak today in support of the Tahmoor South Coal Project. My name is David Richards. I am the general manager at Port Kembla Coal Terminal, or PKCT. PKCT is a coal export facility on Australia's east coast within the Illawarra ecosystem. The facility services the southern and western coalfields of New South Wales, exporting coking and thermal coal to customers around the world. Coking coal from Tahmoor Mine is exported through PKCT to the world's steelmakers. This product from Tahmoor makes up around 20 per cent of all coal shipped through the terminal, making SIMEC and Tahmoor Mine a key customer.

At PKCT we employ around 100 employees and contractors, the majority of whom live in the Illawarra. We prioritise local businesses and suppliers, and we are proud of our long history in the area. We have recently completed a major refurbishment project on our facility, investing around $300 million to ensure we support the coal industry in the Illawarra and can continue to meet our customers' needs long into the future. It is my understanding that Tahmoor South Coal Project will secure the future of the Tahmoor Mine, the jobs and opportunities of hundreds of local employees and businesses, and ensuring the ongoing supply of high quality metallurgical coal to domestic and international customers.

For that reason and for the long-term economic prosperity of the Illawarra Region, I am pleased to speak in support of the project. Coal mining has a long history in the region, and the mines, along with the port, the rail providers, BlueScope Steel and other industries, we form an extensive interlinked industrial sector. The value of this industrial sector is significant, and with the recent decision by the IPC to reject the Dendrobium Mine expansion, the industry in the area is at significant risk to be unsustainable. With the loss of Dendrobium Mine and potentially Tahmoor Mine, PKCT may become unviable for the remaining mines that use PKCT, as without any additional throughput to lower the high-level fixed costs required to maintain the terminal assets, this cost will need to be borne by the remaining mines.

With the reduced throughput, the remaining customers will need to fund these costs, which will put their operations at risk to competitively export their coal. So at PKCT, the only levers that I have as the general manager is to reduce labour and

reduce maintenance spend, which is real money into the community and real jobs, and it's a decision that I will have to make in the next couple of years. As part of the Illawarra ecosystem, we greatly value the ongoing contribution of the Tahmoor Mine, through this extension of its operations to Tahmoor South, to continue employment, the community partnerships with our local region, and significant royalty contributions to the State of New South Wales. On a personal note, I've just moved to the region with my family. We really enjoy the lifestyle and the opportunities here in the Illawarra. I am proud to support the extension of the project and the real value it will continue to bring, and again support this project. Thank you for your time.

MR BEASLEY: Thank you, Mr Richards.

PROF MACKAY: Well, that brings us to the end of day 1 of this public hearing. Thank you to everyone who presented today for your thoughtful presentations. A transcript of today's proceedings will be made available on the Commission's website in the coming days. I would remind presenters that you are invited to submit your speaking notes or presentations to the Commission, and the Commission will accept any written submissions on the Tahmoor South Coal Project up until 5 pm Wednesday, 24 February 2021.

It is particularly helpful to us if you can comment in your submissions at this stage on the assessment report for the project prepared by the Department of Planning, Industry and Environment and/or on the associated draft conditions. And I do offer a reminder that submissions received will be published on the Commission's website. Comments can be submitted using the "have your say" portal on our website or by email or by post. The Commission will be back tomorrow morning at 10 am for day 2 of the public hearing. Thank you again for the participation today. From all of us at the Commission, enjoy your evening and goodnight. Thank you.

MATTER ADJOURNED at 4.58 pm UNTIL TUESDAY, 16 FEBRUARY 2021