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TRANSCRIPT OF PROCEEDINGS

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INDEPENDENT PLANNING COMMISSION

PUBLIC HEARING

RE: HUME COAL PROJECT AND BERRIMA RAIL PROJECT

PANEL:	**PROF CHRIS FELL** **ANNELISE TUOR** **GEOFF SHARROCK** **GEORGE GATES**
ASSISTING PANEL:	**DAVID KOPPERS** **BRAD JAMES** **STEPHEN FREE SC** **JANE TAYLOR**
LOCATION:	**MOSS VALE SERVICES CLUB** **ARGYLE STREET AND YARRAWA STREETS** **MOSS VALE, NEW SOUTH WALES**
DATE:	**10.01 AM, TUESDAY, 26 FEBRUARY 2019**

DAY 1

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PROF C. FELL: Good morning. Now, before we begin, I would like to acknowledge the traditional owners of the land on which we meet. I would also like to pay my respects to their elders past and present and to the elders from other communities who may be here today. Welcome to this public meeting into the carrying out of the Hume Coal Project and the associated Berrima Rail Project.

The applicant is seeking to construct and operate a new underground coal mine near Moss Vale to allow for the extraction of up to 3.5 million tonnes of run-of-mine coal ..... over a project life of 23 years including construction and rehabilitation. My name is Professor Chris Fell. I'm the chair of the Independent Planning Commission New South Wales Panel which has been appointed to conduct a public hearing on ..... project, as set out in the Minister's request dated 4 December of this year.

Joining me are my fellow commissioners, Annelise Tuor, Geoff Sharrock and George Gates. From the Commission's Secretariat are David Koppers and Brad James – where are we? Great. We're also supported by Stephen Free SC, along with Jane Taylor, who are counsel assisting the Commission panel. The role of counsel assisting is to facilitate the conduct of the hearing today as set out in the public hearing guidelines.

Before I continue, I should state all appointed commissioners must take an annual declaration of interest, identifying potential conflicts with their appointed role. For the record, we're unaware of any conflicts in relation to our appointment to this panel. You can find additional information on the way we manage potential conflicts in our policy paper which is available on the IPC website. In the interests of openness and transparency, today's meeting is being recorded and a full transcript will be produced and made available on the Commission's website.

I want to talk briefly about hearing purpose and effect. We're here today because the Minister for Planning has requested the Commission conduct a public hearing into the carrying out of the Hume Coal Project and the associated Berrima Rail Project and that request was made on 4 December 2018. This request was made under section 2.9(1)(d) of the Environmental Planning and Assessment Act 1979.

Specifically, the Minister requested that the Commission, firstly, conduct a public hearing into the carrying out of the Hume Coal Project and the associated Berrima Rail Project and (a) consider the following information: the EIS for the projects, all submissions received on the projects, any relevant expert advice, any other relevant information – I will continue – (b) assess the merits of the Hume Coal Project and Berrima Rail Project as a whole having regard to all relevant New South Wales Government policies and paying particular attention to impacts of surface water and groundwater resources, including on private bores, social and economic impacts of the projects on locality and region and suitability of the site and, subsequently, (c) prepare a report summarising the actions taken by the Commission in conducting the public hearing and outlining the Commission's findings on the projects, including any recommendations, secondly, hold a public hearing as soon as practicable after

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the department of Planning and Environment provides its Preliminary Assessment Report to the Commission, and, thirdly, submit its report on the public hearing to the department of Planning and Environment within eight weeks of holding the public hearing unless otherwise agreed with the Planning Secretary.

Now, in accordance with the Minister's request, this hearing will serve as the public hearing. Public hearings of this nature provide you, the community, and interested parties with a valuable opportunity to address us directly and voice your views on the proposed development. This will be of great assistance to the Commission completing the tasks referred to in the Minister's request and we thank you for being here today. In accordance with section 8.6(3)(a) of the Environmental Planning and Assessment Act, holding this public hearing means that no appeal may be brought under Division 8.3 of the Act in respect of a future decision made by the Commission completing its task referred to in the Minister's request.

For more information, please visit the public hearings guide section on our website. I should briefly say what is IPC and what role do we play in this review. The Independent Planning Commission of New South Wales was established by the New South Wales Government on 1 March 2018 as an independent statutory body, operating separately to the department of Planning and Environment. The Commission plays an important role in strengthening transparency and independence in the decision-making processes for major development and land use planning in New South Wales.

The key functions of the Commission include to determine State Significant Development applications, conduct public hearings for development applications and other matters, provide 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 dedicated consent authority for State Significant Development applications where there are more than 25 public objections, reportable political donations by the applicant, objections by the relevant local council.

Where are we in this process? The hearing today is one of the Commission's processes in carrying out the Minister's request. On 7 December 2018, the Commission received the department's Preliminary Assessment Report. This report is available on the department's website. The Commission is not involved in the department's assessment of this project, the preparation of their report or any findings within it. On 11 February 2019, the Commission met separately with the department of Planning and Environment, the applicant and representatives of Coal Free Southern Highlands. Transcripts of these meetings are available on our website.

After the hearing today, we may convene with relevant stakeholders if clarification or additional information is required. Transcripts of all meetings will be published on our website. A site inspection and locality tour will take place on Thursday, 28 February this year and will include the proposed surface infrastructure area and the surrounding locality of the project area. The applicant and the following representatives of local community groups will attend as observers at the site

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inspection and that's John Barrett of AGHS Southern Highlands, Michael Verberkt from the Battle for Berrima, Darryl Smith of Regional Development Australia and Jane Lawlor of Medway Road Residents. A summary of questions asked and answers given at the site inspection will be available on the Commission's website.

Written submissions. The Commission has received a number of written submissions in relation to the Hume Coal Project and the Berrima Rail Project, which the Commissioners have reviewed. These written submissions will be made available on our website. The commissioners have also reviewed the written submissions received by the department of Planning and Environment which are published on the department's website. The Commission will continue to accept written submissions about the project until 5 pm on 6 March 2019. I repeat that; 5 pm on 6 March 2019. Anyone can send written submissions or comments to the Commission before that time. You can do so by sending your submissions or comments to the Commission by email – that's ipcn@ipcn.nsw.gov.au; or by post: Independent Planning Commission NSW, Level 3, 201 Elizabeth Street, Sydney NSW 2000.

And just a little bit more, folks. Next steps. Following today's hearing, we will endeavour to complete our task as soon as possible; however, there may be delays if we find we need additional information. We will then finalise the report. The report will be provided to the department of Planning and Environment in accordance with the Minister's request. And now, today's ground rules. Before we hear our first registered speaker, I would like to lay some ground rules that we expect everyone taking part in today to follow. The hearing is not a debate. We will not take questions from the floor and we will not permit interjections.

Our aim is to provide the maximum opportunity for people to speak and be heard by the Commission. We ask that speakers today refrain from making offensive, threatening or defamatory comments, as per our guidelines available on our website. Many people find public speaking very difficult. Though you may not agree with everything that you hear today, each speaker has the right to be treated with respect and heard in silence. Today's focus is public consultation. Our panel is here to listen, not to comment. We may ask questions or seek clarification. It will be most beneficial if your presentation is focused on issues of concern to you It is important that everybody registered to speak receives a fair share of time. I will enforce the timekeeping rules with the assistance from the secretariat and the counsel assisting.

As chair, I reserve the right to allow additional time if I consider it appropriate. A warning bell will sound one minute before the speaker's allotted time is up and again when it runs out. Please respect these time limits. That will strive to stick to our schedule today. Speakers sometimes don't show or decide not to speak. If you know someone who will not be attending, please advise either David Koppers or Brad James from the secretariat. If you'd like to project something onto a screen, please give it to David Koppers or Brad James before your presentation. If you have a copy of your presentation, it'll be appreciated if you could provide a copy to the secretariat after you speak.

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Please note, any information given to us may be made public. The Commission's privacy statement governs our approach to your information. If you would like a copy of our privacy statement, you can obtain one from the secretariat or from our website. I would also like to inform everyone here today that in accordance with Commission's guidelines, no alcohol is permitted to be brought into this venue and anyone who does so will be asked to leave the venue. Finally, I'd ask that everyone present please turn off or turn their mobile phones to silent. Check that. Thank you. I will now call the first speaker or should I say counsel assisting will call the first speaker. Thank you for your forbearance.

MR S. FREE SC: Thank you, Professor. The first speaker is Mr Greg Duncan of Hume Coal. Can I ask Mr Duncan to come forward please.

MR G. DUNCAN: Good morning everyone. My name's Greg Duncan and I'm the project director from Hume Coal. This morning I have a presentation that will cover the high points of the project and also try to address some of the issues that people in the public are very mindful of. First of all, POSCO in Australia. POSCO has been in Australia since 1981. It's currently involved in nine joint ventures and invested more than 5 billion by the end of 2018. Purchased approximately 7 billion worth of raw materials, that's iron ore, coal and other commodities, from Australia per annum and currently purchase approximately $500 million worth of coal from NSW per annum.

POSCO Hume Coal Project

The project was acquired as part of a joint venture back in 2010. POSCO then acquired 100 per cent of the project in 2013 and by the end of 2019 had spent approximately $200 million on the project. Project description, the Hume Coal Project. Low impact underground mine and the key metrics are 50 million tonnes ROM coal from the Wongawilli seam, 39 million tonnes saleable coal over a 23 year mine life. 55 per cent is met coal and 45 per cent is thermal coal. Nominally three million tonnes per annum and 373 million NPV of direct benefits to NSW and 161 NPV of benefits to the local area. In construction is approximately 400 jobs, in operations there'll be 300. To date, some 600 individuals and businesses have registered expressions of interest in the project.

The Berrima Rail Project

A new one-kilometre rail spur and loop connecting the existing rail infrastructure. Coal will be railed to Port Kembla. Up to four million tonnes of rail capacity is available currently on the line. Bulk capacity is approximately 18 million tonnes per annum and currently 13.3 million tonnes is unused; in other words, it's underutilised. Up to five train movements per day for the three million tonnes per annum and covered coal wagons will be utilised, both delivering coal to Port Kembla but also the empty wagons coming back to the mine site.

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Bit of the History

Exploration licences in the area back in 1956. In 1985 they were consolidated into the current EL area and then 2015 preliminary environmental assessment report lodged with DP&E. In 2017, lodged a development application.

Project Location

Rail links to Port Kembla coal terminal are currently underutilised as ..... agreed to accept coal from Hume Coal Project. Close to Moss Vale Enterprise Corridor, an area established by the local council to encourage increased industrial and employment, generating land uses in the area. Surface infrastructures are situated on predominantly cleared land to avoid sensitive environmental features. Due to the underground non-coking nature of the mine, existing land uses will continue across approximately 98 per cent of the project area.

Project Location

Approximately – Berrima is located to the north of the project area, Moss Vale to the east. The blue represents the enterprise zone, established by the council. The yellowish area is the infrastructure and access area to the proposed mine. It's on Hume owned land. The mining area initially is to the west under the Belanglo State Forest, then moves south into Suttons Forest. It's bounded generally by Golden Bar Road in the east, Illawarra highway in the south, truncated by the Hume Highway and, as I said previously, it extends out into the Belanglo State Forest.

Best Practice Impact Mitigation

The project design includes features that exceed the normal practices used in Australian coalmines and go beyond minimum regulatory standards, in particular, negligible ..... which greatly reduce the surface and groundwater impacts, ... panels with bulkheads after extraction to allow for reject backfilling and early recovery of groundwater. Rejects will be placed underground, removing the need for permanent surface emplacement. Full and empty coal wagons will travel to and from the mine covered. DP&E assessment. DP&E assessed the potential impacts including noise, vibration, air quality, greenhouse gas emission, traffic, biodiversity, ... agriculture and rehab and concluded these potential impacts would be similar to or less than other approved underground mining projects. The department accepts that these potential impacts are likely to be able to be managed, mitigated or offset to achieve an acceptable level of environmental performance.

Community

31 of the individual community submissions were in support of the project, 69 per cent objected. The majority of the individual community submissions from the local government area opposed the project. The majority of the submissions from local

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government areas that surrounded the project area, ie, Wollongong, Shellharbour, Kiama and Goulburn, support the project. The majority of the objections were in the form letter, approximately 92 per cent, and 40 per cent of the form letters came from Sydney.

Mine Design and Exploration

The area has been heavily explored since 1956. In actual fact, within the current EL area there's some 345 holes. Of the 340, 179 are within the mine area itself. The EL area occupies approximately 89 square kilometres and the mining lease application area is somewhat less than half, at 35 square kilometres.

Geological Structure

One of the key element in carrying out the mine design is to look at the geology, in particular, aspects of the geology that may impact on the mine design. In particular here, we have looked long and extensively at both structures, such as faulting and igneous intrusions. The final mine design that we came up with has taken into account those identified structures within the mine lease area.

Key Considerations

No overburden caving. Overburden fracturing can be either prevented or, worse, maintained to insignificant levels to minimise groundwater inflows. Complete mine workings must remain accessible for – to be stable for coal preparation planned rejects and placement and disposal. The mine layout can be subdivided into discrete mining panels that can be permanently sealed soon after mining when a panel is completed so as to allow work ..... to become flooded as soon as possible.

Key Considerations

During the project's life, we have looked at a number of mining operations and these include miniwall system, which is the blue dot at the top, a Clarence ..... mining system where you reduce pillar through different mining techniques, first workings only, and the current system of mining we've come up with. What is apparent is that the more coal you take out of the ground, the greater the impact and the more groundwater that you take into the mine.

System Design Process

It's been long and it started back in 2014, where we presented a concept to DP&E, a conceptual project development plan reviewed by DRE, risk assessment workshops conducted in March '15, update to DP&E May '15, attitude review of EIS by DP&E in '16, further risk assessment review, DP&E review, independent experts – that was

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in November ’17 – 3D numerical modelling validate updated design, and results of 3D modelling provided to DP&E experts in March ’18.

The Mine Design

The actual mine design is not a lot different from other underground coalmines that exist in NSW and interstate. Specifically, looking at these roadways here – main headings as we call them – the same in every coalmine – underground coalmine in NSW. The panel roadways here are, again, nearly identical to the majority of the underground coalmines. The only area that was a little bit different is this area here, where we do plunge mining. This is highlighted in this area here. Again, main headings, panel headings and plunge mining system. The ..... regulator, when it reviewed the proposal, said this method of mining is a variation of the Wongawilli pillar extraction method. For those who aren’t familiar with it, the Wongawilli pillar extraction method was in place for decades in NSW. So the significant difference between what their interpretation is and our proposed mining is in these drives here we do not extract the coal between the drives. In the Wongawilli system the coal is extracted, hence, the roof cave and subsidence issues on the surface. We’re leaving those ..... pillars intact so as to avoid the same situation.

Mine Design Bulkhead Location

One of the key elements of the mine design was the storage of the rejects underground and allowing for the early recovery of the water. The mine itself is being divided up into a couple of areas. This area here, the mining goes down-dip, or downhill and then recruits back up hill. The water and rejects are placed in the voids and then the area is sealed by a bulkhead. These bulkheads are actually located at the start of the panel in an area that is long term geotechnically stable. They are not located within the panel itself. The majority of the panels are designed to be down-dip at the bulkhead sites. Remedial work would not require pumping of the panel and bulkheads are located in long term stable areas. This is just a cross-section of one such area, where the water is stored below the bulkhead.

High-Risk Activities

Another issue that has raised concerns amongst people is the type of activity we’re undertaking. This spreadsheet – and I apologise, it’s busy but it looks at current underground mines in NSW and the green area actually highlights where they carry out a range of high risk activities. These high risk activities actually occur and are carried out either on a day-to-day basis or intermittently, depending on the nature of activity. Most mining systems in underground coalmines in NSW are subject to a high risk activity notification and the associated work. The area highlighted in blue indicates where mines actually store water underground. So the Hume Coal Project storing water underground in panels with bulkhead is not exactly unique to the mining industry.

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Water: the level of impact

The statement was made the project is predicted to have significant impacts in highly productive groundwater aquifers. Depressurisation and drawdown extent from the Hume is modest compared to many assessed mining projects in NSW. The aquifer interference policy defines highly productive aquifers as those that yield in excess of five litres a second. NSW Government database reports:

> *The average yield of bores within nine kilometres of Hume Coal Project having a yield of two litres a second. Based on this, the aquifer cannot be defined as a highly productive aquifer.*

There's also a statement that:

> *Drawdown impacts on this aquifer will be the most significant of any mining project that has been assessed in NSW.*

I will address that in the next couple of slides.

Level of Impact in Comparison to other Mines

A distance to ..... drawdown from the edge of the mine workings and this looks at various mines throughout NSW: Southern Coalfields, Gunnedah, the Hunter Valley and Southern Coalfields again. Hume is quite low by comparison to quite a number of other mines. I refute the fact that we would be the most significant impact of any mine approved. Again, the level of impact; this looks at the groundwater inflow to open cut and underground mines, again looking at mines in different regions and again the Hume one is not the most significant one in NSW.

Make Good

This is a significant issue for the project because a number of bores will have various levels of impact over the life of the mine.

The Strategy

The make-good strategy in five-year lots. Other operators do this with their extraction management plans. There's flexible and suitable arrangements made for each individual landholder as the potential impact on each landowner and when it will occur is different. Make good is a landowner entitlement. If they don't choose to exercise that right, then there is no dispute. It is a ..... in arrangement. 64 bores, or ..... of the affected bores made good with minor strategies such as increased pumping costs and lowering pump into the bore. As you can see on the table, the impact on the bores is spread out in five year lots. 16 bores in the first five years, followed by

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24 in the second five, 23 in the third and then it drops away to 15 between years 15 and 28 .....

PROF FELL: Could you finish up in the next minute.

MR DUNCAN: Sorry?

PROF FELL: Could you finish up in the next minute or so.

MR DUNCAN: Finish?

PROF FELL: One to two minutes.

MR DUNCAN: ..... net direct economic benefits – a comment was made about the relative low economic benefit of the Hume Coal Project. When you compare it to other approved projects, for instance, 200 million major economic benefits, 311 million extensive benefits, 125 significant, 57 significant and 436 million ..... Department ..... satisfied – compared to other coal mining operations, Hume Coal will deliver significant economic benefits for minimal environmental impacts.

PROF FELL: Thank you. Yes. Would you care for – we have one question.

MR G. GATES: Just quickly, Greig. You didn't mention anything about groundwater quality after the mining occurs. Can you tell us, well, to what extent the groundwater deteriorate in quality and where would the groundwater discharge?

MR DUNCAN: In terms of quality, the groundwater will be pumped back underground with the rejects. It provides a medium for transport ..... rejects underground. With the water – will be approximately one per cent of a material that will help maintain the pH of the water so you don't get deterioration of the water. The water going back underground will be of similar quality of the water that has been extracted.

PROF FELL: I think we have - - -

MR FREE: Mr Duncan, can I just ask you a couple of brief questions. Firstly, can you just explain briefly the difference between - - -

MR DUNCAN: Could you raise the - - -

MR FREE: Sorry. Can you just ..... explain briefly the difference between hard and soft coking coals and the differences in their use?

MR DUNCAN: It's ..... the coal itself is a hard coking coal or a semi-hard coking coal. In terms of hard coking coal, the south coast area is the source of hard coking coal in New South Wales. In terms of thermal coal, quite obviously thermal coal is produced in other parts of New South Wales – the Hunter Valley, Gunnedah Basin

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etcetera. But the ..... the main product from the mine will be the met coal, the coking coal.

MR FREE: Thank you. And if the project was to proceed, would the coal be sold to countries that are signatories to the Paris Climate Accord?

MR DUNCAN: Sorry. I just can't - - -

MR FREE: If the project is to proceed, is the coal going to be sold to countries that are signatories to the Paris Climate Accord?

MR DUNCAN: I would have to take that question on notice and respond later. Thank you.

MR FREE: Thank you.

PROF FELL: Thank you. The next speaker.

MR FREE: Thank you. The next speaker is Mr Clay Preshaw from the department of Planning and Environment.

MS A. TUOR: ..... I did have a question but it's .....

PROF FELL: Sorry.

MR FREE: I'm sorry. Did you – I'm sorry. There was one further question.

MS TUOR: Sorry. You mentioned the importance of geology in the mine design.

MR DUNCAN: Yes.

MS TUOR: A number of the concerns that have been raised in the submissions are about the lack of geological data that has been obtained prior to the mine design. So can you just explain your position on this?

MR DUNCAN: In terms of the exploration, as I indicated previously, over the life of the various holders of the exploration leases, there's quite a number of holes have been drilled ..... within the mine area – out of 345 holes approximately – well over 100 have actually been cored holes and properly analysed. The information we've received from those bores and the analysis of those bores has led to the identification of where significant structures are, both in terms of faulting and igneous intrusions. And, as indicated previously, these have been included in the layout of the mine design but also in the production schedule.

So where a fault has been identified, the production schedule has been modified to take that into account. So that has been included in the – ultimately, in the economics. To give you an example, some of the mines around the south coast in

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actual fact have been developed on five bores only. So I would consider the number of bores that exist with the Hume Coal Project to be more than adequate in determining where the structure – major structures are, major intrusions, faulting etcetera and then the development of a proper mine plan.

PROF FELL: Thank you. Anything further?

MR FREE: Thank you, Mr Duncan. Mr Preshaw. Thank you.

MR C. PRESHAW: Good morning. My name is Clay Preshaw. And my role is a Director of Resource and Energy Assessments at the department of Planning and Environment. I guess I would first like to thank the Commission for allowing me the opportunity to speak this morning.

MR FREE: I'm sorry - - -

MR PRESHAW: I will speak more into the microphone. Is that better? Okay. Well, let's get started. If I can just move this along. Okay. So just a quick outline of the structure of my presentation, just so you understand what I'm going to talk about. First of all, I guess it's basically to explain the department's process in how it came to its recommendation. So I will start with a brief outline of the department's assessment process, the engagement process that we went through that led to the recommendations, just some background about the project and strategic context, not to repeat what Greig and the Commission Members have already said, but getting straight into some of the key assessment issues and then how we evaluated the project and what the next steps are.

So what is the role of the department? Now, I know I've met a lot of people in the room here today. And some of you may be very familiar with what we do at the department but basically our governing legislation is the Environment Planning and Assessment Act 1979. And, in broad terms, there are two types of planning the department of Planning and Environment does. One is the strategic side of things and the other is the assessment. So, on one side, we're, sort of, making the rules and the controls. On the other side, we're applying them to particular types of projects and developments.

So that's what the department does as a whole. Within the division that I work in, which is Planning Services, which deals with the – all the assessments of State Significant Development, there are certain categories of development that are not assessed by councils, for example, but go directly to the State Government for assessment. Coal mines are classified as State Significant Development and the Berrima Rail Project captured by that particular categorisation. And then, sort of, drilling down a bit further, I work within a branch which is the Resource and Energy Projects branch. And so we have a lot of experience in dealing with mining projects, with power stations, with renewable energy, wind, solar, pumped hydro. And I've personally been working in this area for about eight to 10 years, so I'm very familiar with these types of projects.

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Just moving on to, you know, what is the assessment process because it can be confusing to people and it's not necessarily the same for every project. So I thought I would just quickly pull up this slide to outline if you can see, you know, where we are in the process for this particular project. Look, we understand that people probably do want us to make a decision sooner rather than later on this project, but it is important that we go through a very comprehensive process and ensure that the right decision is made at the end of the day and that all the voices that are relevant to this project are heard throughout the process.

So State Significant projects go through a lot of steps. You can see that on the screen there. Complex mining projects like this one – go through each of those very carefully and that, I guess, explains why the process has taken quite a long time already. It is important to say that while the department has prepared an assessment report, which is the – I guess the brown in the middle there, with recommendations, that is based on the information we have currently before us. It's important for me to say that that is by no means the end of the process. And you can see that after the public hearings and the IPC has prepared its report, the applicant will have a chance to respond to that report before we finalise our assessment and put up a final recommendation to the IPC for a determination.

So how was this particular project assessed? So the legislation sets out a range of matters that we must consider. For some of the simpler assessments I guess these matters are kind of wrapped up into one general kind of assessment. It's not always necessary to break down each of the – the mandatory matters for consideration, but in this case the department has actually carefully considered each of the matters in this assessment of this project.

So starting with submissions, these are the formal submissions that are made during the exhibition process of the EIS, then moving into the impacts of the project – the environmental, the social, the economic impacts; the suitability of the site, taking into account the specific nature and scale of the proposed development – and that's a particularly relevant one for a complex mining project like this one; then there's provisions of the environmental planning instruments – so that's essentially the LEP and then state environmental planning policies and there are a number of policies that are relevant to this particular project; and the final one is the public interest which is I guess an overarching consideration and it includes, among other things, considering ecologically sustainable development.

So we've done a very careful process of working through each of those mandatory matters for consideration and you can see that in our assessment report. So moving to the second sort of broad area in terms of engagement, the first question I've put up there is who did we consult with on this project and I think it's fair to say we consulted with a lot of people and we've really tried to canvas as many viewpoints as we can. So breaking it down a little bit further, you know, we've got the community and the general public. There are formal statutory opportunities to comment and that includes the exhibition process, the formal written submissions and now this opportunity through the IPC public hearings.

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But the department has also gone above and beyond the minimum statutory requirements with our community information sessions and site visits and other meetings and teleconferences throughout the process. The second key stakeholder has been the relevant government agencies. So the department in some ways plays a coordinating role in its assessment of these types of projects. So it relies quite extensively on the expertise of other government agencies, for example, the Environmental Protection Authority – the EPA; Water New South Wales; the Office of Environment and Heritage, just to name a few. We've consulted with all of these agencies at every stage of the process so far.

And the third key stakeholder – cannot ignore it – is the applicant and their various consultants. So we understand the company has already invested a significant amount of time and resources into this project and this assessment process and it's essential that we meet with them on a regular basis which we have done. Sometimes it's just a status update. Sometimes it's to clarify technical issues and sometimes it's very detailed meetings with a range of different experts from agencies and our independent experts. So, look, there is a lot at stake here in this project, especially for the local community and especially for the company, but also for the people on New South Wales and potentially even for the mining industry in general.

So that's why we've taken a very comprehensive approach to the engagement. And I guess the final thing I would say on that slide is while there is no formal statutory requirement past the submissions to the commission, I will assure people here that the department will continue to consult with all of these relevant stakeholders as the project progresses through its final stages. So with this particular project, the department recognised early on that it was a very – it is a very complex project and, as I mentioned earlier, while the department has a lot of experience dealing with complex resource and energy projects, we acknowledge that we are in some ways, you know, jack of all trades, master of none within the government, so we often rely on the advice of the specialist government agencies quite heavily, which we have here.

But in this case we've actually identified a number of issues early on that we felt needed independent expert advice and so we undertook what I would call a far-reaching search for the best people available in their particular areas. So in terms of the mine design and the mine engineering, we actually got two separate people to provide the advice: Emeritus Professor Jim Galvin and Professor Ismet Canbulat. In terms of groundwater, we had Mr Hugh Middlemis who was involved in the Australian Water Guidelines; Dr Renzo Tonin, a highly eminent noise expert; and Mr Andrew Tessler on economics. So just a quick summary, you can sort of see – you might not be able to read what's there, it's straight from our report – but essentially, we've done a lot of engagement.

And that's just a summary of what we've done: it's five site visits, two community information sessions, four project briefings, a variety of other meetings. It's not even an exhaustive list; it doesn't capture all the telephone calls my team takes, the government agency meetings, the expert meetings, meetings with the company and

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its consultants. Now moving on to the project and its strategic context – so what is the project? I think the Commission and the company have probably provided enough details about this. I will just make the point that while there are two separate applications, we are essentially talking about one combined project that consists of an underground mine, the surface facilities and a rail infrastructure to haul the coal. I will move on from that quickly.

To us, one of the key aspects of the project – I think it is worth just upfront mentioning – or recognising the project design aspects that the company has put forward that have contributed to avoiding and minimising some of the environmental and social impacts that may have otherwise occurred. So locating the surface facilities away from most of the sensitive receivers, near a major highway, on land that is largely cleared of native vegetation, it's near existing infrastructure, it's within or near to an existing industrial area identified by council.

So the company has tried to locate the project I think in a way that avoids and minimises many of the potential impacts, but nonetheless there is, I guess, two key aspects of the project that we think need particular attention, and one is the mining method which is obviously the pine feather and storage – and also related to that is the storage of large amounts of mine water underground. And the second thing is, as I say, the storage of mine water which is in our view and based on the advice that we've had from our experts unique in the particular way that the company is proposing to do it. So the department has considered these aspects of the project very carefully.

We note the company has raised some dispute, even today, about the relative uniqueness of those aspects, but that is a finding that we have made based on the expertise within our government agencies and the advice of our independent experts. So where is the project located? The project setting is a very important consideration in the assessment of any new coal mine. As I mentioned earlier, the suitability of the site is actually a mandatory consideration under the legislation. So firstly in terms of the regional setting, the acknowledge that the region has a strong coalmining history, but we also recognise that the region is now probably more renowned for its rural landscapes, scenic qualities and tourism.

In terms of the local setting, it's relevant to note that it is actually an area of relatively high density of properties, particularly for a new greenfield coal mine. In terms of the environmental setting, the key point to make there is that it is located within the Sydney drinking water catchment which means that any development that occurs in those areas is subject to the NorBE test – the neutral or beneficial effect. And in terms of geology, there has been some discussion earlier today, but it is different in some ways to other areas within the southern coal field. I would draw your attention to the fact that the sedimentary rock that exists in other parts of the southern coalfield is actually missing here and it's usually located just above the coal seam.

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In this particular area, the Hawkesbury sandstone is either right next to the coal seam or very close and the Hawkesbury sandstone is where we find those productive aquifers. So I will get straight into the two key issues that we have assessed in our assessment report. And, look, I think within groundwater which is the first and probably the foremost issue that we've assessed, there are two things I will quickly cover: firstly, the impacts to the groundwater aquifer, and secondly, the ability to make good on those impacts.

So the department and the department of Industry, Lands and Water both considered the impacts to be unprecedented. I note that Hume Coal has presented some comparative figures in the previous presentation and to the Commission previously on how it compares to some other mines, noting that – it's the two things that I saw on the screen earlier were in relation to distance from the mining boundary and the amount of groundwater inflows, but it didn't address the comparison of the number of bores affected.

So depending how you measure it, whether it's the 67th percentile or the 90th percentile, it's probably not really material to the overall decision. You're talking about between 94 and 118 bores – privately held bores that would be affected by the project. There are some other relevant facts that I think are worth pointing out in terms of the area of impact. It's obviously a very expensive area around the proposed mine. The number of affected landowners is approximately 72. The level of drawdown is up to 47 metres and the duration is up to 76 years, so while I accept that there might be other mines where the inflows are greater or the extent is further away, certainly the number of bores that are affected by this project is really unprecedented, in our view, and in the view of the department of Industry Lands and Water.

So then you move into the issue of make good, which is part of the Aquifer Interference Policy. If there is going to impacts of that nature, we need to have some comfort that those impacts can be made good, and looking in very broad terms, the department is not comfortable based on the information it has before it right now that that is likely to occur, and we are certainly concerned that if the project was to go ahead, we would end up in a very difficult situation, problem dispute resolution processes around how to make good on those impacts and how the company and the government and the private land owners would come to an agreement about how to make those impacts good. Quickly moving onto the second issue, mine design. Is that better?

PROF FELL: Please.

MR PRESHAW: Okay. I will. So I will talk closer to the mic, if that's better. So the second key issue that we looked at is the mine design. Is that better? Okay. Is the Commission – would the Commission like me to go back and do the groundwater section again?

PROF FELL: Well, it's in your – your time is the problem.

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MR PRESHAW: I'm just conscious of time, so - - -

MS .....: Yes, please.

MR PRESHAW: Okay. I will do a very quick summary of my last slide.

PROF FELL: Please.

MR PRESHAW: Just for the benefit of the crowds. So, look, what I said in relation to groundwater is that there are two key aspects that we've assessed. One is the actual nature and scale of the impacts. And, in our view, and in the view of the department of Industry, Lands and Water, the number of affected bores, privately held bores, would be unprecedented in the history that we've seen on coal mining projects. We note that company's concern – comparisons to other mines in relation to the level of groundwater inflows and the extent around the boundary of the project, but when we're saying that it has an unprecedented level of impact, we are in fact referring to the number of bores affected and the number of landowners. I think that's probably the key point to make there. And the second aspect of groundwater that we've assessed is our concerns around the company's ability to make good on those impacts.

And I mentioned that it's likely, in our view, to end up in a difficult and complex process of dispute resolution, and we believe that there is not enough certainty, from our perspective, that those impacts are – will be made good if the project is improved. So I will move on to the mine design. I hope that clarifies things for people. So, look, the mine design is certainly an unconventional mine design, in our experience, and based on the advice we've got from our two mining engineering experts.

There is still some uncertainty around the geotechnical model and the predictions that it makes, and, in our view, and based on the advice we're getting from both the resources regulator and our independent experts, there are a number of safety risks that we have not been – resolved at this point, and we believe that that is particularly relevant for our assessment because those safety risks have the potential to cause environmental risks. In particular, we are concerned that those safety risks may mean that the company's ability to store large amounts of produced mine water underground may not be available and that water will then need to be brought to the surface and dealt with in some way.

Given that it's in the Sydney's drinking water catchment, we would be concerned that based on what the project is currently proposed as, there is no ability to treat the water and ensure that the catchment would not be adversely affected and therefore it may not mean the mutual or beneficial effect test. So that's really in a nutshell our concerns around mine design. There's a lot more detail in our assessment report and the accompanying reports from our individual – independent experts. So you might ask, "Well, what about all the other issues?" And I have to assure everybody that we did do a very comprehensive assessment of all of the other issues and while the

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assessment report focuses very much on the first two things that I spoke about today, there is a summary of our assessment of the other issues and including economics, social impacts, and then the other things listed on that page there.

But in general we believe the first two issues are of the most importance and that's why we focused on those. So how do we evaluate the project? Well, we have to weigh up the mandatory matters of consideration. Those are the five things that I mentioned earlier. What it essentially often comes down to is a triple bottom line assessment which is balancing the environmental impacts, the social impacts and economic benefits or impacts. And so I guess this is the second last slide. What is our overall evaluation of the project? Look, again, we acknowledge that the company has gone to great lengths to design the project to try and avoid and minimise impacts.

And we also acknowledge that they've done a substantial amount of work trying to respond to submissions and concerns in the community. We also recognise that there are potential economic benefits of the project. The exact nature of those benefits has not, I guess, been clarified between the various experts, but there is certainly likely to be some potential economic benefits. However, considering the mandatory matters that we have to take into account, the number of submissions, over 12,000 for both projects with 96 per cent objections; as I've mentioned, residual concerns around water impacts and mine design; certainly concerns about the suitability of the site for a new Greenfields Coal mine; the provisions of various environmental planning instructions, particularly the mining SEPP which includes issues around compatibility of land uses; and, finally, the public interest, which includes considering ecologically sustainable development. So just very quickly, my final slide. What are the next steps? And I do - - -

PROF FELL: Very quickly, please.

MR PRESHAW: I just one to make it clear that there are further steps and that this is our preliminary assessment as it stands. So we will get the IPC report following the public hearing. The applicant will have a chance to respond to that. The ..... will then do its final assessment. That will involve further impact from all the relevant stakeholders. We will make a final recommendation to the Commission and then the Commission will ultimately make the decision on the project. I thank you for your time.

PROF FELL: Thank you. I note that we've got a bit of a problem about amplification. I'm told that it is turned up as high it can be. So could I ask future speakers to hold the microphone very close to their mouth.

MR PRESHAW: Yes, I'm talking pretty much lips to the mic right now.

PROF FELL: Thank you very much. Sorry. Questions.

MR PRESHAW: Any questions?

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PROF FELL: Yes, we have one.

MS TUOR: The proponent put forward a slide in relation to economic benefits of the project, and I understand there is some disagreement between the proponents figures and the department's independent experts' figures, but there's a general conclusion that whatever figure you use, the economic benefits, while there will be some, would be marginal. That's my understanding from the department's report. But the proponent's slide presented information on other mine projects which have a lesser amount where the economic benefits have been considered to be significant or greater. So I just – realising you haven't had a chance to look at that.

MR PRESHAW: Yes.

MS TUOR: But have you got any comments on that?

MR PRESHAW: I do, actually. If I had a bit more time I would have quickly addressed that. So that's – that slide that was up today, it actually had some projects listed. That's the first time I've had the opportunity to see that. I actually was looking at the presentation that the company did to the Commission previously, and I noticed that those names of the mines were blacked out, so I couldn't work out what mines they were referring to. When the company quickly flashed it up earlier today, and so just – I will caveat, I only had a very quick look at it – it appeared to me that perhaps we're not considering – we're not comparing apples to apples because I think from the projects I saw there, those projects would be considering mining extension projects as opposed to a new Greenfields mine.

And in my experience, typically when you have an existing mine and you look to extend the project to build on it or expand on it, the benefits are usually not as great as when you go in and you build an entirely new mine. So obviously with the Hume Coal Project we're talking about an entirely new mine, and so I would expect the benefits – the predicted economic benefits to be very high, and I'm not sure if you did a similar comparison to what the company appears to have done, and again, just saying what was very briefly seen on the screen, I think if you did a similar comparison to new Greenfields' mines, you might find a different result there, so in my view that might not be an apples to apples comparison.

PROF FELL: The panel has one more question.

MR G. SHARROCK: Thanks very much. Thanks for your presentation. You mentioned ..... you also mentioned that the experts from both proponent and the department have some points of disagreement and they were – am I right in saying there's still some disagreement about the geotech model, there's still some disagreement about the thickness of the pillars themselves, there's still some disagreement about lack of geological data. And I guess the department's view is you have an expert panel – you had the experts meet chaired by an independent professor and still all those matters have not been resolved to your satisfaction, so that's – they are among the reasons why your recommendation is as it is?

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MR PRESHAW: I think that's largely a fair summary of where we're at. I think you mentioned that there was disagreement about the thickness of the pillars. I would probably clarify. I think the disagreement is not so much about what the proposed thickness is, but about what the stability of the pillars is, particularly in terms of the regional stability as opposed to the individual stability, but, in large part, I think I agree with what you said.

We did have a meeting, a very, I would say, unusual meeting for us to arrange, but it really was to try and bring things to a head between the experts. And I think it was successful to some degree in clarifying what the key issues were, but there were certainly some issues that were not resolved by that meeting. And that was – we literally flew a professor down from Queensland and we had everybody in the room. We probably got some way to clarifying the outstanding contentious issues and I think you're right in saying – you know, our uncertainty – residual uncertainty does affect our ability to make a clear assessment of the project and has certainly influenced our final recommendation on the project.

MR SHARROCK: Thank you.

PROF FELL: Thank you.

MR FREE: Thanks, Mr Preshaw. The next speaker is the Honourable Pru Goward, MP.

MS P. GOWARD: Thank you. And I don't have a presentation, so you will just have to take my words literally. Commissioners, this was not a populist decision on my part or on the part of people who came to see me in the very early days of this proposal in 2010. Clearly, there were employment considerations. New South Wales – the economy of New South Wales in 2010 was on its knees. We ranked at the bottom of every economic indicator. So there were very good reasons and popular reasons to support the project, but it seemed to me that there was also a trade-off involved between those jobs that could be created in a mine and the jobs that are and would be increasingly forthcoming from our high value agriculture and our tourism. And I thought that we could trade off one against the other without damaging the prospects for employment in this region.

I had by then been a member for almost three years and I was very conscious of the calls by parents for jobs for their children to be in the region and for people not to have to travel for work. But it was always my view that we could with a strong economic Government, with strong economic leadership, ensure that those jobs that people wanted were available without the need to ..... defer to mining. And as it has come to pass, New South Wales now has the record lowest unemployment rate in Australia. But people within this room will remember – and I would call to the Commissioners' attention – the debate over the Kangaloon Aquifer which began in 2010 when the department of Water wanted to extract water from the Kangaloon Aquifer to provide drinking water to Sydney which was then suffering from significant drought.

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And the argument that the government of the time made about the importance of that aquifer are exactly the reasons why we should preserve an aquifer today, that it was a significant resource and that it was a resource that fed one way or another into Sydney but also provided significant utility to local people. So it has always been my view that the essential issue for this mine was what do we do about preserving the aquifers, the quite unique aquifers and the quality of aquifers that are beneath the proposed – or part of the proposed mine? And, remember, this is not a greenfield site in the sense that it is a remote area without anybody in it or existing industry. It is a well settled agricultural region, a very extensive settlement and, as you can see by the very large number of private bores that would be affected by the area, it is closely settled. So it seemed to me that on the grounds of the damage to the aquifer alone, there were grounds for serious, serious concern.

Subsequent to 2010 when the first community meeting was held – and it was then quite clear that there were a number of people concerned about the impact on the aquifer that lived locally, the community has done a magnificent job in developing the scientific and engineering studies and research that was needed, with extensive local fundraising, to provide the Commission and the department with well-founded and well-developed arguments. It has always been my view that the merits of a case ought to determine its outcome. You do not need political interference. You do not need secrecy when you have a transparent process. Painful, as I have to say it has been, but it has been transparent and it has been well supported by factual evidence.

And I believe that the community's response and their respect for science and their respect for facts has got us to where we are today. When I became the Planning Minister for a short period, it was very clear to me that if we did establish a coal mine in the Southern Highlands, it would not be the last and having flown over the Hunter Valley, it was quite clear to me that this could easily become another Hunter Valley, another moonscape, and that the precedent would then be set. Obviously, I have no scientific expertise of my own or engineering expertise of my own and those issues, of course, are for the experts to decide, but there is enough coal under New South Wales to enable this state to mine where it works, to not mine where it does not, to assess each proposal on its merits, transparently, without fear or favour and my recommendation to the Commission is that that occur in this case as I'm sure the Commission practises and that there is no case for a mine in this beautiful area of New South Wales. Thank you.

PROF FELL: Thank you.

MR FREE: Thank you. The next speaker is Councillor Larry Whipper.

PROF FELL: Thank you.

MR L. WHIPPER: So I would like to thank the panel and the indulgence. I did request five to 10 minutes. I have to say this is pushing closer to the 10 minutes. I'm looking at the timekeeper and ask for your indulgence. I have no formal presentation prepared, so I'm just going to read my presentation, and I would like to start by

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acknowledging the traditional custodians of this land that we're meeting on, and the fact that the land that we are actually and fighting for is, always was and always will be, the traditional land of the Gundungurra People. Mr Barry Arthur will provide council's formal presentation a little later on and that is the officially endorsed submission of council to Hume Coal proposal.

Today I speak as a councillor of Wingecarribee Shire and an elected representative who has served the people of Wingecarribee for 20 years. In this time, I have served as both Mayor and Deputy Mayor. I speak as the chair of council's environment and sustainability committee, a role that I have held since 2001. Within the two decades, I have served as a board member on both the Hawkesbury-Nepean Catchment Authority and the Sydney Catchment Authority as well. I've also worked closely with the Aboriginal community and chaired council's Aboriginal advisory committee for many years. I take my role as an elected representative seriously and have given a commitment to fight to protect the shire and its vulnerable environment.

Along with council, I have ensured that we continue to invest in environmental protection and restoration by way of the implementation of an environment levy that was introduced approximately 15 years ago and which is now a permanent rate contribution, which all ratepayers in the shire contribute to. As a long-term councillor and elected representative in my fifth term, I have developed an insight into the social, cultural, psychological and environmental expectations of this community. The things that are important are more than obvious, particularly for those of us who live here and value them, for those who to desire to bring their children up in an environment that still provides clean air, abundant water and can boast a rich, natural environment and community-focused lifestyle.

Our local environment is unique with rich biodiversity, complex ecosystems, intricate waterways and a wide variety of landform, soils and living conditions. We also enjoy strong social empathy and low crime rates. The Wingecarribee is also home to over 370 native mammal, reptile and bird species, making it one of the most diverse regions in Australia. With over 7200 kilometres of waterways, the shire is also an important and critical water catchment region for both our environment and drinking water supplies not only locally, but also to Goulburn and Sydney. It is a landscape that includes rainforest, escarpment forest, woodlands, unique villages and also farmland.

Surely, this clean environment that is so highly valued by our community, and that provides substantial benefits to tourism and employment, and houses a unique and vulnerable world to biodiversity, must be protected from all and every activity that would threaten it. Surely, it is our intergenerational and moral responsibility to do all we can to provide opportunity for a healthy environment for future generations. There's no doubt in my mind that these values are embraced by the vast majority living here in our shire. There is an expectation that this lifestyle should not, and cannot, be compromised for short-term profit from a totally unsustainable industry which threatens our unique environment, our web of biodiversity, an irreplaceable and vulnerable ground and surface water reserves.

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I also believe that the Hume Coal Project has a very real potential to destroy the tourism industry, which is the biggest economic driver in our shire. Based on the precautionary principle, we need to ensure the protection of people, plants and animals as well. As a previous stakeholder board member of the Sydney Catchment Authority, I'm acutely aware of the vulnerability and importance of our water catchment and water reserves. I've seen firsthand the impacts of mining on our water catchment areas and I give as an example the Waratah Rivulet. I have experienced the concerns of people living in the catchment in areas of our connections between mined areas of Cordeaux and Avon Dams, and I have also witnessed firsthand the impacts of mining on the Thirlmere Lake ecosystem.

I've stood by local protesters and landowners who fought to stop the pumping of the Kangaloon aquifers in 2006 and '7 fearing the impacts on farming land, the economic wellbeing of the area and the threat to ancient water within the aquifers themselves. I've seen the pollution of the Wingecarribee River and the negative and long-term effects of a relatively small coal mine at Medway which continues to spew its toxic poison into our drinking water catchment. I reference this history to illustrate the fact that, historically, there has been an ongoing fight from our community for the protection of our environment, lifestyle, sustainable economy and collective sanity before the threat – long before the threat from Hume Coal and POSCO.

I have no doubt that this spirit will manifest whenever it's needed. This strong unity and commonality of cause has been highlighted by the unrelenting resilience, patience and sincerity of the thousands of people in our shire that oppose this project. There is no doubt expressed by the number of submission – these are no doubt expressed by the numbers of submissions and concerns raised by way of submission against the proposal to establish POSCOs mine at Sutton Forest. In my opinion, the evidence, the science, the social, psychological environment and moral concerns expressed in opposition to this proposal are real and very valid.

As the chair of council's then community coal reference panel, I successfully moved a motion in 2012 for council to make a public statement in support of landowners to express their concerns to any activity, including mining, that may have the possible to threaten water and aquifers, and agricultural lands in the Wingecarribee. I also was appointed as council's representative on Hume Coal's water advisory group. This group is made up of representative stakeholders from the community and facilitated by Hume Coal. Having decades of experience on advisory groups and committees, I would have to say, in all honesty, that the Hume Coal's advisory group has been the only advisory group that I have ever attended that I did not really – that didn't invite the advice or value of its stakeholder members. In fact, I felt, in a lot of ways, it was dismissive and, at times, antagonistic of that advice.

I must also state that I have never seen such a collaborative or sustained level of opposition or common purpose as I have witnessed in opposition to this proposal. I was present at the community hall in Sutton Forest in August 2010 along with three other councillors, with The Honourable Pru Goward from the Liberal Party, also the

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Greens and the National Party candidates for the Federal seat of Throsby, where the hall was actually bursting with hundreds of people standing there and some actually standing out in the rain while, you know, the sweet talk was espoused from the pulpit by the experts of the then Cockatoo Coal.

So if we fast track now to 2019, that concern and resistance, rather than being dissipated or resolved, is now greater than ever. In spite of Hume Coal and POSCOs efforts to ingratiate themselves by making gifts to local sporting groups, community groups and others, in spite of their promises of jobs, which, in all reality, will probably end up with machines and roadworks, we're still told that this is a safe process, and we have those assurances and we're told that a totally un-trialled form of ..... mining is the answer, but, still, they haven't been able to convince our community that that's the case. We're being told that our groundwater will be unaffected, you know, when their own submission says they're going to pump back into the voids their slurry of toxic ooze.

So Hume Coal have not been able to fill the populous, the science, nor, more importantly, the court of public opinion. As an elected representative, I must honestly consider not only the economic, environmental and health risks of such a proposal as the Hume Coal proposal, I must also speak out strongly about the social impact, of psychological damage and emotional strain that has been perpetrated upon the residents of the Wingecarribee and particularly those of Sutton Forest and Berrima. I can't obviously say with any certainty that POSCO or Hume Coal have deliberately set about employing a strategy to divide and conquer the community, but I've witnessed directly the impact on people's lives. I would just like to acknowledge the Berejiklian Government's courage – I applaud that – and I also acknowledge the efforts of Pru Goward and Jai ..... in particular. Also Jeremy Buckingham – I'm almost at the end of this, if I could continue. Thank you.

PROF FELL: Please wind up soon.

MR WHIPPER: I will. Definitely. So I would like to acknowledge their support all the way through this. In conclusion, I would like to point out that three successive councils have opposed this project. On 25 August 2010, council resolved via a formal mayoral minute to appoint:

> *...the mayor and two councillor representatives to take an active role in any group action that is formed and the council is willing to assist such a group in any way possible.*

In fact, since 2010, council have endorsed several resolutions that have raised significant concerns and question the merit of the Hume Coal proposal. I have attached these and can make them available to the IPC if desired. In 2015, council resolved - - -

PROF FELL: Sorry. Last few seconds, I'm afraid.

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MR WHIPPER: All right. Well, how about we make it a minute and then I can compromise with that. In 2015, council resolved to formalise its position by erecting a "Wingecarribee – A Coal Free Shire" sign at key locations throughout our shire, including out front of the civic centre. This position of council I sincerely believe reflects the feelings of the court of public opinion in our shire and stands in place today. I would ask the Commission to reject this proposal. Thank you.

PROF FELL: Thank you. Questions?

MR SHARROCK: Yes. I have a question.

PROF FELL: Yes.

MR SHARROCK: Thank you very much, Councillor Whipper. I listened with interest and I read your report - - -

MR WHIPPER: Thank you.

MR SHARROCK: - - - very carefully. You're aware the company has said that even though this methodology has not been – mining methodology has not been ..... underground in Australia, I notice – I'm just quoting from your report. You say that the activity of mining itself will never be deemed safe. Why do you include that?

MR WHIPPER: Deemed safe? Are you sure you're reading my report?

MR .....: Well, it says Councillor Whipper at the top.

MR WHIPPER: Does it? Okay. Well, that's not the proposal. I've got this current one here. But I don't think this - - -

MR SHARROCK: No, this - - -

MR WHIPPER: - - - methodology may be because obviously there's some areas where mining, you know, could be – I believe, you know, sort of not affect environments. In this instance, I don't believe it can be deemed safe inasmuch as we don't feel that our shire should be a guinea pig, you know, for these sorts of experiments. This has never been tried and that's a concern to us, definitely. Yes. Look, I've seen Waratah Rivulet where they've been pumping what amounts to epoxy down into great voids to try and plug it up and stop it. I mean, I've seen that first hand. That's just a nonsense. We can't play, you know, sort of Russian roulette with the future of - - -

MR GATES: Councillor, just one more question. You used a term "toxic" a couple of times in terms of what is going down into the ground. You don't feel that that can be made good with the addition of other chemicals?

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MR WHIPPER: No, I don't. I'm sorry. Not when it's in Sydney's catchment and not when this shire relies so heavily on those groundwater reserves, which we know are quite precious and irreplaceable. Okay?

MR GATES: Thank you.

MR FREE: Thank you, Councillor.

MR WHIPPER: Thank you.

MR FREE: The next speaker is Nic Clyde from the Lock the Gate Alliance.

MR N. CLYDE: Good morning, commissioners, and good morning ..... I'll keep my presentation very brief. My name's Nic Clyde from Lock the Gate Alliance. We represent – well, we work with communities all around Australia that find themselves fighting these sorts of inappropriate projects and it's been a great honour for Lock the Gate to work with this community and I'd just like to acknowledge some of the groups, Coal Free Southern Highlands, Battle for Berrima, and all of the ordinary community members in the Greater Sydney Region and in the Southern Highlands who've taken the trouble to try and understand the impacts of this project and put in submissions to the Department of Planning and to yourselves about this project.

It's tremendously important and I pay respect to all of those people and those fantastic organisations. From our perspective, I just want to reiterate, you know, some of the main problems with this project and I think, to paraphrase the Land & Environment Court in their ruling on the Gloucester Project just two weeks ago:

> *This is a risky project proposed for the wrong place at the wrong time.*

There simply is no social licence for Hume Coal's mine. The Department of Planning considers:

> *…that the project is not in the public interest and should not be approved.*

The Department of Planning and the Department of Water, as you guys know, consider that the impacts on the aquifer would be:

> *…the most significant for any mining project that has ever been assessed in NSW.*

Strong words. I also note, in – as a Sydneysider who's one of the five million people who depends on our drinking water catchment that in 2017 Water NSW said:

> *Unless the water table is properly managed and accounted for, the Hume Coal Project may significantly reduce the quantity of water in the Sydney catchment area and available for Water NSW supply requirements.*

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So that alarms me, someone who relies on that fresh water and my family for our livelihoods. And I just wanted to point out – just remind us in the room about the context of those statements about concerns about impact on water quality and indeed quantity. You know, we are in the middle of a drought, we – climate change is making our planet hotter, the weather in NSW is getting hotter. Hotter weather means more evaporation from our water storages. We also have a growing population in the Greater Sydney Region and, as the Commission would be aware, about a million people being added to our population every 10 years or so. So water is becoming more valuable and more precious, not less so.

We also know that if the desal plant is being switched on, that ..... our water – we will be paying more for our water. It's more expensive, it's more valuable. Now is not the time to compromise our water supply. And in fact, just last year Peter Ham has done some ground work in the Sydney Morning Herald. He pointed out that last year the Greater Sydney Region, we used 587 billion litres of water as a community. How much water flowed into our storages in that same time? 143 billion litres. So we used four times as much water as flowed into our storages. We cannot afford another project – a coalmining project that would compromise that water supply further.

Other speakers have already noted that this project is friendless essentially. It's not supported by local government, it is not supported by the local community. Indeed, I want to pay tribute to Battle for Berrima's work doing the Coal Free Declarations, the communities of Berrima, Medway and Exeter, and Burrawang. We have all self – declared themselves coal free and the average there is about 86 to 90 per cent of those people, when door-knocked, who said we don't want coal in our area. And I also note, as Clay Preshaw mentioned, 96, 97 per cent of submissions against this project of – sorry. 97 per cent of submissions were objections. So I think there's a very strong case that there is absolutely no social licence for this project and I'm glad the Department of Planning recognised that.

With the limited time that I've got available, I also just wanted to draw your attention to Rocky Hill decision. I'm sure we've all read that decision. Highly significant for this project here in the Southern Highlands. I think in many ways they're very similar projects. What that decision found – broad range, but of course this established an ..... on climate grounds – unless Hume Coal's project is carbon neutral, then the Land & Environment Court considers that it simply cannot go ahead. And both the learned judge there has set out in grey and methodical detail why that is the case and why it is not – simply not consistent with NSW planning law for a new coal mine to go ahead in NSW in terms of the Paris Agreement.

I also understand that there's legal advice now and I'm sure the Commission has a copy of that, that says the same thing – that points out that that decision should impact future coal mine assessments. So I also note that that same judgment heard expert evidence from ..... economic and financial analysis and that there in fact they pointed out that there simply is no demand for new metallurgical coal. The world already has enough coal approved. Australia has enough coal approved, enough

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capacity approved, to supply all of our needs and indeed to supply the seaborne and export market, and that was expert evidence that the learned judge accepted and quotes in his judgment.

So to be clear, the ..... – we need a reduction in capacity. We cannot afford new capacity, we don't need new capacity. And one of my final points, I just wanted to also raise to the attention of the panel and the room the Land & Environment Court also heard that a mixture of technological innovation driven by what the Paris Agreement demands, not just of the New South Wales Government and the Australian Government but the global community, is that we move away from traditional ways of steelmaking, and, in fact, that is happening now globally. So we have a new process in Sweden. We have an increased projection for use of recycled steel. There's substitution now, timber composites, for example, within the construction business for steel, and, in fact, one of the innovations is driven by POSCO itself which wasn't mentioned in Hume Coal's presentation this morning. But they also are working on a process to produce steel more efficiently. Theirs is still a coal-based process but using lesser quality coals.

So in a nutshell, then, I would highly commend the panel to Justice Preston's judgment. I think there's a lot of excellent information in there, and if – what it does, effectively, is reinforce what the Department of Planning has found. And it provides you with several more reasons to act in a way that's consistent with the Department of Planning's recommendation that this coal mine should not be approved, that it's the wrong mine in the wrong place at the wrong time and it is a risky project, and Lock the Gate Alliance completely supports the local communities and the outstanding community groups that have done so much work to bring these issues to your attention, to our attention. And I thank them again and your time for listening to me today. Thank you.

PROF FELL: I believe there's a question.

MR GATES: Nic, you mentioned how important the water issues were and they extend all the way down to Sydney. Do you happen to know how much water, if the mine was to go ahead, it would take out of the Warragamba catchment or would it be a large proportion or a small proportion?

MR CLYDE: No, look, I'm not across that detail, and – you know, we rely on Water New South Wales and other expert groups for that kind of analysis. And we also understand that water quality is an issue that has been raised in the department's report. So, look, I'm not sure if it's a large amount, if that's something that we've – what I was simply doing by drawing attention to Water New South Wales' comment is that that is an agency whose responsibility is to protect the drinking water and the freshwater supplies on which we all rely and that they pointed out in their submission that there are – it's a high-risk project and it is located in our drinking water catchment.

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And, with all of the other pressures that we have on our freshwater systems, it's just simply not appropriate to be – it's not commonsense to be developing new projects that would compromise that water, and, look – and the only additional comment we would make is that, you know, just in the paper yesterday, we were reading stories in our community of New South Wales of regional towns that are running out of water. Walgett, the Keepit Dam near Gunnedah is almost dry. It's only got .5 per cent of their water supply left.

So if – you know, if this is something that continues in New South Wales, as the Honourable Pru Goward mentioned earlier, you know, you have water here in this community. There is a viable aquifer. This is a resource that is valuable and will be more so in future. So we – from our perspective, it's simply too risky, and I would just support the government agencies that have done the work – the independent experts who've done the work who point that out. It's – and we don't need the coal. Why would you take such a huge risk with your freshwater resources when the experts tell us we simply don't need that new coal supply and, indeed, we can't afford to develop it anyway from a climate perspective?

MR .....: Hear, hear.

MR SHARROCK: Thanks for your presentation, but if I may just ask a question on almost the last few sentences you said. You mentioned a couple of times that we don't need this coal, but this project is promoted by POSCO. They're the fourth-largest iron – steel producer as well. I presume they want the coal. So how do you know they don't want the coal?

MR CLYDE: With respect, Geoff, I didn't say they don't want the coal. They obviously do or they wouldn't be spending $200 million developing their project to this point. What I said was we don't need the coal. The global market does not need the coal, and that – that's not me saying that. That's – that was the expert testimony that was presented to the Land and Environment Court by the Institute for Energy Economics and Financial Analysis. So they set that out in a very detailed manner.

That's a court of law where that testimony is subject to all the rigours of assessment in a court of law. The learned judge considered those submissions and accepted that and, indeed, wrote extensively on those findings in his judgment. So I would refer you to that judgment and anyone else in the room, indeed. If you want to understand that evidence, you can download it. It's on Caselaw New South Wales website. Go and have a read. There's only about 10 pages that describe that part of the judgment, and it is very illuminating.

MR SHARROCK: All right.

MR .....: Thank you.

MR SHARROCK: Thank you.

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MR .....: Thank you.

MR FREE: Thank you, Mr Clyde. Can I ask Keith Hart from the National Conservation Council, please, to come forward.

MR K. HART: Thank you, Commissioners. I'm very happy to be following our friends from the Lock the Gate Alliance. If you hear some similarities in our presentations, it's not because we've colluded but because we're singing from the same hymn sheet. Over the last four years, on behalf of New South Wales Nature Conservation Council, I would have read about 20 environmental impact statements attempting to justify various coal and coal seam gas projects in New South Wales. In many respects, the Hume Coal ES – EIS is the worst of these. The type of statement "There will be no significant impact from the project" occurs repeatedly through the Hume Coal EIS. This reflects a fundamental flaw in the environmental impact assessment regime in Australia. Distinguished environmental lawyer Dr Gerry Bates has discussed this flaw in his environmental law textbook. The submission is referenced, Commissioners, and the core of his argument is repeated below:

> *One of the most oft repeated criticisms made of the environmental impact assessment documentation will be prepared by or on behalf of the persons having the greatest stake in the acceptance of the proposal. If the proponent does not prepare the statement, then that responsibility will be delegated to a firm of engineering or environmental consultants who would naturally be expected to assess the environmental impact of the proposal in terms that would reflect as favourably as possible the interests of their clients. It is claimed that this relationship will inevitably lead to aspects of a project that are detrimental to the environment being omitted or glossed over by a superficial study and glib assurances.*

I have found that to be true in all of the coal and coal seam gas EISs that I have read to date. Now, a few issues that we particularly want to bring to your attention – unsuitability of site for development. The Australia Institute recently pointed out in its submission on Hume Coal:

> *Coal is conspicuously absent from the local development framework which envisages carbon neutral energy sources, intensive agriculture, high-quality healthcare and agritourism. Mining is not a significant part of the Southern Highlands' economy and is antithetical to many mainstream local industries. The Hume Coal EIS makes much of the fact that while the project is located on a land where mining is prohibited under the Wingecarribee LEP, permissibility of underground mining is allowed by clause 7 of that LEP which prevails over any inconsistencies.*
>
> *What it fails to mention is clause 12 of the mining sector is also important which requires decision-makers to consider, among other things, any ways in which the development may be incompatible with any of those existing approved or likely preferred uses. There is a fundamental incompatibility*

between the local land users and the economies they support and the proposed coal mine.

Two other perspectives which further support this statement – one you've already heard from the New South Wales Department of Planning in its report recommending the project not be approved made the following statement:

Under the Wingecarribee LEP, mining development is prohibited in all of these land zones. Based on the limited list of permitted land uses, the department is concerned that a new coal mine may not be compatible with the existing approved and likely preferred land uses of these zones.

And the widely discussed Rocky Hill mine case already referred to my friend – by my friend decided in New South Wales Land and Environment on 8 February 2019. While much has been made in the media on both sides of the coal debate about how climate change was one of the reasons for ejection of the Rocky Hill mine project at Gloucester, which, of course, is true, the judgment clearly shows that this development could have been rejected on planning incompatibility grounds alone. If the IPC rejects the Hume Coal Project development as NCC hopes it will, the Rocky Hill decision represents an important legal precedent. Justice Preston said this about the land use incompatibility of the Rocky Hill mine:

I find that the Rocky Hill Coal Project by reason of its visual, amenity and social impacts will be incompatible with the existing approved and likely preferred uses in the vicinity and that the measures proposed will not avoid or minimise this incompatibility.

The same comments were applied equally for the Hume Coal Project. Water issues are obviously very impact. They're splashed all over the T-shirts outside today, "Water not coal." NCC does not support coal mining within the Sydney drinking water catchment. In 2011, then leader of the New South Wales opposition Barry O'Farrell promised he would allow mining in drinking water catchments, but he broke that promise in 2013 after becoming premier. If he hadn't, we probably wouldn't be here today. The Hume Coal ..... estimates very little attention for the State Environmental Planning Policy relating to the Sydney drinking water catchment which requires:

A consent *authority must not grant consent to the carrying out of development on land in the Sydney drinking water catchment unless it is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on water quality.*

NCC maintains that the Hume Coal Project fails to meet this neutral or beneficial water quality standard. NCC notes that both the Department of Planning and Coal Free Southern Highlands had to engage groundwater experts to assess the Hume Coal EIS water modelling. We don't have that level of expertise in our organisation but we certainly had a look a look at what their experts were saying, and there were

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many worrying criticisms of the potential impacts in the reports including the combination of an untested mining method and an unconventional method of impounding large quantities of mine water underground may result in serious operational safety risks.

And the department considers that the various safety risks may lead to the transfer of additional mine water to the surface and a need to discharge it to the local watercourses. The applicant has not assessed this issue or proposed a water treatment plan. NCC maintains an assessment of expert reports and ..... clearly that there is a great scientific uncertainty relating to the Hume Coal Project, and a threat of serious or irreversible environmental damage if a worst-case scenario actually occurs in relation to groundwater. Under these circumstances, the precautionary principle is triggered as explain in the court case which represents New South Wales Land and Environment Court planning principle, referenced in the report that you have.

When the precautionary principle is activated, there is a shifting of the evidentiary burden of proof, the burden of showing that this threat does not in fact exist or is negligible, effectively ..... to the proponent of the economic or other development planning program or project. There is no evidence within the EIS that the proponent has seriously taken the precautionary principle in consideration in relation to groundwater or flooding impacts. NCC attempted to find an assessment of whether there will be an accumulation of metals in the groundwater as a result of greatly increased contact with coal in the underground voids. We're unable to find any meaningful data in the EIS on that except for a couple of following comments. Wingecarribee River is considered a groundwater discharge water. No surprise to the locals here, one would think.

This river is part of the Sydney drinking water catchment. If the groundwater does become contaminated by metal for the coal reject material in the void, then it can leak out into the surface water and result in contamination of Sydney's drinking water. In an attempt to model the impact of reject material, the consultants noted that the magnitude of the ..... of leachate water quality was substantially larger for certain metals and the final leachate pH was relatively low, indicating acid generation was a potential concern. The translation of that is that higher concentrations of metals can accumulate in acid water. Metals such as mercury and cadmium are found it coal, and these are capable of bio-accumulating up the food chain if they enter the waters of the Sydney drinking water catchment.

The extent of such a risk is unassessed by the EIS. NCC maintains that an element which carries such potential water related environmental risks is totally unacceptable anywhere in Sydney's drinking water catchment. Climate change impacts. The Hume Coal Mine Project is being considered in the light of the Paris Agreement 2015, already referred to. Okay. Well, I will have to leave climate change impacts, which is a shame, and go to public interest. As Justice Preston determined recently, community responses in a development application are aspects of the public interest.

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A large majority of the residents of Gloucester opposed the proposed Rocky Hill open cut coal mine adjacent to the town. An even larger proportion of the residents of the Southern Highlands have opposed the proposed Hume Coal mine. We've heard 96.5 per cent of 12,000-plus community objections. That's the clearest indication you can get that in terms expressed in the Rocky Hill case, the Hume Coal Project is clearly against the public interest. It's also a matter of settled law that the public interest includes the principles of ESD, and I've already mentioned this project is contrary to the precautionary principle, is therefore contrary to the elements of ESD and must be refused. Thank you.

PROF FELL: Thank you. Thank you.

MR FREE: Thank you. Can I ask, please, Tristan Ryall to come to the lectern.

MR T. RYALL: Right to go. My name is Tristan Ryall from the Southern Highlands' Greens. The Greens opposition to coal mining needs to introduction. We've covered it in detail in our submission, and you've probably heard us mention it here and there in other contexts. There's no economic benefit from coal mining that is worth the damage. The damage to our environment, our water, our skies, is obvious, and has been covered by others. The damage to our people, our towns and our cities is less obvious but very, very real.

This couldn't be more true of the Hume Coal Project with its paltry economic benefit of 373 million of 28 hours, about 13 million per year. That's less than council's annual road budge. A drop in the ocean of the New South Wales economy – hardly worth trashing the place for. Opposition to this mine is just commonsense. It doesn't add up. The locals don't want it. That's clear from the number of submissions against it. Council are against it, as Larry so eloquently set out a little while ago. It contributes nothing to the local area while doing plenty of damage and risking even more.

Most importantly, after a detailed assessment of huge amounts of information and expert analysis, the department is against it. Commonsense says that is enough reason not to do it. The impacts of this mine at a local and regional level are noted in the department's report as significant. That's a fairly understated bureaucratic way of saying enormous. There's quite a few impacts discussed in the assessment, but I will focus on water since that's the main one. Hume Coal's own modelling counts over 100 bores that will experience drawdown. Even before they did the modelling properly, they admitted that. That's a technical way of saying there will be less water in the bores, less water in the aquifer because it's flowing down into the mine.

Some of these bores will be drawn down 20 metres and more. Put like that, a drawdown, it doesn't sound so bad. They should call it for what it is: a destruction of the aquifer. This is the most significant damage to an aquifer of any mining project ever assessed in New South Wales, as covered by the department spokesman this morning. Regardless of the uncertainty in the modelling, even the least conservative estimates say that. Commonsense says that that is enough reason not to

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do it. This isn't just about a few bores on a few small farms, though they are important. That aquifer is part of the Sydney drinking water catchment.

It's bad enough when mining happens in some far off place and it only affects a small community. This one affects millions. We all remember the times when Sydney has nearly been out of water in dry years, and Hume Coal is proposing to destroy a highly productive aquifer that feeds Sydney's water catchment. Commonsense says that's a bad idea. Sydney has an incredible area of protected land to protect the drinking water catchment. Any activity in this catchment is carefully assessed and managed. There are strict rules for something as small as a septic tank on a rural property in the catchment area, and this applies to areas as far away as Braidwood, south of Canberra.

It beggars belief that the rules could be this strict for a septic tank, but a mine this close to Warragamba that destroys the aquifer was ever being considered. A few people this morning have spoken about the natural or beneficial effect test. This requires that any developer in the catchment either doesn't affect the catchment or improves the catchment, and Hume Coal's own modelling says that it is drawing down an aquifer that is a part of that supply. That's not a neutral or beneficial effect.

And there's precedent for this sort of damage. There is increasing evidence that the Tahmoor Colliery has caused their near lakes to dry up and the beds of nearby rivers to crack, losing huge amounts of precious water that should be flowing into Warragamba. Berrima Colliery is currently leaking materials into the Sydney drinking water catchment. Hume Coal has proposed a few things to try to deal with this damage, such as deepening bores or providing alternative supplies. The department foresees a range of difficulties with these proposals from technical feasibility to years of dispute resolution. As I said before, the local don't want this mine.

There have now been 10 groundwater experts considering the project. They are from the department, from Hume Coal and from community groups like Coal Free Southern Highlands. The department's recommendation against the mine is therefore based on a pretty thorough analysis; the mine doesn't add up. Against all of this, Hume Coal offers paltry economic benefit which the department disputes the amount of and a few jobs. Of course jobs are good, but jobs destroying aquifers, polluting waterways and contributing to climate change are hardly good jobs. Put it this way: if someone offered you a low-paid job demolishing your own house would you take it?

MR GATES: Thank you, Tristan. You used the term damage to the aquifer and destroying the aquifer a couple of times. I would just like to tease that out a little bit more. How do you see it being damaged and destroyed, in your opinion?

MR RYALL: Well, the department's report calls it a highly productive aquifer. If the amount of water in it is so significantly drawn down – and two meters is raised several times, but that's at the lower range – the diagram in there lists up to 40

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metres of drawdown in certain areas. To me that's trashing its ability to be useful to us to be an ongoing resource.

MR GATES: And the water quality issue, likewise? Similar views on the water quality?

MR RYALL: I skipped a little bit there because of the bell going off, but I was going to speak about the water retained behind bulkheads idea and the idea that it therefore doesn't need a treatment plant. That's untested technology that has potential to either catastrophically or – as a seepage going to the catchment where it would have no treatment because no treatment plan is proposed – and the United States standards which detail how to do that mention that risk of catastrophic failure of those bulkheads.

MR FREE: Thank you, Mr Ryall. Can I ask Bruce Robertson, please, the next speaker to come forward.

MR B ROBERTSON: Mr Chairman – hello? No. Hello, Mr Chairman, members of the panel. I ask for six minutes to actually present my case to you today, having spent 40 years in the industry. I'm actually narrowed it down to three and a half pages. I've paid for writing, if I could read that to you please, uninterrupted. Before I commence I would like to just point out that our first speaker said the average yield of the bores in the area was two litres per second, and he put that up on a slide and stated that fact. The problem we have as a community is that there has been a total lack of transparency and they've dealt with averages on many factors that, actually, it was warranted that they deal with detail. I have two commercial bores in the area, hence my significant interest. One is six litres a second, and it's just on two kilometres from the southern boundary of the mine lease; the other one is about a kilometre from the southern boundary of the mining lease and it's three litres per second.

Now, I know for a fact there's bores in – within the mine area that do 10 to 20 litres a second, and my six litre per second bore, I actually have the right to pump six litres a second per – every day of the year on a continuous basis. So what we're talking about is a phenomenal, world-class aquifer here. So let's get that in the right context. And what you were presented with, as a board, was actually on average two litres per second on all the bores. To me that is misleading, and that's what we've had to deal with as a community. Okay. I will now read my prepared script.

Thank you for the opportunity to express my view with regard to the impacts of the proposed Hume Coal project on our community. I'm a fulltime resident of the Southern Highlands of New South Wales and I have two commercial water licenses with a total of 130 mega-litres that draw down from the world-class aquifer that immediately overlies the coal seam Hume Coal wish to mine. Our aquifer actually directly sits within five metres of the coal seam.

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I've invested, like others, substantially in land and infrastructure proximal to the proposed development and have put on hold, also like many other agritourism investors an already-improved dairy and cheese ..... development in Sutton Forest. The success of this business, like others, depends upon water and the security of substance applied to enable us, like others, to provide the six million people in the regional rural experience and product.

The dairy site is adjacent to three wineries with cellar doors, which are all sustainable agritourism businesses and depend on water and a clean environment to ensure their sustainability. I am also involved in other agritourism activities in the area near to Hume Coal's proposed development, which currently bring 150 to 180 ..... per week to the region. I'm a strong supporter of the mining industry with around 40 years experience in the business, predominately in mine development and financing. By way of qualification, my background I've listed here for your later – but I did my honours in coal, I was supervising ..... for coal operations comprising two underground and six open-cut mines. I've been a senior coal consultant in New Zealand. I've been managing director of a public company, and I currently ongoing advise as a consultant to a mine development for a mineral project in Eastern Australia.

So my 40 years have been basically on doing feasibility studies and mine developments, as general manager of development or as a managing director for project managing. My experience is most relevant in relation to providing a view on the Hume Coal project. As I've said, in most instances I am a strong supporter of the mining industry. As a local resident – moving along – I was invited to meet with Hume Coal management due to my significant coal mining, mining development and corporate experience, where I was asked to be on the community liaison community. Following that discussion and certain concerns I expressed that remained unanswered, because they couldn't answer them, I declined the opportunity. My concerns remain as follows – and that's what forms the bulk of my talk.

Firstly, I could not see how the company could safely mine the coal located beneath the world-class aquifer exhibiting extraordinary transmissivities without the company risking the lives of its personnel or pumping the aquifer dry over an increasingly large area as the mine progressed through its 19-year proposed initial mine right. Our bores are outside the immediate mining area and they have coal in them.

I deemed their development as a threat to sustainable businesses I've invested in. The uniqueness of this aquifer allows me to be licensed to pump six metres per second on a continuous basis without impact. The sustainable flow rates are phenomenal. There are operating commercial bores that have much greater sustainable flow rates than ours. This world-class aquifer is at risk if mining beneath it has – was to proceed. There are no other aquifers of such quality that could replace this unique Southern Highlands water supply.

When we look at the mining method, open-cut you get 90-95 per cent recovery of minable coal. Underground you get 80-85 per cent recoverable, and bord-and-pillar at Wongawilli determined to get 66 per cent. The pine feather method they're suggesting is 35 per cent. It doesn't matter the quality of the coal, whether it's coking or steaming coal, it's where you sit on the cost curve that matters, and that purely relates to the operation – you know, basically the type of mining and how much of the mining reserve you recover. And as far as I'm concerned, this operation is unsustainable because of its very poor position on the cost curve.

The structural conditions have been poorly considered in this – the documents presented to us because there's a significant interconnectedness, and they state that when you look at their ..... over their biodiversity statements and elsewhere when they talk about substance; they state that the aquifers are totally connected, and therefore their estimate of 14 litres per second of ingress of groundwater into the mine is an extraordinary underestimate of what the water ingress will be given our experience at Medway which – when the aquifer was pumped dry, where it overlayed the operation – this is an operation that's 10 times that of Medway on an annualised basis.

So the company admits that the aquifer is interconnected with the seam, and – but they say that it's only 14 litres per second, and the area is something like 20 square kilometres, and one fault could produce 14 litres per second. The – what concerns me greatly is – lastly, under ..... 7.5.6 of the report it states that:

> *…there are no potential future projects in the planning process that would influence the assessment of the Hume Coal Project in relation to potential groundwater impacts, therefore no cumulative groundwater impacts are predicted.*

This is factually misleading, similar to them using the two litre per second figure for average of all bores. Every landholder who relies on the water has a project in place. Although approved by local planning and the DA has been ..... we have in place a dairy that we have put on hold to this point in time, waiting to see what happens with the coal, which also includes a cheesery operation.

Now, we purchased the land because of the soil and the irrigation licence and ours is one of many local projects that cumulatively outweigh the benefit of a coal mine in the immediate area. I object to the mine proceeding based upon the proposed unsafe mining environment, damage to the world class aquifer that we have here, a flawed conceptual water balance that does not consider all factors – and this is – and I don't understand how they come up just with 14 litres per second for a 20 square kilometre mine void – and insufficient geological structural data to assess operational and environmental risks associated with the project and the devastating impact this coal mine will have on agritourism and thus our greater community. Thank you.

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MR GATES: Bruce, thank you very much for that presentation. If I can just bring you back to – you have two bores – one six litres a second and one at three litres a second – and you've indicated there's much high yielding bores in the general area.

MR ROBERTSON: Yes. Correct.

MR GATES: Could you indicate – do you know what your annual water entitlement is on your licence and how much of that do you actually use in a year?

MR ROBERTSON: Yes. We – we've actually got two entitlements. One is 120 megalitres where we actually have the dairy and the cheesery that has been approved for ..... and we've started that – to initiate the DA, we actually put in an effluent disposal system to preserve the DA – because of the timeframe. We ..... that place in 2010 – or 2009 actually, just before all this happened with the coal. And that's 120 megalitres and that's the one that does six litres per second. And it has got 160 milligrams per litre of dissolved salts and so it's very good quality water. It does have a bit of iron in it – and that's the one we can pump 24 hours a day, seven days a week and still ..... that. The other bore is 10 megalitres and the – we use about six megalitres per year of that 10 litres and that's primarily to preserve our heritage-listed garden, plus a berry operation and lawns around the function centre.

MR GATES: How much of the 120 megalitres do you use per year, Bruce?

MR ROBERTSON: We only use it for ..... at the moment. The reason we bought it was to irrigate the whole 166 acres of that block and we've put that on hold until we see what happens with Hume. And that's – the irrigation on that is probably a half a million dollar investment, plus another half a million to million dollars in other infrastructure and the like.

MR GATES: Thank you.

PROF FELL: Okay. Thank you .....

MR GATES: Thank you.

MR ROBERTSON: Thank you.

MR FREE: Thank you. Can I ask, please, Jason Perica to come forward.

MR J. PERICA: Thanks, Mr – am I on? Hello? Thanks. Thanks, Mr Chair, and panel members. I'm Jason Perica, a town planner representing Battle for Berrima. I'm here to speak against the proposal. There are three main areas I would like to talk about, (1) the unique aspects of the proposal, (2), the uncertainty regarding the outcome, and, (3) sustainability considerations.

Firstly, there are a number of unusually unique aspects to the proposal. These include at least 16 aspects: the untested pine and feather technique and pillar design;

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the reuse of mine water back into the mine; the high quality of bore water within a drinking water catchment of Australia's largest city; the high number of bores near the mine; the scale of the impact quoted as "the most significant for any mining project ever assessed in New South Wales"; the nature and type of surrounding uses, the uncertainty of the make good process; the geology of the area and the shallowness of the resource; the size of the mine in the Southern Highlands; the nature of the applicant, an overseas company with direct export to the source and other nations with limited local economic add-on benefits; the proximity of significant local and state heritage assets; the highly complex modelling, assumptions, lack of data and uncertainty; the involvement of 10 leading groundwater experts; the detailed assessment by the Department of Planning and Environment, including five independent external experts and community opposition, with over 12,000 submissions and high local opposition.

These aspects are individually unusual or unique but, as a whole, represent a wholly unique proposal to New South Wales and Australia. Uniqueness can be positive, however, in this instance, they are not positive. They are negative, both individually and as a whole. The uniqueness of this proposal warrants its refusal amongst other matters. Secondly, there are a number of uncertainties regarding the proposal all of which undermine its limited perceived benefits. These are outlined in my written talk, though I will pass over them here to save some time. These uncertainties are significant. They question the core assumptions and assertions the proposal can mitigate impacts and realise an economic benefit. They also don't support the proposal. Thirdly, the ecological sustainable aspects as outlined in BGP Properties v Lake Macquarie warrant refusal of the DA.

The first is the conservation of biological diversity and ecological integrity. Clearly, the likely impacts on groundwater resources affects the ecology and the ecological framework. This is added to the impact on 10 hectares of native vegetation including EECs and potential stream impacts. The other is intergenerational equity, namely, by quote, that:

> *..the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations* –

the health, diversity and productivity of the environment are undoubtedly compromised. The benefits of the proposal are uncertain and short-lived yet the impacts will be long-lasting. Climate change considerations were recently analysed by the Chief Judge for a mine in Gloucester.

Well, having some key differences – in terms of potential CO2 generation, that – this mine will produce almost 50 per cent more coal per annum than that Gloucester mine and for a longer timeframe – by around 20 per cent. The climate change concerns from that recent judgment equally apply here, if not more. Environmental impacts are outlined in the assessment report, however negative impacts on native vegetation, EECs, 10 permanently removed Aboriginal sites and many affected others, heritage

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impacts, scenic impacts, traffic impacts, noise impacts, air emissions and safety from increased use of level crossings are not given great emphasis in the report, however they are undoubtedly negative.

Secondly, there will be adverse impacts on existing residents and – sorry. Socially, there will be adverse impacts on existing residents and businesses. There are nine categories of social impacts within the Department's guidelines, including the way of life, community, culture, health and wellbeing and fears and aspirations. Impacts on these factors will be overwhelmingly negative. Economic impacts are arguable and uncertain. The independent expert appointed by the Department questions the potential benefit by around two-thirds and outlined the difficulty in absence of costing externalities. It is difficult to quantify adverse impacts on future tourism, however, commonsense would indicate this would be negative. These ESD principles warrant refusal of the DA without reference to the precautionary principle, however, it is certain the precautionary principle is applicable and valid in refusing the proposal. The principle as quoted from Telstra v Hornsby:

...is triggered by the satisfaction of two conditions precedent or thresholds –

(a):

...a threat of serious or irreversible environment damage –

and (b):

...scientific uncertainty as to the environmental damage.

It is clear these two criteria are met. The environmental threat is undeniably serious. Scientific uncertainty is evidence by the fact that 10 leading scientific experts can't agree on the environmental damage. So the proposal should be refused on ESD considerations and principles, including but not limited to the precautionary principle.

Finally, I would like to congratulate the Department of Planning and Environment in their hard work and professionalism in assessing the proposal and their comprehensive public report. I would also commend the applicant. They have compiled a comprehensive application and appointed well regarded consultants. They've worked hard to prepare a proposal which adopts an option which may be comparatively the least undesirable option, however, this is not the test of acceptability. Unfortunately, the proposal is ill conceived. It's on the wrong site, with the wrong approach, at the wrong time. Thanks for your time.

PROF FELL: So that brings this session – we have got a 10 minute break now. So we will resume again – I think that makes it 12.22 if I've got it right. So a 10 minutes break. Thank you.

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RECORDING SUSPENDED **[12.11 pm]**

RECORDING RESUMED **[12.23 pm]**

PROF FELL: Ladies and gentlemen, can you take your seat, please. We will try and make a start. If Alan Lindsay could also please make his way to the lectern. Ladies and gentlemen, if you could be quiet, please. Mr Lindsay is ready to commence. Thank you, Mr Lindsay.

MR A. LINDSAY: Good. Thank you. My name is Alan Lindsay. I'm the vice-president of Coal Free Southern Highlands. Now, Coal Free Southern Highlands has already had the opportunity to make detailed presentations to the panel, which we did on 11 February, and those presentations are on the IPC website, plus the transcript of our two hours, and so I won't be going over that material today and nor are we presenting any of our experts from that meeting today. Basically, I just want to give a quick summary for the people who are here, just so they know what the Coal Free Southern Highlands' attitude to the department's assessment is, and basically we can say that with some reservations we agree with the DPE assessment. We agree that the mine design is inherently risky. We agree that there's a possibility of surface water problems and these haven't been addressed. We agree that the make good proposal that Hume Coal have put forward is unworkable, and also that the economic benefits are grossly overstated.

So, in particular, we agree with their conclusion that this project is not in the public interest and that approval should be refused. There are two points on which we disagree with the assessment. The first is that we object to the choice of the Hume groundwater model as the basis for their work. We understand why they did it. They did it, I believe, because there was enough evidence in the make good area, even using the Hume model, that it wasn't necessary to go that far and adopt some of the ideas that our groundwater experts have put to them. We believe – and, certainly, throughout groundwater experts – that the Hume model grossly understates both the level of impact on bores in the district and also the amount of water that will be intercepted and needs to be licensed. We also have a problem with both the Department of Planning's assessment on – and the EPAs submissions on the emplacement of rejects underground, and at the 11 December meeting we had Dr Bill Ryall who produced material to support his case that in fact to call this water the groundwater equivalent that's going back underground after the mining process is just not justified at all.

We have also had Dr Chris Jewell who is also an expert in this area who has made previous submissions on that very subject and says – agrees with Dr Ryall's position. Now, the EIS was 10,000 pages long. It took a while to read and we've had another 700 or so in the response to submissions. But even in all of that, important information that is necessary to evaluate this proposal is being held both from us and the community and indeed from – in some areas, from the assessing authorities.

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Firstly, I would like to talk about the geological data. Now, we believe that insufficient data has been produced, but it's not the data that they would have been able obtain if they had got access to properties. They weren't entitled to access to those properties and we did our very best, including very extensive court cases, to ensure that that didn't happen.

The data that we complain about is the 100 or so holes, stated that they have, that they are hiding behind the wall of confidentiality. Our experts look at the model that they have come up with, the conceptual geological model, and it makes no sense to us, and it doesn't – it doesn't go with the practice of people in this district for many years. Tomorrow, John Lea who wasn't at the 11 December meeting and who has had extensive hydrogeological experience, will be presenting to you, and I'm sure that you will find John's explanation of what happens underground with the aquifer to be completely different to what you've heard from Hume today and in previous days. It's interesting that we have never been given a presentation on the conceptual geological model.

Now, since the middle of 2012, I think it is, I have been a member of the Hume Coal WAG, one of the four or five community members that has sat on that committee, and as was said by Councillor Whipper today, it wasn't a particularly illuminating experience. I think we tried to do more to get data into that process than we ever got from Hume Coal. It really disturbs me that they didn't take the time to take their data and try to persuade the people who sat on that committee, meeting after meeting, that in fact the conceptual geology that they were putting forward for their model was in fact a true representation of what was underground.

The data that we have dates back to about 1982 and it completely destroys the concepts that they were putting forward, and we've never really been able to engage them on those particular issues. Now, the groundwater water, it's quite amazing to me that with all of the work that has been done on the groundwater model, we have never been allowed to meet the modellers who did it so they can explain how they put together the various bits of data and came up with their answers. We've had Parsons Brinckerhoff for the first model as – produced the first model. We had representatives of their company there, but they were really just giving us assurances.

Occasionally we might get a geological cartoon explaining what they were trying to do, but very little other than that. They then disappeared from the scene. Maybe they weren't getting the right answer. I don't know. But we had Coffey Geotechnics who then came in. Mr Timeda was their principal modeller. We never met him. He never stood up in front of anybody. He never explained anything, and as far as we were concerned, all the words that he wrote might have been there but they didn't really give us the feeling that they were actually translating the Southland Highland circumstances into that model.

Now, Coffey Geotechnics have gone, and Dr Merrick who was appointed the peer reviewer in 2012 is now the modeller. And while we did meet Dr Merrick once on one occasion – we arranged for John Lea to give a geological presentation to the

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Hume Coal Water Advisory Group and Dr Merrick was there, but we haven't seen him since. We were supposed to meet him in the experts – groundwater experts meeting that the department called for. I think it was 16 November 2017. And late in the afternoon of 15 November Dr Merrick and Hume Coal withdrew and decided not to engage with us. The department's expert, Mr Middlemis came along, and we engaged with him. He had been speaking to Dr Merrick I guess he was maybe their surrogate for the meeting. I'm not sure. But it wasn't a very productive meeting and not much was resolved.

But there was one thing that Mr Middlemis said during that meeting and is subsequently put on paper afterwards. And if you read the Hume Coal's presentation and you read – and you hear what they say, they say that the methods of make good were acceptable to Mr Middlemis and technically feasible, I think was the term. However, at that meeting his views were challenged quite significantly by our experts and he then qualified and he said, "Yes, for stock and domestic bores, two megs up to, say, eight megs. Okay. These methods would work." But he said they won't work for irrigation bores. And that's really what this argument has been about. Now, have we tried to talk to him about irrigation bores? Have we ever. It's consistently raised because one of the members on the Water Advisory Group is in fact a large landowner – a manager of a large property and he has – he has asked the question many times, as we all have, and we still don't know.

It's a mystery. Now, I've got a detailed presentation here – well, a rough presentation here. It was our intention to – for me to talk to this today as far as I could get knowing the time is short, and for us to then hand this presentation in at a later time, but the two other things that I would really like to talk about, and it will only take a second, that the emplacement of the rejects underground and Hume's analysis of it falls well short of what you would expect a proponent to put forward. They have not produced – they talk about some reports, RGS 2016 and 2018. We have never seen them. Our experts have asked for them and we've never been given them.

The financial data has also been very obscure. And one of the aspects of the 11 February meetings that really surprised me – shocked me, in fact, was the fact that when challenged over the safety of the mine, the Hume people have said that they've got these reports or notes from meetings but they're refusing to show them to the department, they're refusing to show them to the department's experts, and they're also refusing to show them to the resources regulator. They will show them to you, however, they have said but only a hard copy and you can't leave the room with it. That's the way it is. We have been experiencing this withholding of data, this ducking and weaving for the last eight years and I tell you what, we are really tired of it. This project is not worthy.

And one final thing, because you're going on an inspection tomorrow. You'll go out to their property, Mereworth. Now, Hume have been very critical of the farming people around here. You know, we're not unproductive. They were going to have this fantastic operation, they've got a hotshot farmer from south of Goulburn to come

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here and to install what, to all intents and purposes, looks like a feedlot. They have destroyed Mereworth and if it was ever doubted – then we found out on 12 February when one of the sorts of winds that you – if you were looking to see evidence of this in Hume's EIS you wouldn't find it but it was a very strong wind and this place got covered with Mereworth dust.

What they've done to that property is totally irresponsible and they're asking us to take them on their word that their assessment of the geological structure is sound, that the geochemical reports that they're hiding from us support their case, the financial data that they're hiding from us supports their case, and the safety reports that they've got which they say wouldn't be of interest to us and we're not entitled to them. They are of interest to us and – but they should particularly be shown to the experts from the department – the mining experts who, in my opinion, have done a very stellar job in analysing this project and determining where it has its flaws. So I thank you again. Sorry I went over time but we will put this report to you.

PROF FELL: Questions?

MR GATES: Alan, as you pointed out we've had two hours conversation about some of these things - - -

MR LINDSAY: Yes.

MR GATES: - - - so I'll limit my questions to just a couple of things. Your consultant's model and the official model that Hume are putting forward are still a long way apart.

MR LINDSAY: Yes.

MR GATES: We will read those very closely and we will read the input parameters and the assumptions of ..... and look at them very closely. One of the things that's missing of course is that there's no water usage information collected by NSW Water to go into the model. Can you give us some sort of indication ..... living in the catchment as to what percentage of people's entitled that's being currently used? Is it a small, in the middle, or is it 100 per cent?

MR LINDSAY: Well, working on the word "current" I would say it's pretty close to a maximum because we're in a very, very dry time. In better circumstances we would use less water. But the value of the groundwater to the residents here, particularly those who are in the farming business here, has never been more clearly demonstrated than right now because we're seeing the water table actually falling. And without the rainfall to keep propping it up, I would say we must be pretty close to a maximum usage at this time. Now, when it's raining – we get pretty heavy rain here sometimes – it's not necessary to use the bores but I think that the design that the department – the Office of Water when you were there and others, has been to cater for these extreme situations and, believe me, we are in one right at this moment.

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PROF FELL: Just one more question, if I may. What percentage of the allowable take for the water district would be the mine's allocation?

MR LINDSAY: Well, it would be two gigalitres out of – we're in Nepean Area 1.

PROF FELL: Yes.

MR LINDSAY: I think, from memory, the total allocation for Nepean Area 1 is 16 gigalitres. Right, so it's two over 16, whatever that works out as.

PROF FELL: Thank you.

MR LINDSAY: But - - -

PROF FELL: I think no further questions?

MR LINDSAY: One – just one final thing, if I could say. Bruce Robertson talked about the size of the bores and the allocations that go with it. John Lea tomorrow will talk to you about Rosedale, where he has been advising the landowner for some years, where the – he gets 50 litres per second out of that bore and has a licence on one, I think, for 350 and another for 200 and he runs a pivot irrigator. And he is one of the bores – his is one of the bores that will be very badly damaged by this mine, even under Hume's admission.

So where he is looking at a very difficult situation. But other people, even down to the Martins who have a 30 megalitre licence to irrigate the specialist agriculture that they have on their property, to provide that make good – but their bore will also be destroyed but to provide that amount of water by trucking or whatever is just absolutely impossible. You know, you're talking about, in the case of Rosedale, something like 18,000 trucks of 30,000 litre capacity to be able to supply his needs and right at this moment I can assure you Rosedale is going absolutely flat out on their licence.

PROF FELL: Thank you for that. You made that point in our discussions with you, I think, too earlier. Thank you.

MR FREE: Thank you. Could we have Danny Pullicin, please.

MR D. PULLICIN: Thank you very much. Danny Pullicin, Battle for Berrima, Land for Wildlife. There are more – there is more energy reaching the earth's surface from the sun in two minutes than all the energy produced in one year by the world's toxic coal fire plants. In 20 years POSCO coal will produce toxic coal waste that will impact on surface and aquifer waters in the Southern Highlands. In 2009, Sydney Water and the CSIRO funded the Australian Symposium Water Committee and the International Association of Hydrogeologists to conduct a water study into Sydney's future drinking water. The symposium drilled the Hawkesbury sandstone

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to the depth of 100 metres to test its viability, its viscosity and its resistivity to accessing the water aquifers.

In 2011 the study determined it was a success. The Southern Highlands sandstone aquifers are accessible to provide the future drinking water for Sydney Metropolitan Area. This symposium committee was made up of 15 renowned hydrogeologists worldwide. Worldwide. Just to mention a few, Dr Wendy Timms, Dr William Milne-Home, Dr Jerzy Jankowski. Using resistivity imaging and drilling targets, the symposium identified that the Hawkesbury sandstone membrane had multiple fractures in its geophysical structure. Multiple fractures. These fractures exist in all parts of the membrane. Numerous holes were drilled in Berrima, Bundanoon, as far as Kangaloon and showed fractures and macropores of the Southern Highlands membrane aquifers had significant porosity, an interconnection with surface and aquifer water.

Aquifers are located in the upper region of the Sydney Basin and, at 600 metres above sea level, are ideal for moving mega-quantities of water for the Sydney Metropolitan area. Mega-quantities. POSCO Hume Coal will mine 3.5 million tonnes of coal for a period of 20 years. Consensus science tells us that for every one tonne of coal mined three per cent of its mass is toxic tailing waste and over 20 years this totals 2.2 million tonnes of deadly chemicals: pyrites, cadmium, sulphuric acid, tin, lead, mercury, methylmercury, nitrates, methane gas, vanadium, thorium, stratorium; the last three are used in nuclear manufacture. A mass of 2.2 million tonnes of toxic tailing waste and methane gas will be housed in 1000 empty coal voids, spread in a grid-like design over an area of 46 kilometres underground.

The toxic waste will be at a very shallow level adjacent to pristine water aquifers and under the economic one of the Hume Highway connecting Sydney to Melbourne. Toxic waste and methane gas will place the sandstone fractures under extreme hydrostatic pressure. Should a methane gas explosion occur within one of the ..... in one of the coal voids, toxic waste will move at an accelerated rate to other coal voids. Ladies and gentlemen, should this occur Sydney drinking water catchment will be subject to contamination and poison. There are no guarantees that the bulkheads keeping or capping the coal voids will not break under hydrostatic pressure discharging coal waste into surface and aquifer water. There are 12 pristine natural surface water creeks and flows and a river in the mining site. 12. To poison Sydney's pristine water catchment with toxic waste and methane gas is a grave concern to all of us. POSCO Hume Coal's EIS states that:

> *Underground water will be depleted by two metres and will reduce water to 118 private subterranean bores.*

Independent hydrology studies from Pells Consultancy shows that water will be depleted to 120 metres and over an area of 200 square kilometres reducing water to more than 118 bores. Water risk management is critically high for POSCO Hume Coal. In – the New South Wales water aquifer inference act acknowledges groundwater assessment impacts are fundamentally uncertain. The Water

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Management Act of 2012 does not support the workings of the POSCO Hume Coal Mine.

POSCOs mitigation and prevention options for the coal mine have very little scientific data on toxic waste already mentioned today and on evaporation impacts never mentioned. POSCOs water licence of 2000 megalitres in one year can lose 800 megalitres of water due to evaporation in one year. When this occurs, my question is where do the extra 800 megalitres of water come from? There are 363 bores within nine kilometres of the POSCO Coal Mine. Some are just 50 metres away from the coal seam. Reducing and poisoning underground and surface water will have toxic environmental and economic impacts on landowners, agriculture, business and urban residences.

The Warragamba Nepean water catchment area is subject to failure in drought times. Evaporation rates exceed rainfall rates in Australia and the 2018 drought was one of the worst in the history of Australia. Water levels are currently at 60 per cent. Botany Bay's desalination plant cannot provide Sydney's future water. Its capacity is only 15 per cent. In 2019, Sydney's population is nearing 5 million and the continued immigration and urban sprawl can reach 6 million people in five years. Unfortunately, coal waste destroys water and land in New South Wales. In 2017, our renowned hydrologist Dr Ian Wright found enormous toxic discharges from the Clarence coal mine, destroying land and water in the Blue Mountains National Park World Heritage. This is home, ladies and gentlemen, to the famous Australian Jurassic Wollemi Pine found nowhere else in the world. It's ours.

In 2018, Dr Wright found evidence of coal toxic discharge and land surface fracturing in the Medway water catchment of the Southern Highlands. The surface fractures of this ancient stone river bed can never be repaired or replaced. Its loss is permanent. In 2018, Dr Push found water levels in Western Australia Pilbara region had dropped by 19 metres due to the Shenhua coal mine, impacting 4084 hectares of vegetation all subject to coal mine acid rot. This is now listed, ladies and gentlemen, as a critical endangered community classified under the Environmental Protection and Biodiversity Act of 2007, registered. In February 2019, Judge Preston in the Land and Environment Court in New South Wales ruled against the Rocky Hill coal mine in Gloucester New South Wales. The ruling was on climate change, toxic waste impacts, on the environment and water and the chemical effects on the community.

The Australian Symposium Committee identified the Hawkesbury Sandstone aquifer as Sydney's most important aquifer – Sydney's most important aquifer for the future of Sydney's water. Methane gas, CH_4, the silent killer gas that reduces oxygen in the water. Menindee Lakes, New South Wales, millions of fish dying – no oxygen in their water. POSCO Coal voids holding methane gas can reduce oxygen by 90 per cent. When this hits the aquifers, they will be contaminated and poisoned. In 2017, the scientific community of medical doctors for the Australian environment said:

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…a poisoned water aquifer is unsuitable for human, animal and vegetation consumption –

10 seconds, sir –

and has significant impact on food security … it is not going to protect intergenerational equality or equity for us or our indigenous people –

the Australian Symposium Committee of Scientists said:

…to ensure the future supply of Sydney's water is to allow natural recharging … do not disturb.

With this process alone, can we ensure that adequate protection of human health and water will happen? Our platypus is an endangered species in the Southern Highlands. Toxic coal waste and methane gas will eradicate this species forever. The Independent Planning Commission has a constitutional responsibility to save our platypus and our pristine drinking water. Thank you.

MR FREE: Thank you. Can we have Brigid Kennedy, please.

MS B. KENNEDY: I'm the president of Moss Vale and Rural Chamber of Commerce. Moss Vale and Rural is not opposed to mining in its place, it needs to be said, and we as a committee have looked at this in a – this issue in a balanced, commercial view. I was first alerted to the depth of upset over the Hume Coal submission when starting the Food & Wine Cluster project of our – for our chamber in 2016. Mid-2017 we canvassed our 220 members in an independent survey about the prospect of the Hume Coal Mine. It is for them that I speak today. Only two sat on the fence of a coal mining family background. The rest were vehemently opposed.

The survey points of concerns came down to three things: (1) water quality and quantity and how many farms were affected in our LGA, (2) the coal residue on surrounding environment, and (3) POSCO, Hume Coal's owner – poor global reputation in remediation. To the water point. Today, Hume Coal has underwhelmed us in their proposed remediation of bores on these farms. Hume has presented an experimental format of extraction and has been unable to satisfy with any certainty our existing water quality, sanctity of our aquifer or that we as farmers will be able to rely on our groundwater going forward.

Given we are normally somewhat drought-proofed in this area, we also underwent a harrowing time last winter without rain. Not to have certainty of our groundwater is a grave concern for farmers. That we are all subject to water catchment sanctions, it is unjust to entertain such experimental extraction. I invite you to ask me questions about personal circumstances on groundwater on-farm after this presentation.

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On the coal residue issue. If this shire was in Great Britain, it would be zoned an area of great natural beauty where they respect their heritage and their green space outside large urban areas. And we have all seen the horrors of the Hunter Valley and what has been done to an established tourist destination and the thoroughbred industry. The Southern Highlands is a fledgling tourism destination and this coal mine would certainly curtail our efforts in presenting our produce and area as clean and green. In the survey mentioned, 140 million is proposed in agricultural-tourism investment and these figures are largely waiting, as Bruce Robertson has suggested today, on the Hume Coal decision before a willingness to invest is established. This investment will certainly take up the slack in a more aspirational employment with the exit of Hume Coal.

On the issue of POSCOs poor performance in remediation of their global ventures, I have no further comment as POSCO has written their own script on this. We, as a chamber, remain vehemently opposed to Hume Coal's establishment of a mine in the Southern Highlands and I commend this community at the length and depth of their commitment to ridding the Southern Highlands of Hume Coal. We applaud the Department of Planning in their very fair assessment. Thank you.

MS TUOR: I've just got a quick question about the – you mentioned 140 million in investment. Is that money that's waiting to be invested in projects? If it is, what is the economic generator predicted from that $140 million investment?

MS KENNEDY: The 140 million is just in spend. It's currently 40 million of that, and this is just, if I can assure you, of the clusters. That's the 120 – we only have six clusters open currently – or seven, actually – and that is just of those members and their willingness to invest. The outcome of that is not graded in terms of – we've graded it in terms of jobs which we predict between five to six hundred; however, we haven't yet tested because we've been waiting for this decision to come through, but there's, you know, 10 million in a distillery, for example. There's, you know, a great number of really excellent proposals to put forward.

MS TUOR: Thank you.

MR GATES: Brigid, did I get the impression that you had a personal story to talk about your bore or your groundwater uses that you wanted to tell?

MS KENNEDY: Yes, I did just want to touch on that as a personal – because I did, as I said, predominantly want to talk for the members of the chamber; however, as a farmer myself, we bought a new farm last year. There was no bores on it. We just had – it was 300 acres which is substantial for the 30 cows that we had on it. There was no bores put in place, but we did have a spring bore. The spring bore dried up with no rain. So that tells you about the geological issues that we're facing. So we just relied on bore – on dam, and feed was so terribly hard to get hold off, the animals were quite weak. And we lost about a sixth of our herd in dams that had become silted up, etcetera. So without the ability to be able to sink a bore, you can

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understand where those that are just relying on, you know, groundwater are severely concerned.

MR GATES: Thank you.

MS KENNEDY: Thank you.

MR GATES: Thank you. Anything further? Thank you.

MR FREE: Thank you. Could we have Meagan Thorpe, please.

MS M. THORPE: Good afternoon, everybody. My name is Meagan Thorpe. I'm the area manager for 1300apprentice, and today I'm speaking on behalf of 1300apprentice, a registered group training organisation which proudly manages the Hume Coal Apprenticeship Program. We support the Hume Coal Project and Berrima Rail Project, and we appoint residents of the Wingecarribee community in a wide variety of apprenticeships and traineeships in businesses located within the Wingecarribee region. We are a for-purpose organisation with over 30 years of experience in the vocational education and training industry.

Our reputable, professional and approachable team has an in-depth knowledge of the vocational education and training industry ensuring a quality of service which is at the centre of our operation and ethos. Guided by a commitment to career development through on and off the job training, 1300apprentice works closely with local businesses and client partners to achieve vocational excellence and local career opportunities. 1300 are an equal opportunity employer providing opportunities for women in non-traditional trades, indigenous people, mature aged people, refugees, school-based students and people with a disability.

Our organisation, along with many others in the area, including host employers that take on the apprentices and trainees through Hume Coal's Apprenticeship Program, have already benefited greatly from Hume Coal's Community Investment Program and their support. Opportunities have been created for many of the trainees and apprentices that would not have been possible without the financial support of Hume Coal. We see the value that this opportunity provides to the Wingecarribee community which we work very closely with, and we are proud to be involved in it.

Prior to being employed by 1300apprentice in 2011, I've been employed by another group training organisation as well as a registered training organisation, an Australian apprenticeship centre and a Job Services Australia provider. Since the beginning of my career in 1991, I've also been employed in the industries of hospitality, horticulture, plumbing, business and warehousing. I'm a qualified trainer with additional training in mental health, first aid, cultural awareness, language, literacy and numeracy, mentoring in the workplace and work health and safety.

I've completed two traineeships in the earlier stages of my career in both hospitality and business sales. These experiences have given me valuable skills to be able to

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source, employ, guide, support and mentor the apprentices and trainees that we employ as well as to partner with and support our host employers' industry and our sponsors. This is what I am passionate about and will continue to pursue in my career.

The aim of the Hume Coal Apprenticeship program is to provide entry-level skilled jobs as well as upskilling opportunities for people in the Southern Highlands who are looking for full-time work opportunities with local businesses. This program has been the first of its kind where a company has paid for all employee costs including wages, travel and tools with no obligation for the trainee or an apprentice to work for or promote Hume Coal. 1300apprentice has worked closely with the Hume Coal Project for close to five years. During this time, 24 apprentices and trainees have had the opportunity to go through the Hume Coal Apprenticeship Program working in local businesses in the community for the community.

Since 2015, $250,000 each year has been funding the Hume Coal Apprenticeship Program. That would be close to $1.25 million by the end of this year purely invested back into the local community, and this doesn't include the funding that has been provided by the Hume Coal Charitable Foundation and Sponsorship Program. The types of local businesses that have hosted or currently host apprentices and trainees include electrical, carpentry, landscaping and garden maintenance, heavy commercial vehicle, engineering, signage, accounting, hospitals for both animals and people, a registered training organisation and early childhood education services, all of which are fundamental to the local business community. Without the funding from the Hume Coal Apprenticeship Program, many of our now qualified apprentices and trainees would not be where they are today.

As part of the Hume Coal Apprenticeship Program, 1300apprentice have employed apprentices who had to travel to Sydney-based businesses back to remain in the local community where they reside, mature aged people to kick-start their dream career, local teenagers that were unable to secure their career of choice, a female apprentice in a non-traditional trade, an indigenous trainee with a goal to be an accountant as well as taking on apprentices who have lost their jobs due to a shortage of work, poor working conditions or not being the right fit in their workplace.

All of these apprentices and trainees gain a nationally recognised qualification as part of their employment. All of the trainees and apprentices that have completed to date have either stayed on with the business they completed their apprenticeship with or have secured other employment opportunities or have gone on to study at university at the end of their traineeship or apprenticeship. Some of the apprentices have plans or are in progress to starting their own business in the future.

Unfortunately, many communities see their young people leave the area when they finish high school because of the lack of local work and opportunity. If the project were to be approved and continue, programs like the one I manage could expand and help keep youth, young adults and other eligible participants in the area by giving them real skills and a pathway to transition into long-term careers via apprenticeships

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and traineeships. I've seen firsthand the benefits of the Hume Coal Apprenticeship Program for both the host employer and the trainees and apprentices who have secured work and have attained or are attaining beneficial skills, knowledge, experience and qualifications to enhance not only their careers but also their life.

Based on my firsthand experience in this project, the value of what Hume Coal has and is providing for the local community is life changing. The program has allowed locals to work with local businesses, remain near their friends and families and, in turn, contributing significantly to the skill base and economy of the Southern Highlands. We are proud to support the Hume Coal Project and Berrima Rail Project. Thank you.

MR FREE: Thank you. Can we have Graham Quint, please.

MR G. QUINT: My name is Graham Quint. I'm the director of conservation with the National Trust of Australia, New South Wales. In 2017, the National Trust put in a submission on the then publicly exhibited Hume Coal and Berrima Rail Project's state significant developments. I understand that the panel will be considering all submissions received on the projects, and do not intend to repeat the points raised in that submission. The National Trust owns four properties in the Southern Highlands. Two listed on the State Heritage Register are affected by coal mining proposals. We note with great concern that in both cases, as they are deemed state-significant developments, the New South Wales Heritage Council is reduced to an advisory role in the development approval process.

The National Trust has lodged a strong objection to the state significant development application for the Tahmoor South Coal Project extension of underground mining, highlighting the adverse impacts of the proposed development on the National Trust property in Remembrance Driveway, Bargo, where Wirrimbirra Sanctuary operates, an area of approximately 95 hectares of bushland. I note the subsidence report clearly identifies there will be subsidence impacts to land within Wirrimbirra Sanctuary. Amongst other impacts, it predicts that ground cracking and movement may drain the existing natural water courses through the property.

The biodiversity assessment report also clearly identifies that there will be negative impacts of the proposed development on an identified critically endangered ecological community and two threatened flora species. Golden Vale Homestead, 278 Golden Vale Road, Sutton Forest, is also owned by the National Trust. The Trust is deeply concerned that the Hume Coal Project may impact on the property's water supplies. The Trust regards limiting of the protection provisions of the Heritage Act, through state significant development designation, as unfairly facilitating coal mining development over the proper protection of our most significant built and national heritage. Why should state significant development be given priority over state significant heritage. The National Trust is campaigning vigorously to have this unfair bias removed from state legislation.

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The National Trust hopes the recent landmark decision of the Land and Environment Court on the Rocky Hill Coal Project – in dismissing the appeal against the refusal of development consent, the chief judge, Preston J, held that the mine proposal had come at the wrong time, observing that the greenhouse gas emissions that will be generated by the proposed coal mine and its coal product would increase global total concentrations of greenhouse gases at a time when what is urgently needed in order to meet generally accepted climate targets is a rapid and deep decrease in those emissions. He said that these dire consequences should be avoided. The National Trust commends the chief judge of the Land and Environment Court's findings to this independent planning commission review.

The trust regards the views expressed by his Honour as representative of current thinking among environmental jurists and lawyers and as indicative of future prospects of any legal challenge to these kinds of developments. It also corresponds with broader community sentiment. The trust notes the following issues recorded in the transcript of the meeting between the Independent Land Commission and the Department of Planning and Environment on 11 February 2019. The proposed Hume Coal Project coal extraction method, the pine feather method, is unconventional and there are no other operations where it is being used. If some of the mine pillars start to yield and the roof cracks, there is a risk of exposure to a roof fall. Pillar extraction is the most hazardous form of underground mining.

The biggest issue with this project is the impact on the groundwater, which could also cause surface water impacts. Within – the current legislative and policy framework of the Department of Planning and Environment does not consider the proposal acceptable, in terms of impacts. There is a highly-productive aquifer here, which the aquifer interference policy seeks to protect. From an environmental standpoint, the aquifer is an environmental feature in itself, which ought to be protected. Notably, the Department of Planning and Environment has never seen such numerous impacts on a highly-productive aquifer and it has no confidence that the concept of making good is ever going to work in this scenario. Both the social and environmental impacts of the water drawdown are highly relevant to the Department of Planning and Environment's assessment of the development proposal.

If there are going to be hazards or risks – safety or otherwise – underground and they can't impound the water in the way they've proposed, what are they going to do with the water temporarily or over the medium to long term. Suddenly you've got potentially a surface water problem. The National Trust of Australia continues to object in the strongest possible terms to the Hume Coal and Berrima Rail Projects. In the context of the history of European settlement in New South Wales, the Southern Highlands area has had a unique social and economic role and its heritage values need recognition and protection if they are to survive into the future. These values are incompatible with the development of the coal mining landscape. We look forward to due consideration being given to the concerns raised by the National Trust.

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MS TUOR: Sorry. I've just got one quick question. My understanding is that the pine feather method of mining has been chosen largely in an attempt to mitigate potential impacts on the cultural landscape of this area, visual impact, those sorts of things. So on the assumption that it works according to the way it's meant to work, what would you perceive as being the impacts on heritage values of your property and on the cultural landscape in which the Southern Highlands is situated?

MR QUINT: Look, we can only go – we're not experts in groundwater or anything of that nature. We can only go on the findings of the Department of Planning and Environment, who basically say it is unacceptable. So we have no other alternative to say. That could well – if we have these groundwater impacts, surface water impacts, it will affect our property. We have no other way of judging that.

MR SHARROCK: Thank you. My question really follows on from that. As you mentioned, the Wirrimbirra Sanctuary will be affected by subsidence from – is Tahmoor South or Tahmoor West or - - -

MR QUINT: Tahmoor South, I think it is. Yes.

MR SHARROCK: Tahmoor South. But as another Commissioner just asked, this pine feather mining method is being used because it minimises subsidence. So is subsidence at Golden Vale Homestead your main worry about that property?

MR QUINT: The water – the effect on the water supply on the property itself would be our major concern.

MR FREE: Thank you, Mr Quint. Can we have Barry Arthur, please.

MR B. ARTHUR: Good morning and thank you. Good afternoon, I should say. My name is Barry Arthur. I am the manager of environment and sustainability with Wingecarribee Shire Council. And I am making this statement today on behalf of Wingecarribee Shire Council. The council made a submission on the Hume Coal EIS in June 2017. This submission was adopted by council and is from the submission that I talk from today. I will not read the whole submission, but just a number of points, to keep my time to a minimum. However, I will make a copy of the submission available to the IPCN. Wingecarribee Shire Council has been concerned about the prospects of a new coal mine in the Wingecarribee Shire since 2010.

Wingecarribee Shire Council has adopted a number of policies of opposition to any new coal mining, because of the concerns it has over potential impacts on groundwater, water catchments, agriculture and tourism. Council has adopted many resolutions since this time that reflect this long-held position. Most recently, in 2016 the current council reaffirmed its position, declaring the shire as a coal mine free shire, and placing signage of this declaration at the shire's entry points. The shire is a peri-urban area, located in the Southern Highlands of New South Wales, covering an area of 2700 square kilometres. The LGA comprises rural, semi-rural and urban

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areas, including historic towns and villages. It also contains many natural areas, including national parks and state forests. The shire is considered to be a biodiversity hotspot and is one of the most biodiverse regions in Australia.

The shire is located on Sydney's doorstep in the Sydney to Canberra corridor. Much of the shire's current growth and opportunity are being driven because of these regional influences, and the shire is not in the need of a new economic growth stimulator, such as a mine, which is proposed in the EIS. Rather, the impacts of a new coal mine put some of these regional opportunities at risk. The majority of the shire falls within the Sydney drinking water catchment area. And the integrity of this catchment is critically important to the residents and economy of greater Sydney and New South Wales. Protection of the region's water assets is fundamental for the agriculture industry and these are the foundations of our future growth and economic opportunities.

The shire is ideally located for agricultural business, in terms of transport routes to markets in Sydney, Wollongong and Canberra, with fresh produce easily moved to all three locations. This in turn provides opportunities for expansion into national and international markets. The EIS mentions in a number of places about the mining heritage of the reason, which may give the wrong impression about the character and nature of the Wingecarribee Shire Council. Council refutes any implied justification or normalisation of a new coal mine in the shire. Yes, there is a history of mines in the shire, which featured in the historical economic benefit to the region.

But whatever historic role mining played in the past, it bears no resemblance to the current and future role of this region, which – and the future role this region must now play in providing essential peri-urban functions to Sydney and the corridor Canberra. Locating a new coal mine in the region now has a much greater consequence, compared to putting a mine in the region 100 years ago. You just have to consider the population now of Sydney, the drinking water catchment and the number of people that use bores in this area.

This region is strategically important to Sydney and New South Wales and will become increasingly important in the years ahead, so any implied normalisation of a new coal mine through any historic relationship needs to be rejected. The Southern Highlands is renowned for natural beauty and rural – and its rural beauty. The combination of natural landforms, highly scenic rural landscapes and extensive historical features is a key element of the Southern Highlands tourism brand.

Tourism is well established and is one of our economic drivers for the Shire. It employs a high number of people and – big contributor to our economy. Along with the natural, rural and historical appeal to the region, our tourism identity also includes a growing food and wine sector and niche market appeal, such as identity as a wedding destination. It can be argued that one of the Southern Highlands' key tourist attractions is the historic village of Berrima. Berrima, located approximately two kilometres from the project area, is one of the best-conserved towns of the –

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from the colonial period of Australia. It has a significant collection of state heritage register-listed properties concentrated in a small area.

The surrounding landscape and rural setting is integral to its attraction as a tourist destination. The uniqueness of this village attracts a sizable number of tourists each year, which has a flow-on effect to the rest of the Southern Highlands. There are fears that an impact from a tourism – there – I beg your pardon. There are fears that an impact on the tourism appeal of Berrima could be felt across the area. Protecting visual amenity from a project of this scale cannot be achieved by any amount of conditions of consent. Even tree planting will not remove the impact. The undulating nature of the Shire would mean that the mire will be visible at numerous vantage points across the landscape. Even glimpses or view from the motorway of mining infrastructure and activity that have negative connotations impact on the perceived aesthetic qualities of the landscape.

The proposed coal mine and associated railway would be visible from Berrima and Southern Highlands visitors entering and leaving by the Hume Coal, as well as potential visitors driving through on the Hume Highway. It is foreseeable that the area to become associated with the mine and potentially lose its appeal. The council takes the Shire's economic and jobs needs very seriously, and it is committed to promoting a sustainable economy and sustainable jobs for our residents. At the time of the council's submissions, the Shire's unemployment rates were 3.1 per cent, and I think they're about 3 per cent at the moment.

With respect to Hume Coal project, there are significant elements of this project that add risk to the Shire's economic development opportunities. Among these are the risk to our water resources, the Southern Highland's brand of agriculture, and the Southern Highland's tourism appeal. At risk are numerous sustainable jobs, both now and increasingly into the future.

The impact of both surface water and ground water resource is one of the most contentious parts of the proposal. It has always been known that a new mine was going to impact on these water resources. The communities have been concerned about these impacts from the start of the Hume Coal project, and this has been a key message from the ongoing public concern. The EIS reports and successive reports have not silenced the debate on the impact on water. The EIS shows a high level of impact of groundwater resources triggering aquifer interference policy provisions across more than over 100 boards.

This level of impact from a relatively small project is unprecedented. The predicted impact alone is alarming and a strong indicator that this is now the wrong region or a new coal mine. Council is only concerned that the mining method proposed on the Hume Coal to try and reduce the groundwater impact is largely new and untested in Australia. The social impact from the proposal is a major concern for council. The Hume Coal project is already having a significant negative social impact to residents of the Shire, and council strongly disagrees with the social impact assessment conclusions put forward by Hume Coal.

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Over the last seven years, the threat of a new coal mine has caused considerable distress to some members of our community. This concern has extended well beyond the hundreds of properties owners in the exploration area, but also to residents and businesses across the Shire. Residents have been well informed and well organised in campaigning against the proposal because of the potential impacts from a new mine. The community have organised campaigns, rallies, public meetings, information sessions, public gate-post signage campaigns, petitions throughout the seven years.

Considerable fear and anxiety exists in some of our community over the impact that the coal mine would have on their environment, their properties, their farms, their livelihoods, their health and their way of life. Many in this community have already had poor personal experience with Hume Coal, and this has ranged from having the properties earmarked for exploration, the miner wanting access to their properties and bores, forced arbitrations, property blockades and even court cases. This community are not radical activists; rather it includes farmers, business people, property owners, parents, grandparents, families, locals, both short term and long term, and people who love this area and who want to protect it. Their concerns are genuine and well grounded, and relate to impacts on the region's important groundwater resources, agriculture, business, tourism, biodiversity and character.

The last point I will just say is that the Hume Coal is already having a physical and mental toil on residents in the Shire. Residents have described their feelings of anxiety, fear, angst, depression, traumatisation, helplessness, uncertainty and stress. These types of social impacts are unlikely to quickly disappear. No amount of tree screenings, barriers, making good offsets, buybacks or any other conditions of consent are likely to resolve these social impacts, nor turn the project into a no-impact mine.

MR SHARROCK: Mr Arthur, thanks very much for your presentation. We have try and take into account all the facts, and you mentioned at the start of your presentation that there has been historic coalmining here in the Shire, and you indicated the Shire is a – has a desire to be a coal-free local government area. But it is a fact, isn't it, that there is mining in the local government area now – Tahmoor are extracting ..... in the Bulli Seam, and - - -

MR .....: .....

MR SHARROCK: I'm asking, not telling. So that's not in the LGA, and what – and Dendrobium. Is there anything else you know?

MR ARTHUR: So Tahmoor is not at the moment, and even there at Tahmoor ..... proposal, which is an exhibition at the moment, is not going to extend into the Shire. Dendrobium does have some elements of longwall up in the water catchment area to the northeast of the Shire. It's not under any of our community but it is into the water catchment land. The Berrima or Medway Colliery has closed now. It's now in care and maintenance mode. And the closure plan is obviously causing some

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difficulty with that mine. The geology is obviously very different to the north to the shire – to the south with the other – the – which you're probably well aware.

MR SHARROCK: Okay. Thank you very much.

PROF FELL: Thank you. Now, that's the last presentation before a lunch break of 30 minutes, so we will resume at – I make it – say 2 o'clock. Is that acceptable ..... thank you. We look forward to seeing you back then. Thank you all.

RECORDING SUSPENDED [1.27 pm]

RECORDING RESUMED [2.03 pm]

PROF FELL: Could I encourage you to take your seats, please. We're running a bit ..... afternoon session.

MR FREE: And can I ask, please – I understand Mhairi Clark is the – I hope the correct pronunciation. Yes. Thank you, Ms Clark.

MS M. CLARK: Are we okay? All right. Fine. All right. Well, my name is Mhairi Clark, and I'm the chairperson of the Southern Highlands branch of the National Trust of Australia (New South Wales), and thank you very much indeed for allowing me the opportunity to speak. Now, as chairperson of the National Trust Southern Highlands branch, I represent more than 800 local Southern Highlands members of this trust who have asked me to speak on their behalf. We would like the panel to perhaps understand the human dimension of the impact of the proposed coal mine on this region and the community, not just the objections of property owners and other parties who may have their water affected.

A major charter for the National Trust of New South Wales is the preservation of our local environment, heritage and ambience, all of which are constantly under attack, none more so than with this current mine proposal. The current quality of the Exeter-Sutton Forest landscape conservation areas is in its intactness and integrity. Exceptionally little of the cultural heritage value has been destroyed or compromised within the area. Colleen Morris, who is on the New South Wales Heritage Council, is a well-respected heritage landscape consultant, and she concluded that the Sutton Forest-Berrima area was a cultural landscape of state significance. Her analysis is set out in the attached report, which I have handed over there.

Now, in the context of the history of European settlement of New South Wales, the Southern Highlands area has had a unique social and economic role, and its heritage values need recognition and protection if they are to survive into the future. These values are incompatible with the development of a coalmine landscape. The Exeter-Sutton Forest and Berrima landscape conservation areas were listed on the National

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Trust register in February 1998, and the reasons for this were from 1822, it played a vital role in the development of the Australian cattle and horse-breeding and racing industries.

It contained the country residence of 16 governors of New South Wales from 1879 to 1957, as well as the country homes of a range of prominent citizens, who built significant buildings from 1826 to the late 1930s: for example, Cecil Hoskins of – iron and steel founder; Arthur Yates of seeds fame; Paul Sorensen, a garden designer; Irene Hope Meek, founder of the Australian Brownie movement; Benjamin Carter, who discovered shale oil in Joadja; Christopher Bennett, proprietor of the Sydney Evening News; and so on and so on. Berrima is arguably the most intact Jordan – Georgian village in Australia, with the core village sitting within a designated significant cultural landscape and conservation area. There are 64 heritage items just within the village, 16 of which are on the state register.

Berrima is surrounded by a landscape conservation area listed under council's Local Environmental Plan 2010. Should this mine be approved, the aboveground mine surface infrastructure area proposed is within three kilometres of this historic village. Regarding Sutton Forest, Aboriginal and colonial land management is still visible. The area is significant due to the travels of the first explorers. The first colonial land grants were given in this area to luminaries such as John Macarthur, Hamilton Hume and many others, plus the addition of churches, graveyards and historic railway station complex, original subdivisions and numerous outbuildings.

Exeter is significant as an original area used as a nursery on the development of heritage food plants needed for war self-sufficiency. Within the Exeter-Sutton Forest landscape conservation area, there are 43 properties all individually listed on the National Trust register. Finally, I would like to touch upon the current local economy, which is largely dependent on tourism. This Southern Highlands area is currently developing a $90,000 major plan, in conjunction with Wingecarribee Council, for an annual heritage festival, which will focus on the significant heritage values of the Berrima and Sutton Forest and Exeter cultural landscapes in which our communities and stakeholders live. This annual festival will highlight the unique character of the highlands.

Here, we are the custodians of Australia's most intact colonial village, Berrima, dating back to the 1860s, with infrastructure built by convict labour. It is the only original village in New South Wales virtually unchanged since John Macarthur. The festival will be highlighting the experience of stepping back in time for the visitors, an experience which will be severely compromised by this proposed mine development. Whilst we are greatly relieved that the DPE considers this mining project to be against the public interest, we do urge the IPC to also endorse this view. Thank you.

MR FREE: Thank you.

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MS TUOR: Just one – another question: you mentioned specifically that – about the importance of the cultural landscape and the impact that you seemed to mention is about the mine infrastructure. Is that the main concerns that you have about impacts on the cultural landscape?

MS CLARK: Yes. Yes. It is.

MS TUOR: All right. Thank you.

MR FREE: Thank you, Ms Clark. Can we have, please, Michael Meldrum to the lectern.

MR M. MELDRUM: Good afternoon. My name's Michael Meldrum, and I have a direct interest in the proposed development as a local resident who will particularly affected by the development. I also represent Climate Action Now Wingecarribee, which we call CANWin, which is not directly affected by the proposed development but has an indirect interest in the project as a representative of its members and the wider Wingecarribee population. For interest of those in the room, I will start by a – way of a brief introduction of CANWin. This organisation was formed in 2006 and, in the following three years, held regular street events, such as the Walk Against Warming. These were well attended and well documented on our website.

Since those early CANWin – early marches, CANWin has continued to act in several ways, including guest speakers on a variety of climate change and related issues. After joining CANWin in 2011 at a very successful clean energy workshop, I was successfully elected as renewable energy discussion leader and, in 2013, took over the role of convenor. It is in this role that I attended the Australian Climate Action Summit 2013, held in Sydney. There were a range of presentations, including one which provided a simulation of the Australian continent under projections of two degrees C and four degrees C warming.

These projections were colour-coded parts of the – sorry. These projections colour-coded parts of the continent that would be impacted by climate change, and I recall the dark-green shading on the images showed areas of the continent for which human life would be unsustainable. Whilst the two-degree scenario showed significant impacts across the country, most of the populated areas seem to avoid the worst impacts. This picture for four – the picture for four degrees C increase, however, was frightening. There were very few locations projected that would enable human life to continue to exist. In 2014, CANWin invited Professor Will Steffen of the Climate Change Council to provide a talk to our members on the carbon cycle.

This was an outstanding presentation, backed up by peer-reviewed research, providing the underlying science, human-driven changes to the carbon cycle, observations of these impacts on the cycle, why fossil fuel emissions cannot be offset by storing carbon in land systems, vulnerabilities of the global carbon cycle, examples of climate change damage observed in a variety of countries and the carbon maths underlying his forecasts, which were shown on the screen. Professor Steffen

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concluded his presentation with a graph showing warming since two – 1900 and forecasts based on the science through to 2100. His associate, Professor Lesley Hughes, then overlaid on this picture her lifespan, which I'll just put up there, the lifespan of her children and the lifespan of her grandchildren.

This was a defining moment for me, personally, as my lifespan is roughly equivalent to that of Professor Hughes, which then suggests the lifespans of my children and my grandchildren would be over equivalent periods. So my take-away message from this presentation was that myself and my children would experience some discomfort from – due to global warming, however, based on those projections cited earlier, it would be unlikely that my grandchildren would survive. I submit the scenario for the Commissioners and all those in attendance for your consideration and ask that the mine not be approved. Thank you.

PROF FELL: Thank you very much.

MR FREE: Thank you, Mr Meldrum. Can Michael Verberkt please come up to the lectern.

MR M. VERBERKT: Good afternoon, Commissioners. My name is Michael Verberkt. I am the president for Battle for Berrima. In addition to the formal submission that Battle for Berrima has made to the IPC, I would like to address a number of other points in the Department of Planning and Assessment's report that are of great concern to the community and which demonstrate that the Hume Coal Project and the Berrima Rail Project are not in the public interest.

I will start with the net economic benefit. Hume Coal's EIS states the project will bring the New South Wales Government a net economic benefit of 373 million over 20 years. That equates to approximately 18.6 million per year, which the report says is a comparatively low economic benefit compared to other mines in the Southern Coalfields. Battle for Berrima has long questioned the economics of the project and the Department's independent expert, Mr Andrew Tessler, of BIS Oxford Economics, estimates that the net economic benefit in New South Wales will only be 127 million. That's less than half of Hume Coal's estimate and just a tiny 6.3 million net economic benefit to the State of New South Wales each year.

In the report, Mr Tessler's comments that the approach taken to valuing externalities, such as the impacts on water resources, make good provisions and operational safety issues could substantially reduce the economic case for the project going forward, which highlights one of the community's greatest concerns. With the economic case for the mine already weak, the community believes that if approved, Hume will seek to maximise the likely high cost of the make good provisions in their search for greater profitability when it comes to restoring private water bores on land – that have failed on land or that are compromised.

Our community is deeply concerned that if the community – if the Hume Coal Project is approved, the proponent will seek to get approval to extract more coal than

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is currently proposed – 35 per cent – that this will result in significant subsidence and associated impacts on surface water and structures, that the operational safety risks identified in the report may lead the proponent to seeking approval to alter the mining technique to open cut in areas where the coal resource is close to the surface and more generally and that such an alteration in the mining technique would burden the community with additional health risks through exposure to coal dust microparticulates.

The community also considers that the much talked about benefit of 300 jobs when the mine is at its peak of operations will be proven unlikely given the weakness in the economic case and the rise of automation over the life of the mine. With so many residual uncertainties about the scale of the project's current economic benefits, we believe that it's highly likely that the mine will need to be expanded significantly to become profitable and that will attract more incompatible industries and the like to the area.

Concerning the predicted impacts on groundwater drawdown, the report considers that the drawdown impacts on the aquifer would be the most significant of any mining project ever assessed in New South Wales history. 118 private bores to be affected, some of those for up to 76 years and beyond, which is a generation. And the report anticipates scenarios whereby there will be no suitable or practical mitigation or prevention options available to Hume Coal to make good. This therefore places an unacceptable level of risk on landholders and burdens them with the significant legal costs of resource should it not be possible to reach a satisfactory resolution with Hume Coal. Landholders in immediate need of restoration of their water supply will have no alternative but to negotiate with the gatekeeper of water, Hume Coal, who would, in Battle for Berrima's view, have a direct conflict of interest with respect to their make good obligations.

Given the significant disruption to the community that this mine would create, the report is undoubtedly correct in its conclusion that there will be a large number of negotiations and ongoing disputes with local landowners. Commissioners, with the prospect of the proponent being unable to adequately compensate landholders for their loss of water, it is impossible for the project to be in the public interest. The report makes it clear that Hume Coal has failed to adequately address the complex environmental issues associated with this proposal and under the well-established precautionary principle, the project should be refused development consent.

Concerning the report's handling of other impacts, such as noise, vibration, air quality, greenhouse gas, traffic, heritage and agriculture, these are dismissed with one sentence. The report says that:

> *…the Department accepts that these potential impacts are likely to be able to be managed, mitigated or offset to achieve an acceptable level of environmental performance, subject to the provision of additional information* –

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however, since the Department handed down its report, the Chief Justice of the Land and Environment Court has rejected the Rocky Hill coal mine in Gloucester, ruling that the development would increase greenhouse gas emissions at a time when they urgently need to be cut. Climate change expert Professor Will Steffen gave evidence that Australia would be unable to meet its obligation under the Paris Agreement if that mine were to be approved. That mine, Rocky Hill, was proposed to produce just 21 million tonnes of coal over 60. The Hume Coal Project, however, is proposed to produce 70 million tonnes over 20 years. It is not clear what approval conditions the Department or the ICP could propose that would mitigate the increase in global local concentrations of greenhouse gases that this project would produce. The report says it:

> *…does not consider that there is any existing shortage in coking or thermal coal that needs to be filled.*

So, once again, surely, given the considerable environmental risk involved, the precautionary principle is triggered and the project should be refused approval. Concerning heritage, it is impossible to assert that the impact of the project can be mitigated. Berrima is Australia's best preserved example of a Georgian village. Surrounding rural landscape, sightlines and vistas are already being permanently altered by the proponent's planting of deep hedgerows intended to obscure the huge stockpiles of coal and the above-ground mine working infrastructure. On the matter of agriculture, the Department cannot say that there will be scenarios where it is not suitable or practical to mitigate a farmer's groundwater loss and then assert the idea that impacts on agriculture can be mitigated, and as for noise, vibration, traffic and the many other impacts that can only increase the unacceptability of this.

But it is the untested pine feather mining technique and the plan to dump large quantities of toxic rejects and mine water into the mine voids that has caused by far the greatest community concern. The proponent has told the community there will be little or no subsidence and therefore no impacts on surface streams but the report reveals that the proponent's geotechnical model is considered inadequate, particularly when estimating pillar loads and stability. Stability of the mine is fundamental to the safety of the operations and potential surface subsidence and this raises the most uncomfortable set of truths. We know that the pine feather design has never been tested in New South Wales, let alone Australia before. There are no operational examples of the technique in use internationally that we can find.

We know that Hume Coal has been prevented from drilling test bores across a 1000 acre area of – in the centre of their mining lease because landholders have refused access. Hume Coal admitted during its community consultation sessions in Sutton Forest that if it were prevented from gaining access to that land for test drilling, the mine would not be able to proceed. Hume Coal has subsequently lost its legal battles for access with the landholders due to significant improvements on their land and has been unable to complete these assessments. There is therefore little confidence in Hume Coal's geotechnical assessment and no confidence that the coal mine will have

stability required to operate safely, as well as to keep the toxic mining rejects and mine water away from the aquifer permanently.

Should these rejects and water pollute the aquifer, there will potentially be catastrophic, irreversible impacts for the Sydney water catchment. Finally, Battle for Berrima agrees with the assessment report statement that the mine design presents a range of uncertainties and safety risks, as well as the likelihood of significant impacts on water resources. We also share the department's concern that the project site is not suitable for the development of the new coalmine. The report clearly states that there is a threat to serious harm to both groundwater and surface water resources, and that there is considerable scientific uncertainty about the level of environmental damage to both. As a result, the precautionary principle must be employed; as the project is currently proposed it is not an ecologically sustainable development.

In closing, we therefore ask that in considering its recommendations that the IPC finds that the precautionary principle is triggered due to the significant uncertainties and that the IPC determines the project site and exploration license area not suitable for the development of a new coalmine because it poses too great a risk to the water security within the Sydney water catchment. And, finally, that the IPC endorse the finding of the department's report that the project is not in the public interest and should not proceed. Thank you.

MR GATES: Just a question, if I may.

MR VERBERKT: Sorry.

MR GATES: You mentioned there that you thought the mine might need to be expanded to keep it profitable. I'm just trying to – is there a – were you thinking that they might need to extend its life and go for longer, or are you thinking it might somehow ask to do a different type of mining?

MR VERBERKT: They could ask to go longer, they could ask for open cut, they could ask to take more than the 35 per cent of coal that they've currently asked for. There are numerous possibilities.

MS .....: We can't hear you, Mike.

MR VERBERKT: Sorry. I will say it again. There are numerous possibilities: it could be that they go to open cut, that they ask for more than 35 per cent of the coal that they've currently asked for in this proposal, or that they ask for the mine to run longer than 20 years. There are several options.

PROF FELL: Thank you.

MR FREE: Thank you. The next speaker is Kimberley Martin.

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MS K. MARTIN: Welcome. We've waited a long time to talk to you. My husband Peter apologises; he's unable to be here today due to business commitments, but he's presenting to you tomorrow. Before I begin I would like to acknowledged friends, volunteers, who are no longer with us. We miss them dearly and we're very grateful for their work, support and belief in what we've been fighting to protect.

My husband, Peter, and I own a farm on Golden Vale Road in Sutton Forest; we've owned it since 2002. We've developed the property extensively, planting 2400 oak trees to produce black truffles, growing and selling lucerne and also growing vegetables. Gardening is my passion. Over the years we've planted over 30,000 natives, 300 introduced trees plus endless shrubs and plants in freeform gardens we've created. We have a large lake which provides irrigation to the truffière and our special trees and gardens.

The proposed Hume Coal Mine will go right under our farm. It will drain our bore and it will destroy our water supply if it's ever built. My husband and I arranged the first of many community meetings on 18 August in 2010 after we found out that Anglo American were selling a local exploration license AU349 to a consortium of POSCO and Cockatoo Coal. Our local member, Pru Goward, the council and the community were totally unaware of this threat. Over 300 locals attended the meeting in pouring rain. The representatives from Hume Coal explained to all the locals that they bought the licensed site unseen and that we shouldn't be concerned. Needless to say, we weren't impressed.

The Southern Highlands Coal Action Group was set up promptly and we began campaigning against the mine. A nine year saga had begun. I still refer – remember the first meeting we had with the chairman and CEO of Cockatoo Coal and other senior executives in Sydney in late 2010. We were told in no uncertain terms that the mine would be in full production by 2016 and if the community didn't like it there would be trouble. We weren't impressed. Unfortunately for POSCO and Cockatoo Coal there was trouble. Cockatoo Coal is no longer in existence, and the POSCO mine hasn't seen the light of day and never will.

When we started, we had no idea that we and the local community would have to – what we would have to endure. It had been incredibly unpleasant and relentless. POSCO has been a ruthless and uncompromising opponent. The bullying and intimidation have at times been unbearable. POSOC has waged a campaign of divide and conquer within the local community.

Against our will, POSCO forced my husband and I, along with our neighbours, into years of land access arbitration to try to gain access to our properties for exploration. They denied us legal representation in the process. They knowingly forced our elderly neighbour, who was undergoing chemotherapy at the time, into arbitration despite her illness. In 2016, five long years and four court cases later, we won a comprehensive legal victory in the Land and Environment Court. It prevents POSCO from getting access to a very large part of the exploration license area.

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At the time, Hume Coal's project manager, Greg Duncan, said that the court decision would have severe ramifications for exploration and mining in New South Wales. How right he was. Over the years, POSCO has also purchased local landholdings by stealth, using agents posing as pastoral company representatives and using law firms as fronts. They have tried to ingratiate themselves into the local community by sponsoring everything in sight – football clubs, soccer teams, garden centres to name a few. This has caused real division, sometimes setting neighbour against neighbour. They've used social media to denigrate local landowners and opponents of the mine, labouring us as anti-coal activists and the like. It has been an unrelenting war waged on local landowners and objectors.

I spent 12 months researching POSCO and its track record around the world. What I discovered was this behaviour is just the norm for this company. POSCO has a shocking international environmental and human rights track record, and it's all documented. There are too many examples to mention. Endemic bid rigging and bribery in South Korea, human rights violations in Odisha in India, rainforest destruction in West Papua, and forced labour in the cotton fields of Uzbekistan.

Why the government would ever consider allowing them to mine in such an environmentally sensitive area is beyond me. Fortunately, the beleaguered Southern Highlands community has held together through thick and thin, although the social impacts have been chronic and severe. The symptoms we've seen across the district have included physical illness, alcohol abuse, marital stress, anxiety and depression, constant feelings of uncertainty and hopelessness, financial worries, and the inability to plan for the future. All of this with zero support from the State Government bureaucrats who insisted that we just had to go through the process.

Seven years after it started, when the EIS was finally lodged, we were told that we were now eligible for mental health assistance. This was far too late; the damage had already been done. It's hard to estimate the time – the amount of time, money and energy that has been put into this campaign by our volunteers and the local community. It's immeasurable. Hours, weeks, months and years have gone into this fight. Endless meetings, rallies and fundraisers, managing the press and social media, researching, writing submissions and documents, formulating technical reports and running information sessions, attending local markets and events, creating marketing materials and collateral, relentless networking and attending forums all over New South Wales and, indeed, Australia; preparing legal cases, arranging experts, constant lobbying of State and Federal politicians; the list goes on.

This campaign has been a fulltime job for my husband for years. It has taken him away from our family. We've both had to put our lives on hold. I've watched him spend endless hours hunched over the computer when he should have been outside spending time on the property and doing all the things that he loves. He has always been very positive, has always believed that we would win this fight whatever the obstacles. However, from my perspective we will never get that precious time back.

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The one upside from this coal fight has been the people we have met and befriended. We now have a wondering extended community who supported one another through every – through thick and thin. They have dedicated so much time, money and effort to fight POSCOs plans over a very long period of time. Had we not taken on this campaign we would be just another rural community whose environment had been destroyed by large, foreign-owned multinational corporations in a pursuit of the corporate profit. We're not about to let this happen. Thank you.

PROF FELL: Thank you.

MR FREE: Thank you. Thank you. The next speaker is Derek White.

MR D. WHITE: I would like to thank the commissioners for the opportunity to speak here today. My name is Derek White. I'm a mining engineer of nearly 50 years experience in base and precious metals and industrial minerals, but I have to say at the outset I have no direct experience in coalmining. As a slight change of pace today, I would like to talk about a subject that is part of the Hume Coals Mining Proposal where it says that they would place 100 per cent of the waste materials from their coal preparation plant into underground openings soon after they are produced.

This is a subject I do not believe has been adequately addressed either in the EIS, in Hume Coal's responses to my objections to the EIS, in the independent experts' comments or, ultimately, in the Department of Planning's final summary report. It was also interesting to note in both Greig Duncan's and Clay Preshaw's presentations today they talked about water storage and conveniently skipped over the subject of rejects placement. This is despite the fact, in my view, that this aspect of the proposal is as significant a fatal flaw as the reasonable groundwater depletion or the highly questionable pine feather mining method.

At first, I was very frustrated by this apparent lack of attention to such a mission critical aspect of the project plan; however, I eventually come to the view that this is the result of a lack of exposure by all concerned to underground fill placement systems both because such systems are non-existent in other coal mines and also because nobody involved has had much, if any, underground base metal mining experience. This is despite the fact that Hume Coal blithely states in its EIS that such a method is common practice in the base metals industry. Given this situation, I'm willing to bet pounds to peanuts that my 40 plus years as a mining engineer in the base metals industry with considerable exposure to underground fill systems in places like Mount Isa and Cobar makes me more of an expert on this subject than anyone else currently associated with this project.

I will keep the remainder of my presentation fairly brief as I have been told to assume that the Commissioners have read my objection submissions regarding the Hume Coal EIS which I have also sent to the IPC. My main points are I'm certain there is not one mine in Australia that places 100 per cent of its waste products soon after they are produced. This conclusion is supported by extensive inquiries within the industry. There are only two instances that I can find where this approach has

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been considered in coal mines in Australia. One was only for partial placement of coal prep waste back underground to reduce truck movements through the local village, and that was the Metropolitan Coal at Helensburgh. And this was only adopted after several years of extensive test work, and the other was an option that was considered at Centennial Coal Lithgow Mine where it was rejected by a highly reputable engineering firm on the basis of complexity, cost and worker safety. And I have given the Commission the relevant papers in this regard.

I also have no doubt that any mine that does place a significant quantity of mine waste back underground as fill has the safety net of a tailings dam within their operations. This enables them to dispose of any processed ill material if there is an unexpected interruption to underground placement which often occurs, I can assure you. It also provides an outlet for any portions of the waste stream that must be removed to make the filling system viable from an engineering standpoint, and this includes factors such as pumpability over long distances, suitability for safe placement in the underground openings and suitability for timely recovery of sufficient processed make-up water as I think is envisaged by Hume.

This raises the strong possibility, if not inevitability, of a need of a tailing sand to be located in the Sydney water catchment, and this is a significant red flag for this project proposal. There is also a high possibility, in my view, that the proposed filling system will not work at all, and I haven't seen any evidence to test work in this regard. What happens then: a mine on care and maintenance while the whole operation is rejigged, installation of a large tailings dam, mine closure? In any case, this would create a major environmental and social nightmare.

The following points are only slightly less critical in the overall scheme of things but still highly concerning and an important element of your final decision regarding this project. There would be a need for a large stockpile of waste given that the early production is from high-waste content areas and the openings for fill placement in the early days would be limited. This has not been dealt with, as I can see, in EIS. The fill process plan is likely to be large and complex creating negative impacts on the project economics and an increased environmental concern. Surface water management will be greatly complicated by such large stockpiles and processing facilities.

There is a real question in my mind as to whether the fill material can be successfully and continuously pumped for up to 10 kilometres from the fill plant which I think you will see in the later stages of the mine plan. There is a significant risk of pipe failure or blockages in the fill system creating safety hazards and the needs to divert fill to a non-existent tailings dam. The physical placement of fill in headings will be a significant engineering and worker safety challenge given the flow characteristics that both hydraulic and/or paste fill and the proposed mine geometry, and if the commissioners are interested, I'm willing to try and expand on this a bit at the end of my presentation. There is a high risk of groundwater contamination from additives introduced to the fill during placement and/or the waste material itself. The Southern

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Highlands is a known seismically active area which can cause liquefaction of paste fill, and this in other mines has caused unexpected bulkhead failures.

In conclusion, I have to say that I'm highly conflicted in making this presentation. I've been involved in a number of mining project development and issues over the past 20 years including the BHP Hartley Platinum Project in Zimbabwe, the recently opened CBH Resources Rasp Mine at Broken Hill and the prudential rejuvenation of the Malachite Resources Conrad Mine on the New England Tableland and Argent Minerals Kempfield Project near Trunkey Creek in Central West New South Wales.

I have actually prepared a comprehensive EIS for a state significant mining development in New South Wales, the Argent Minerals Kempfield Project in the full expectation that this project would proceed and that I would be actively involved in this development; therefore, there is no way I could be considered anti-mining. However, this particular Hume Coal Project – and I have to say I wrote this before I heard all of the recent statements – is the wrong project in the wrong place and at the wrong time, and if the precautionary principle has any teeth at all, the chance of things going wrong in the fill system, as well as many other areas, are much too high to let it proceed.

I have provided my CV to the commissioners in case they're wondering what my experience in this area is. You will note the last 25 years has really been focusing more on project assessment and project development activities, and I have to say that if I was the project development management for this particular project, I would not be willing to recommend to the principal that it proceed unless and until I had a lot more certainty about a wide range of key issues including the structural geology and the resulting groundwater model, relatively unique mining method being put forward and the proposed fill system with no known precedent which has a lot of safety and environmental risks attached. I trust the commissioners with their obvious experience in the industry will form a similar view. If you have any questions, I will try and answer them. Thank you.

MR GATES: Mr White, thank you for your presentation. I have a very general question. You mentioned in your presentation a few moments ago that if you look at the latest, I think, iteration of the mine plan, you're talking about pumping the paste 10 kilometres - - -

MR WHITE: I'm not even sure it's paste - - -

MR GATES: Well – but is it 10 kilometres? I was looking at the mine plan. Is it really that far?

MR WHITE: Well, I think when you go around all the corners I think you'll find it's probably close to 10 kilometres.

MR GATES: Okay.

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MR WHITE: Again, it depends on whether you're using paste fill or wet fill or – and there's a whole lot of questions around that which I think would be too complicated to deal with in this particular - - -

MR GATES: Yes. Just seemed a long distance to me.

MR WHITE: It does seem a long distance. I'm sure it's been done and I think you'll find that in South Africa they have done it in certain areas, you know, probably paste with some very high pressure reciprocating pumps but - - -

MR GATES: Thank you.

MR WHITE: You don't want to explore the mine's placement issues?

PROF FELL: Thank you very much.

MR WHITE: Okay. Thank you.

MS TUOR: Well, actually, for my benefit - - -

PROF FELL: I'm sorry.

MS TUOR: - - - being the non-expert on the panel. Yes, if you could, that would be good.

MR WHITE: I have to start by saying that in the base metals industry the openings are usually quite large vertical openings and the fill is emplaced usually through vertical holes wherever possible with very short horizontal movement because that's where you get your problem areas. In this one, if you could imagine a 160 metre long opening of four by three and a half metres I think is the dimensions, and you have to get fill from the – as they said, from the safe part of the opening – beginning of the opening all the way to the other end, it's not going to run there. You'll find that this fill material drops out with a pretty high slump angle and the water runs off and seeing they're all down-dip panels, the water will run to the other end of the down-dip panel.

So (a) your water's going to be there and if you ever want to get it back it's going to be almost impossible but (b) to get the fill material to the end of the panel, you have to either – as they said at Centennial Coal, you have to put in a bulldozer to push the material from the entrance of the opening all the way to the other end to make sure it's filled, which in an unsupported and in a poor air quality area that we know this is going to be, I wouldn't want to send people in there. Or else you take the pipework right to the end and you fill the end first and then you start pulling off the pipework back to the entrance so that all of the spaces are filled. Again, people in an unsatisfactory environment. So I think there's a significant worker risk involved in this.

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PROF FELL: Can I ask what degree of down-dip would make it feasible?

MR WHITE: I don't think it's feasible at all, given that there's no ground support in these punches that we're talking about and there's no ventilation. So you're talking about dead air and in a ground that can start failing at any time and you're going to send people in there? I wouldn't do it. Void my first class ..... certificate.

PROF FELL: Got another question?

MR GATES: This is not an area that I know but you can't put it on a conveyor belt, take it down on a conveyor belt in a reasonably dry .....

MR WHITE: You're going to take it to the end of the heading on conveyors?

MR GATES: It's a question.

MR WHITE: Well, the question I would have is how do you install the conveyor if you haven't got ground support. You can't get in there. Plus the fact that if you want to lose your conveyor you've to dismantle it every time and take it to the next heading. That's a huge amount of cost and complexity involved in that sort process.

PROF FELL: Thank you for your contribution.

MR SHARROCK: A supplementary - - -

MR WHITE: Thank you.

MR SHARROCK: I have – I had a supplementary question.

MR WHITE: Sorry. Sorry.

MR SHARROCK: And you did say earlier we could debate this all afternoon.

MR WHITE: I'm so glad you're interested.

MR SHARROCK: But just as a suggestion - - -

MR WHITE: Yes.

MR SHARROCK: It's a detail I guess – I'd imagine if they're going into these ..... which are dead ended, they'd use a remote control dozer. They wouldn't send anybody in unsupported ..... I'm not doing your public relations but I'm suggesting - - -

MR WHITE: I guess you could certainly use remote control pieces of equipment and I – I just think it's a questionable process, the whole thing. Thank you. Sorry, anybody else? Is that – no.

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PROF FELL: Sorry about that.

MR FREE: Thank you, Mr White. Duncan McDonald is the next speaker.

MR D. McDONALD: Yes, good afternoon. I'm here today to represent my family who've owned property in the southern forest area for over 50 years now and I've been regularly coming here ever since. I'm a highly qualified practising food scientist and technologist and entrepreneur, running several food and technology based business and I'm a permanent resident in Berrima now. I strongly reject the project from a social, environmental and financial sustainable perspective. I moved permanently from Sydney to Berrima 18 months ago to pursue the opportunity to grow and market value add foodstuffs and provide food science and processing support to other interested parties.

Over the last year of relocating my business, I have come across a number of other business people interested in pursuing this area and its fertility at different stages of implementation. Time doesn't allow me to elaborate on the numerous reports I've consulted to support making the right decision to set up my business here but I've included a few salient points on the demographics of the region, which is contained in the report which I have left you to consult. But it is consistent with most of the speakers here today. A key driver for me and many other innovative businesses in our environment is to retain a clean and green image as the traceability of food products and ingredients to the origin is increasingly in demand by consumer.

I have an apple here which I picked off my orchard this morning in Berrima and it's – and in the very near future this apple, if it's marketed in the Sydney market or other markets, will have a barcode on it. People will use a phone, they will scan it. They will find out where it was grown, how it was grown, the areas associated with that particular apple growing here. This one is clean and, as you can see, it's green. The garlic here is from some research which I'm currently working on and my intention is to convert that into a black garlic, value-adding it and selling it both locally and internationally. It will have an appeal of a Southern Highlands brand association.

This is where global and local market for value-adding product is heading. Any elements of contamination or impacts on health and wellness to the green picturesque region associated with mining in this area, whether through dust or affiliated water contamination concerns or traffic congestion stemming from railroads, etcetera, will taint this region. It will taint what we already have. Social media will make the most of it. We have, as Mr Arthur from council mentioned, a picturesque clean and green environment that supports a health and wellness platform. We have an aging population in this area which hasn't been mentioned although for over 65s, which accounts for 25 per cent of this area and it's growing at double the rate of any other aged category in this area.

We have a tourist trade of nearly 1.3 million visitors here, 34,000 are international – guess – generating a $200 million a year in sales and services revenue, employing currently over 2300 full time jobs. This is stats that I got out of the council. We

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have a unique and competitive advantage and when reading our Fit for the Future documents for our standalone council and the regional action plans generated by the NSW Government for this area, they support our council. Pru mentioned that this morning and it interfaces with the operational plans of 2018 and '19 which puts great emphasis on retaining the character of this area. If I could just have two more seconds please.

I'm now one of many investing time and energy into this area. Please consider the damages this project will do to the reputation and desire for businesses like mine to invest in this area now and in the future. Again, as Pru mentioned, we don't want another Hunter Valley region. I ask, on behalf of my family and likeminded business, that the Commission and Minister reject these two projects. Thank you.

MR SHARROCK: Well, thank you for your presentation. This is a very brief and almost a detailed question, but I notice in your presentation you have there, they've got "open carriage trains", but the plan is to have closed coal mining .....

MR McDONALD: Yes, they are. Could I just clarify, part of my concern, because many, many years ago – I've been a food scientist for over 40 years now, and I actually worked on a project that coal dusts are present up in the Hunter Region using gelatine as a gelling agent to suppress the dust. The dust was generated from the stack of the coal, but it was also at the loading stages of the carriages, and I haven't seen in any reports the loading stations for this coal, and I'm sorry, I'm not an expert in this space, but that was the concern that I shared.

MR SHARROCK: Thank you. I haven't seen them either, but there are places where they can come right down to the wagon, but - - -

MR McDONALD: Correct. I understand.

MR SHARROCK: - - - I haven't seen them either, but thank you.

MR .....: That's it?

MR .....: Yes.

MR .....: Thank you.

MR McDONALD: Thank you.

MR FREE: Thank you, Mr McDonald. Gordon Markwart is the next speaker.

MR G. MARKWART: Thank you. I've been told not to lose my head today, so I thought I'd bring it with me. So thank you for that. Fingers crossed. Wonderful. Wonderful. Thank you very much. Thank you for allowing me to speak here today. I just want to express that my views are my own. They do not represent any organisation or any other person. They are my views alone. Okay. My name's

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Gordon Markwart. I grew up in Robertson, which is about 25, 30 k away from the proposed mine site. I worked in Sydney for 35 years. I came back eight years ago. I love the place, great place to grow up. I'm a local councillor. I'm a member of the Local Greens.

Okay. I'll keep this short and sweet. Hume Coal does not have a social licence. You can look around this room. You can talk to people in the street. They simply do not have the support of the local community. This mine is basically dead in the water. It is not supported by the locals, nor is it supported by council. You can see there, the sign, "Wingecarribee, the Coal Mining-free Shire", and you'll see a friend of mine also there. Council and the community are opposed to that – this mine, and I am part of the community and part of council. Now I want to talk about the report, because I actually did read the fine print, which I'd like to quote here:

> *The purpose of this hearing is for the Commission to hear the views of the department's assessment report.*

So I'm going to talk about the report, just one aspect of this report, and that aspect is shown here, page 37, where, basically, we talk about emissions, and there is a little clause there, a get-out-of-jail free clause, "excluding the end use of coal". So this report excludes the end use of coal, yet, when you burn coal, of course, it does have impacts on the atmosphere, and the atmosphere is the same atmosphere here, in China, in India, everywhere. It's the same atmosphere, but, for some reason, and it's a State Government reason, we exclude this major factor.

The total coal being burnt over 19 years, according to documentation, is about 66.5 megatons. In CO_2, 200 million tonnes, plus other emissions. And while I was waiting this morning, sweating in my little suit here, I worked out what that comes too in volume. At sea level, this is 100 billion cubic metres. That is one hell of a blanket we're putting around this earth, and that is my main concern. We have left this out of the evaluation. I agree with the conclusion of the report, but we could've reached the same conclusion simply by including the impacts of the emissions.

So excluding the end use of coal, I repeat, Co_2 from burning Australian coal offshore, it impacts Australia. It impacts Australians. It impacts all of us. We share the same air, the same global climate, the same oceans. Excluding the impacts of Australian coal burnt offshore is ridiculous. Absolutely ridiculous. In February 2019 – this has been referred to by other speakers – the Land and Environment Court found emissions of greenhouse gases and the resultant climate change from a proposed mine site were among the reasons to reject the project. There's your answer with Hume Coal. We didn't have to go through all this. It simply is inappropriate. Excluding the impacts of Australian coal burnt offshore now is even more ridiculous than it was a month ago.

Okay. Many of you will have seen this graph. Burning coals gives us global warming. It's real. The figures don't lie. People deny and people lie, but the figures don't lie. If that was my shareholding – I don't have any shares – I'd be happy. You

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couldn't say it's going down. It is going up. New South Wales and Victoria last month had their hottest month on record. I live at Robertson. I grew up there. Now, my grass dies. Forty years ago, it didn't. Climate change is real. Global warming is here. Here's a summary of human's approach to climate change, a timeline. Denial. Denial. Okay, it's not us. Oops, we're buggered. If we're not careful, that's where we're going to be.

There are other issues. Coal is a bad investment right now. We're going to miss our Paris 2030 emissions target. I can talk about why that is the case, but it's a bit of a detail right now. Building new coal power stations requires government subsidies, our money. Renewable projects are much cheaper. It's the way to go. Many countries are now closing coal mines, now and in the future. Coal mining companies know business is looking grim. Glencore know this. Recent announcement. There are 46 countries, states and provinces and cities that have joined the global alliance to phase coal out. One of those is the ACT. So it's here as well. We do learn.

So I ask are these people wrong? Climate change does not respect borders. It doesn't respect who you are, rich or poor, big or small. Burning coal does not respect borders. It doesn't respect you if you're rich or poor, big or small. It impacts all of us. Is this gentleman wrong? 25 years ago, people could be excused for not knowing much, but now, there is no excuse. If you don't believe in climate change now, I'm sorry, we're in deep trouble. Is this person wrong – whoops, sorry, not that person. Climate change is real. It's happening now.

Globally, it's the most urgent threat we face. Well, I'm just staggered. Is David Suzuki wrong? The damage that climate change is causing is causing and will get worse. The impacts of CO_2 and methane last 20 or 30 or 40 years. So the climate we're experiencing now is from what we've done 20 or 30 years ago. And that comes to my problem. I will skip David Attenborough; he's repeating. Are our youth wrong? Should we be treating them the way we are? That sign basically says "school strike for climate". I support that. Our kids need to tell us oldies where we're taking their world. It is their world. It is not our world. So I ask two simple questions: give my grandkids a future – three lovely girls; I'm the wrinkled old fart in the background – and I ask give all our grandkids a future. No new coal mines and certainly no to Hume Coal. Questions?

MR FREE: Thank you.

MR MARKWART: Thank you very much. I won't forget my head.

MR FREE: Thank you. Kurt Newman is the next speaker.

MR K. NEWMAN: Thank you, Commissioners, for the opportunity to speak. I'm actually speaking in favour of the project, because I believe there are great economic and community benefits. I've been a resident of the Southern Highlands since February 2012. I would like to express my total support for the above-mentioned projects. I was the founding chair and director of the Southern Highlands Chamber

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of Commerce and limited from 2013 to 2016. And in that time I would regularly meet with members on a one-on-one basis over coffee. The reason was to understand their business and what they expected from the chamber. The subject of Hume Coal would come up because of the anti-coal signs and the potential negative impact on business. I would ask for their thoughts.

The responses varied, depending on the type of industry held. And support for Hume Coal was 100 per cent in favour. This was followed by expressing fear of the aggressive behaviour of the anti-coal lobby and, therefore, refraining from staking public support. From a business perspective, starting from the construction phase, there will be direct employment for local employment, 400 full-time jobs and during the operations, 300 full-time jobs. In employment terms, employees must live within 45 minutes of the site. Family members would therefore be moving with them, injecting more cash to meet the needs of housing, food and clothing. This is anticipated to be $600 million in total. Hume Coal has projected to spend 1.4 billion with local suppliers during the life of the mine. This will place positive pressure on business growth and will require more staff, therefore employment would be increased as a result.

From a community perspective, Hume Coal has to date placed 22 apprentices and trainees at a cost of one million dollars. And by the end of 2019, it will be 1.25 million. The organisation actively supports not for profit charities, including the Sir David Martin Foundation, the Triple Care Farm, Challenge South Highlands, the College of Knowledge Committee for Kids, BCD Community Care, BDCU Children's Foundation. Other businesses and organisations that have receive funding through the Hume Coal Community Investment Program include Bowral Blacks Rugby Club, Junior Dragons Rugby Club, KU Donkin Preschool, Mittagong Public School, Southern Highland Youth Arts Council, Roberts Junior's Buddies, Robertson Rural Fire Brigade, Berrima Rural Fire Service, Colo Vale Public School, East Bowral Community Group, Southern Highlands Sailing Club and Bowral Mittagong Rotary Club.

Over the 20 year lifespan, expected income for the region is 107 million and indirectly 45 million, as a result of these projects. The income would have an obvious flow-on effect for everyone in the Southern Highlands. From personal experiences, the management team of Hume Coal has always taken the time to listen, empathise and answer any questions a concerned individual might have. In summary, Hume Coal would provide economic growth for the region and a care factor, thanks to the management team. Okay. Thank you.

PROF FELL: Thank you.

MS L. CHAMAS: My name is Lynette Chamas. I live on Moss Vale Road in Bowral. I've been here about five and a half years. I was initially unaware of the issue when we bought down here. I haven't been as involved as some of these people and, in fact, their submissions have been so excellent and technical that I've been feeling terribly intimidated and nearly chickened out and went home. I already

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put in a written submission outlining my concerns about the damage to the environment here as well as everywhere else, the way it would impact on the tourist ..... and dining not coal mining lifestyle of Bowral, jobs, all those things, but there was one thing I did want to mention.

They said it doesn't affect you personally, and, yes, the issue about coal mining that affects me personally is the air quality that will result from having a large pile of coal – I believe it will be something like eight storeys by nearly a kilometre long – dumped 10 kilometres from my front door right between me and the westerly winds that could be pretty vile and can be at gale force. When I came down here, the real estate agent said that Bowral was the fifth most common – most popular retirement destination for retirees in New South Wales, and you just have to look at the audience to know that that's quite true. There's – I live 800 metres from the start of the town, and between me, my front door, and the start of the town there are two major retirement villages.

One of them has, I think, up to 50 units. There's another one just being finished, and there's also – two doors up from me there's a respite home for disabled people. So retirees are coming down in big numbers, and more and more people are coming down. Like me, they're coming down because they believe that the Southern Highlands has clean fresh air and a relaxed lifestyle. That's why my husband and I bought here. It particularly concerns me because unfortunately just before we moved down here and the reason we moved down here: I was diagnosed with something called pulmonary fibrosis.

It's progressive and incurable. It's rather like getting someone in to plaster a crack in your living room and then he goes mad and plasters the whole house and you can't stop him. And the reason we came here was I have to have clean fresh air. I can't even visit Sydney any more, because of the pollution. I came down here for the clean fresh air, the clean water, the good local food. All of these things, I'm hoping, will help me live longer and have a reasonable quality of life. And I have met so many people through this illness who have emphysema – they're struggling with emphysema, there's a COPD, they're struggling with asthma, they're struggling with so many issues to do – breathing issues, in the 2016 census, it showed that 13.3 per cent of Bowral residents aged 55 to 64 – the national average is 11.8. 35.5 per cent are over 64, compared to the national average of 15.8.

This is a lot of people with – a lot of these people have cardiac and respiratory problems. A lot of these people have come down for the same reason that my husband and I did, for the clean air, the clean water, the lifestyle. We will all be adversely affected by the poor air quality that is inevitable when you have a coal mine. Now, POSCO, in a brochure that they put in our letterbox, said that there will be no direct impact on residents from the mining, but that's a bit disingenuous. There will be no direct from the mining. The mining is underground. But the impact from a pile of coal eight storeys high, by nearly a kilometre long, when the westerly winds hit it, is going to be enormous. The air quality here is going to plummet.

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And I believe that there will be – it's inevitable that there will be increased admissions to hospital, putting more pressure on our health service. There will be an increase in respiratory illnesses. And I fear there will be deaths that happen before they should have, because the air quality that was helping people stay alive was taken from them. The recent dust storm that stretched from southern Queensland and a thousand ks out into the Tasman, it showed – it was a brilliant example of what winds can do to dust, whether it's coal dust or dust from the land. We had a warning about that. The first I knew about it was when I went into a huge wheezing, gasping attack. And we saw on TV Parliament House covered in the dust. And it was too late. We ran around and closed everything, but it took five days to clean it up.

Now, normally that's a one off. You can – they tell you close your doors and windows, don't go out if you have respiratory problems and that's a one off, fine. But what do you when there's the dust coming from this great mountain of coal 24/7, 365 days a year for 20 years, how do you protect yourself from that? And it's not just a matter of, well, don't go outside. Can I never go outside, because the air is never going to be clean again. What do you do about the coal dust that falls on the grass, on your clothes, on cars. I've seen with this thing in Canberra people driving around in cars covered from it. I washed my sheets, they just drifted over the grass, they came away dirty, because the dust was on the grass. It's on the trees. It's on the cars. You breathe it in when you walk down the street.

We can deal with a one-off dust storm, but we cannot deal with the endless coal dust and the very fine particles that lodge in your lungs, that are going to come from this great black mountain from hell, frankly. And I will just finish by saying that I speak not only for myself, but for my friend and all the other people who have not been involved with this battle, but who I've talked to and who are really frightened and who really don't want this thing to happen. Ordinary people who don't want this to happen. They came down here for the clean air and the quiet living. They believed it would help them live longer and healthier lives. And surely it is unacceptable that the health of the people of Bowral should be put at risk so that the South Korean coal company thousands of miles away should make a bigger profit. Thank you for listening to me.

PROF FELL: Okay. We're moving into a break now of 10 minutes. And that puts us starting back at – shall we make it half past, rather than 27 minutes past. See you then.

RECORDING SUSPENDED **[3.15 pm]**

RECORDING RESUMED **[3.33 pm]**

PROF FELL: I was wondering if you could resume your seats, please.

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MR FREE: And if Robert Monteath could come forward; he's the next speaker.

MR R. MONTEATH: Thank you, Commissioners, for the opportunity to speak to you. I will be looking at this project from the perspective of the State, national and international issues. I own a land surveying and town-planning business with offices in Newcastle, Sydney, Muswellbrook and Gunnedah, and I come from the Hunter Valley, which – where – it has been mentioned earlier about the Hunter, but where coal has been dominant for a long, long time. But is the matter – is coal finished, or does coal have some unfinished business?

Hume has some of the highest-grade coal in the world. 55 per cent of it is used for steel. Do we need steel? Answer is we can't live without it. If we like drinking coffee, drinking beer, wine, eating with a knife, fork, spoon, driving your car, catching a train or a boat, we need steel. Espresso coffee machine: fully stainless steel. Beer keg: stainless steel. Wine vats: stainless steel. Kitchen sink: stainless steel. And the ships and the containers that bring imports to our country and we export our produce from: steel containers in steel ships. We must have steel, and Hume's coal is high-quality coal which will produce high-quality steel.

45 per cent of Hume's coal is to be used for energy generation. So is Australia and the world transitioning away from coal for energy generation? Some sections of the media would like us to believe that's the case, where there's renewable energy can – headlines can power Australia's energy system without coal, renewable power can replace coal and, you know, Australia could become the renewable capital of the world. Unfortunately, these articles are a bit misleading. If we look at what we're – Australian energy capacity is, at the moment Australia has 16 megawatts of wind and solar capacity; in coal and gas we have 32,000 megawatts of capacity.

That's a one to two ratio. But when we look at the actual output of the energy – and here's the – last year's Australia government's energy update report shows that wind and solar made up 8 per cent of our electricity generation – and there's a line for the last 40 years of renewables. Most of that's Snowy Hydro. In the last 20 years we've been starting to build wind and solar. So over 90 per cent of our electricity still comes from coal and gas. That's because the wind doesn't always blow and the sun doesn't always shine.

Our very existence and standard of living totally depends on electricity. Every hour of every day we consume between 20 and 30,000 megawatts of electricity. We must have reliable power sources, and I encourage everyone here to google "live Australia electricity generation statistics", and this is what you will find. You will find that, broken down into each state at any given time – it's a live website – the generation source of electricity. Black is black coal, brown is brown coal, red is gas, green is wind, yellow is solar and blue is hydro.

So 11 o'clock – well, 11.30 one morning, we're consuming 30,000 megawatts; goal and gas are producing 88 per cent of that, wind and solar 11 per cent, and that's a good day for wind and solar – and hydro one. 4 o'clock in the morning, while we're

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all – most of us are sleeping tucked up in bed, we're still needing 20,000 megawatts of power – of electricity to exist. Coal and gas are at 91 per cent, wind and solar 3 per cent. Next to nothing. We cannot rely on wind and solar for generation.

So what would happen if New South Wales if we would remove coal as a generation source? To have a look into that future, we just need to look at the current situation in South Australia, where all coal-fired power stations were shut down as they were wanting to rely on renewables. And here's a headline from a month ago:

> *Power generators switched on for the first time in South Australia as South Australia and Victoria suffer a heatwave.*

Those so-called power generators are diesel generators, and if we look at South Australia on – at 9 o'clock on 24 July, they were consuming 3000 megawatts of power; 83 per cent of it was coming of gas; 14 per cent was coming from diesel – those diesel generators – and those diesel generators were chewing through 80,000 litres of diesel an hour. How is that good for the environment?

Solar – 3 per cent was from wind; solar zero, and the batteries were zero because Elon Musk's 100 megawatts of batteries a day install would have lasted two minutes in that consumption. And look at the price: 24 January, New South Wales – price of electricity was $104 a megawatt in New South Wales, $100 in Queensland, and over 3000 in South Australia. Diesel is the most expensive and dirtiest form of electricity generation, and they say if we go to renewables, we will have cheaper electricity.

Here's a photo of a bank of diesel generators inside a closed power station, and of course they're using the transmission lines for the power station to transmit the electricity, and this could well be Liddell Power Station at Hunter Valley in three years time when it closes. They will have to replace them with diesel generators. The South Australian government has had to take steps to advice people how to install diesel generators into their homes and businesses, because they do not have reliable sources – 24/7 power provided for them, and they are advising us of the risk of carbon monoxide poisoning – I will just read here:

> *Do not use portable generators inside, including your house, garage, shed and other closed spaces due to the high risk of carbon monoxide poisoning.*

This is what happens when you don't have a reliable source of generation. And business is booming. Here's – another two weeks ago another brand-new type of diesel generator was on sale in SA. So with a moratorium on coal seam gas in New South Wales and with only 8 per cent of our electricity coming from renewables, New South Wales has got a choice: do we burn coal or we burn diesel. What would be the best choice to help Australia reduce its 1.3 per cent contribution of global greenhouse gases?

Unfortunately, at present, there's no such thing as reliable renewable energy. There's no such thing as totally clean reliable energy. But it is a global issue, and

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Australia is a member of the International Energy Agency, which is the foremost world-leading authority on energy generation and consumption. Sorry. In their report late last year, they reported on it – all energy reporting, including transport, as well as electricity generation. It shows that in 2000, 79 per cent of the world's energy came from fossil fuels and coal was 20 per cent of that. Wind was one per cent. Last year three per cent of the world's energy came from wind and solar; fossil fuel 79 per cent. And in 2040 they predict wind and solar will get to seven per cent with coal at 22 per cent, and you can see the graph of how the world is going – consumption of energy in the world is going to continue.

And what's the rest of the world doing about ensuring that they have reliable power? At the moment there's 1600 coal-fired power stations being built in 62 countries, there's 500 being – at least being built in Asia, and they want Australia's coal, such as from Hume. Why? And the reason is that this is the best – cleanest coal in the world; it's five times cleaner than any other coal in the world and that's – it's the CSIRO saying that, and it's the highest energy levels or ratios. So if we're wanting to be – helping to the world environment, we should be burning Australian coal, not other country's coals.

And then what does – what do coal-fired power station look like? There's Yokohama Bay, Isogo Power Plant. It's nine years old. It burns 20 per cent less coal than the Australian ageing coal power stations do, and it's sitting in Yokohama Bay, three and a half kilometres from the CBD. It's nearly a pollution-free coal plant. Moorburg Coal Plant in Hamburg; it's two years old, it's 75 per cent less coal – carbon dioxide emissions than Australia coals, and it's six and a half kilometres from Hamburg's CBD. This is – these are modern, brand-new power stations, not like our aging ones.

So coal is still to be a major source of energy in the world. The world needs Hume's Coal, otherwise they will be burning inferior coal. So mining Hume coal, we will be able to continue to drink coffee, beer and wine and keep the lights on. Australia needs to replace its aging coal-fired power stations with other ones. Thank you. Any questions?

PROF FELL: Panel? I think not. Thank you very much. Sorry. Thank you.

MR FREE: Thank you. Timothy Frost is the next speaker.

MR T. FROST: Thank you for this opportunity to address the IPC. My name is Tim Frost. I retired 10 years ago after 30 years in the army and 20 years in business. I chose to buy a property in the Sutton Forest, as it is one of the most pleasant, peaceful and beautiful areas of the Southern Highlands. I have acreage on the western side of Oldbury Road, and I have spent 10 years now improving my property. In good rainfall years, I can grow fodder, crops such as lucerne, meadow hay and sorghum. I also run beef cattle. I am concerned about native flora and fauna, and I have invested heavily in planting new trees, nature corridors and shelter belts. The incidence of native birds and animals on my property has doubled in the

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past 10 years, and I wish to not only maintain but also keep improving the native habitat.

This year, a pair of breeding eagles has returned to Mount Gingenbullen, and they are an absolute delight. Eagles are at the top of the avian food chain, and to survive in the wild, they need the full panoply of life to sustain that food chain. That food chain needs trees, and trees need water. It is not permitted to use bore water to water trees, and trees have to survive without irrigation. The only water trees have is rainwater, surface water runoff and water held in the soil. This water is sustained by underlying aquifers and water tables. If you drop the water table too low, then the tree roots cannot obtain the water necessary for life, and they die.

I'm reliant for water on rainfall, surface water, such as the Medway Rivulet, which bounders my property, and on underground water, which I access from my licensed bore. My bore extends downwards 160 metres into the aquifer below Sutton Forest, and the water in this aquifer is retained in part by the underlying coal levels which the Korean steel company POSCO seeks to exploit. My bore water is presently drinkable. Now, various experts have debated the effect on the water table of mining – coal, that is – and that argument continues. What is certain is that all the experts, including those employed by Hume Coal, agree that the extraction of coal will damage, and will definitely lower, the water table. That seems moot.

So Hume Coal state in their own projections that the water table and bores will not recover for over 70 years. Realising that they will inevitably damage bore levels, Hume Coal have said they will make good any bore water loss by trucking in water as needed or by deepening affected bores. Make good is a very subjective and doubtful proposition, but, in any event, the make good proposition does not apply and cannot be applied to a lowering of the water table across thousands of acres of farmland for decades.

This risk should not be accepted, as the risk of wholesale tree dieback is simply too great. I am frankly horrified that the proposed mine has also decided it will not – I repeat not – treat water by establishing a water treatment plant, but instead it proposes to first extract clean water, use this water to process and wash coal and then pump the resultant dirty water and associated sludge back down the mine and into the water-bearing strata.

How this can even be considered, let alone allowed, in the Sydney water catchment is difficult to comprehend. Local landholders know that the Medway mine near Berrima has damaged the water table around that mine. A number of bores have dried up altogether as a result of that mine's operations. The Medway mine is still not only draining water from the surrounding area, but it is also, even after it has been closed for years, still polluting the water catchment through uncontrolled drainage from that mine. Remediation is proving very difficult and extremely expensive. I have seen no evidence that the proposed POSCO Hume Coal mine at Sutton Forest will have a lesser effect than the Medway mine, and yet the proposed

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Hume Coal mine is many times larger and will proportionately have a much greater effect.

As an affected landholder, I do hear various assurances from Hume Coal that all will be well, that damage will be made good, that adaptive management will resolve most issues, and there really is plenty of water to go around. I cannot, in all good conscience, accept self-interested assurances from commercial operators whose first loyalty is to their employer in Korea and not to the local community or the flora and fauna. I have written to you separately in a paper entitled Insufficient Return to the Public Purse. I will not revisit that paper. I do wish, however, to address the proposition that this proposed mine will be good for employment and good for public revenue. This mine has already damaged property values across the region, and a simple review of the Valuer General's valuations show an unusual downwards trend.

The council's rateable date base accordingly also been degraded. That is a cost to the community with absolutely no benefit. There has been no study of the loss of jobs in the community from the incompatibility of tourism with an operating coalmine. I hold the view that the proposed mine will destroy more jobs in tourism and agribusiness in the Southern Highlands than it will ever create. I know a number of landholders who are neighbours of mine who have ceased improving and developing their properties and hence employment. This mine has created years of uncertainty and concern in the area, and this proposed mine has been held over people's head like a sword of Damocles for over eight years now.

The proposed royalty offered by the mine when it is in full production will be 6 million or so dollars a year. Considering the damage the looming prospect of this mine has already done to the area and the much greater damage it will do if approved, this amount is derisory. It is my view that the employment opportunity is one sided, as there has been no study of job losses caused by the mine.

In my view, the so-called benefits of the mine are overblown and exaggerated. Quite simply, this coalmine represents a game that simply is not worth the candle. The mine is too small. It is in the wrong place, and it is at the wrong time. In closing, I wish to return to the importance of water. Any lowering of the water table will inevitably have a major and destructive effect on the water available to trees and for the pasturelands which sustain this community.

Water is an increasingly scarce resource, and how a commercial coalmining operation can even be considered within a water catchment area is quite beyond my comprehension. There are other much larger and far more suitable mining areas available outside of water catchment areas. This proposed mine has no public licence. The communities around the mine do not want – they do not want this mine. They abhor this mine.

May I urge you, the committee, the IPC, to endorse the recommendation of the DPE that the Hume project is contrary to the public interest and should not be approved, and one further service, ladies and gentlemen, you can provide this community is not

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only recommend that the mine be not approved but to also recommend to the Minister that the exploration lease be extinguished. The local community needs certainty. We do not want to keep fighting this mine forever. We've been doing it for almost 10 years now. Hume have had more than a fair hearing, and enough is enough. Thank you for your time.

MR GATES: Timothy, just ..... a little bit more on the groundwater, you have a 160-metre deep bore. Is that all in the Hawkesbury sandstone, or did it penetrate into the coal measures?

MR FROST: No. The bore – my bore records show no coal under me. I'm on the mountain – volcano. So I punch through 160 metres of sandstone, Hawkesbury sandstone, into the aquifer, but the coal that was around Mount Gingenbullen got burnt out 300 million years ago.

MR GATES: And what would be the size of your entitlement, and how much of that do you use?

MR FROST: I have a small bore. Is that your question?

MR GATES: Yes .....

MR FROST: Yeah. Okay. No. I don't have a unrestricted licence. I have a forever licence, but it is solely for stock - - -

MR GATES: Yes.

MR FROST: - - - and home gardening. I'm not allowed to irrigate.

MR GATES: Right.

MR FROST: And for my trees, for example, they've got to take their chance.

MR GATES: Yes.

MR FROST: So I've planted 5000 trees. Let's hope they make it.

MR GATES: You seem to a good appreciation of the difference between the water table decline and pressure level declines - - -

MR FROST: Yes.

MR GATES: - - - which isn't commonly understood but you seem to have a good understanding of that difference ..... I accept what you say.

PROF FELL: Thank you very much.

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MR FREE: Thank you, Mr Frost. Holly Campbell is our next speaker.

MS H. CAMPBELL: Good afternoon. My name is Holly Campbell. I served the community on the last council 2012-2016 during which time I chaired economic development and tourism. I was also vice president of the Southern Highlands Chamber of Commerce and Industry. I address the Commission, their representatives and ladies and gentlemen. Today I'm going to speak not about the science of things. I leave that to those best qualified. Instead, as someone whose roots in this shire are generational, and who, as a councillor, became aware of the acute issues across the community, I want to speak today about human rights. At the end, I will add a few points for additional consideration.

In short, the Department of Planning has rejected the application as not in the public interest. In gratitude to the Department, even in the restrained language of bureaucracy, the rejection of Hume Coal is damning and unequivocal. In reference to an earlier presentation, this hearing is not about a coal fire powered station but a coal mine and its relevant impacts.

Human rights. Australia is one of only 15 nations that does not recognise the human right to a healthy environment at the federal level. More than 130 nations do, indeed, recognise such rights. Last year, the Australian Panel of Experts on Environmental Law recommended that environmental democracy in Australia must have as a foundation respect for fundamental human rights, in particular, an enforceable right to a clean and healthy environment. The Stockholm Declaration states:

> *Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations.*

The following comes from research published by Dr Boyd, Assistant Professor, University of Victoria, Adjunct Professor, Simon Fraser University, entitled The Environmental Rights Revolution : A Global Study of Constitutions, Human Rights and the Environment:

> *…50 years ago, the concept of a human right to a healthy environment was viewed as a novel, even radical, idea. Today it is widely recognised in international law and endorsed by an overwhelming proportion of countries. Constitutional law experts observe that the recognition of environmental rights has grown more rapidly over the past 50 years than any other human right. Supporters argue that the potential benefits of constitutional environmental rights include stronger environmental laws and policies, improved implementation and enforcement, reduction in environmental injustices, better environmental performance, greater citizen participation in environmental decision-making, increased accountability, and a level playing field with social and economic rights …proving a clear cause and effect relationship is always challenging in the social sciences. However, new research demonstrates that*

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the incorporation of the right to a healthy environment in a country's constitution leads directly to two important legal outcomes – stronger environmental laws and court decisions defending the right from violation.

When Anglo American were offloading their far more viable Queensland holdings, they shrewdly bundled in what mining parlance is referred to as a dog – unfair to dogs, in my view – and what we now call the Hume Coal Project. POSCO, who wanted the Queensland projects, had no option but to pick up Hume and the dog is now in their lap. It is not an easy problem to solve from a mining perspective. They will extract around only 30 per cent of the resource and of which 15 per cent will be for offshore steel production. Can it be solved? Yes, it can but not from POSCO's perspective. The Department's findings are encapsulated by the following.

The Department received a total of 12,666 submissions on the project, including more than 5000 submissions from the local area of which 97 per cent were objections. Wingecarribee Shire objected to the project, while key government agencies include the Department of Industry, Lands and Water, the Environment Protection Authority and Water New South Wales. The resources regulator also said the proposed mining method was untested and that the mine could be unsafe for workers. The Department considers there is currently considerable scientific uncertainty about the level of environmental damage to both groundwater and surface water resources. The predicated drawdown impacts on the groundwater aquifer would be the most significant for any mining project that has ever been assessed in New South Wales.

Hume Coal suggests trucking water in. If it wasn't so serious, we would laugh. How many trucks per day does POSCO think it's going to need to supply meat producers, bloodstock breeders, wineries, wildlife sanctuaries, equine and tourism businesses so they remain viable, and at what cost and will they get there in time? Calculate the volume of water and number of trucks required to keep hundreds and hundreds of acres and how many animals now disenfranchised of their prime amenity, water, alive, green and productive. What farmer has the time or means to make claims for loss of stock crops or income against a giant like POSCO?

Without water, these businesses and farms are no longer viable. These same businesses provide local employment and contribute to the local economy. Logistics and road safety come to mind, the impact of water trucks racing hither and thither on our roads – via what routes – including peak traffic times when school is going in or coming out or there's a special weekend and the tourists descend. And where will the water come from? Our Wingecarribee or Fitzroy Falls reservoirs which already have dibs on them, especially in times of drought, such as the last 12 months where the Southern Highlands was actually coloured red and listed in BOMs most critically affected areas in New South Wales.

In summary, I raise the following additional considerations: wind drift and particulate matter. Commonly called dust, scientists and regulators refer to the term "particulate matter, PM", to describe the range of particles that exist in the air we

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breathe. Exposure to PM can be associated with health and amenity impacts. Particles are generated when wind blows over bare ground and different types of stockpiles, such as the vast stockpile Hume Coal will generate. These larger particles can have amenity impacts, as well as health impacts. Fine particles from vehicle exhausts and mobile equipment are also produced at mine sites. People who may be more susceptible to the health effects of fine and coarse particles are infants, children, adolescents and the elderly, people, as we've heard earlier, with respiratory conditions, such as asthma, bronchitis, emphysema, heart disease and diabetes.

Blasting and subsidence. We all know the considerable subsidence caused in the Wollondilly Shire by coal mining. When on council, I pushed Hume Coal representatives on the matter of underground blasting. Reluctantly, finally, they admitted that, yes, there would be some underground blasting. So, with a fragile and complex geological structure, such as the one within the Hume Coal lease, we can reasonably anticipate risk of subsidence and risk of water loss and/or water pollution. Risk is in everything we do. Risk mitigation may be present but it is no guarantee.

Crime. There is recorded corruption evidence implicating a number of senior members of the influential Construction, Forestry, Mining and Energy Union, CFMEU, in New South Wales and Victoria. There are established links between the CFMEU and Outlaw motorcycle gangs. The Australian Criminal Intelligence Commission states these gangs are one of the most high-profile manifestations of organised crime, with an active presence in all Australian states and territories. They see themselves as the one percenters, who operate outside the law. There is documented evidence of these gangs and the drug trade. Noise pollution: let's consider the number of coal train predicated by Hume Coal, their length and volumes trundling noisily and continuously past our paddocks, stables or houses – sorry – our back gardens, our school yards and our peaceful green valleys, even traversing private property, all day, every day.

Emotional and psychological cost: if you threaten a person's livelihood, their way of life, their established community and their lifestyle, you can measure the emotional and psychological impact via medical costs and other sadder statistics. We have seen what severe drought can do to farming families. While they do not equate the Southern Highlands with Australia's longest and hardest-hit drought affected areas, one cannot distinguish between the farmer here, who has given his life to his farm and family, to one out west. Loss or the threat of impending loss can be devastating wherever you live, whoever you are. The department has reviewed both sides of the argument rigorously. They have looked at the science and listened to the experts. Importantly, they have understood the knock-on effect of the tangibles upon the intangibles, and recognised that if Hume Coal was to go ahead, our Southern Highlands would be changed forever, not for the best, not in the public interest.

PROF FELL: I wonder if you could wrap it up now. Thanks.

MS CAMPBELL: Thank you.

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PROF FELL: Thank you. Thank you very much.

MR FREE: Thank you. Thank you, Ms Campbell. The next speaker is Anna Shead.

MS A. SHEAD: Good afternoon, everyone. My name is Anna Shead and I live at Sutton Forest, where we have 100 acres and my husband Ron and I – sorry. Okay. Thank you very much. I'm speaking against the project. My husband Ron and I own a 100 acre property off Kardinia Lane in Sutton Forest, which we purchased in 1989. We run Black Angus cattle for the meat market and have done this successfully for 30 years, consistently presenting the highest-quality animals for the sale at the Moss Vale saleyards. We attended a meeting at Moss Vale, where Hume Coal presented maps and information about the proposed coal mine. We were devastated to discover that our home and farm were to be directly above the starting point of the underground workings and our bore would be the first to be affected by the underground workings.

Of interest, Hume Coal has never approached us at all about the fact that their main underground roads will be directly under our main dwelling. This could damage the house by vibrations and cause cracking. In 2015 we received a letter from Hume Coal stating that should we lose our bore water due to workings of the mine, Hume Coal will make good our water supply. How this was to be done is rather a mystery, as it was never explained. And we have always been very concerned that this is just an empty promise. We rely on our bore water for the requirements of our cattle, especially during the hot summer months, when the dams and Wells Creek traditionally dry up. Without our bore, we cannot water stocks through the hot months or even the cooler months during the periods of drought.

Surely, the present drought has brought home the absolute necessity for farmers to have access to an uninterrupted water supply. The possibility that the coal mine would be approved is a heavy black cloud over our future and has caused a great deal of ongoing stress in our lives. Instead of leaving our children a beautiful and productive property, without a bore water supply it would be a desolate area of dead trees and gardens and would be unable to carry stock of any kind. We were therefore greatly relieved when the DPA found the project to be against the public interest, and we certainly urge the IPC to endorse that view. Our beautiful Southern Highlands should not be spoilt by the environmental impacts of a coal mine, like so many other areas already are. Thank you for an opportunity to present our case. Thank you.

MR GATES: Just before you go - - -

MR .....: Excuse me.

MR GATES: Just a quick question. Can you tell us how deep your bore is, if you know?

MS SHEAD: No, I don't.

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MR GATES: All right. And has Hume Coal said to you how they might mitigate the damage to your bore? Would they drill you a new bore or a deeper bore or pay you money because of increased - - -

MS SHEAD: No. Just they would make good.

MR GATES: But you don't know any details.

MS SHEAD: No.

MR GATES: Thank you.

PROF FELL: Thank you very much.

MR FREE: Thank you, Ms Shead. Ross Parker is our next speaker.

MR R. PARKER: Thank you for the opportunity of addressing this hearing. My name is Ross Parker. I'm a retiree who has lived in Sutton Forest for the past 12 years in a home on the boundary of the Hume Coal lease. We are surrounded by established and productive rural properties and some significant historic dwellings. It's a significant rural area which must be protected. I would like to comment on two aspects of the Hume application to mine in the Southern Highlands.

Firstly, I totally support the scientific approach used to oppose the application and to rebut significant issues in the Hume's EIS report. Coal Free Southern Highlands has conducted a sensible program of scientific investigation which had been professionally developed and peer reviewed. This approach has been critical in objectively assessing the impact of the application. The Battle for Berrima Group took the lead in providing a detailed, and, I must say, an award-winning assessment of the heritage qualities of the district, and both organisations have worked to ensure that the community is fully aware of the implications of the project.

The response from the community has been measured and intelligent, has been sustained over eight years, which has been mentioned a number of times. There is a strong awareness the impact of the mine will have on our magnificent aquifer, the lowering of the water table, possible contamination of groundwater, dust pollution and visual considerations and the impact on the historic town of Berrima. I gratefully acknowledge all those associated with the response to the project. It's an impressive contribution by many people over many years involving huge amounts of time, effort and financial support, and, I must say, often at gut-wrenching personal cost.

Secondly, I want to focus on the effects of the – on the community over the past eight years, and the continuing concerns that they hold. This will be in dot points, but I will elaborate on a number. The many difficulties associated with the overall process. Firstly, the length of the process. Eight years seems a long time to consider a project. Disputes over land access for exploration. Mention has been made of the

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blockade at Carters Lane. The only outcome of that that's really good is that we made a lot of friends, as Kim indicated.

Years of uncertainty have been talked about and the reduction in capital investment. A community divided by the strategies of Hume, and that goes to sponsorship and conflict within organisations, and I cite, as an example, Exeter Football Club as a case in point. These were designed to make Hume welcome in our community. Uncertainly for rural holding re future bore levels, which have been talked about at some length, and the suggestion of trucking water to replace drops in bores, possibly an insulting and impractical suggestion.

The costs of legal proceedings can't be underestimated. People are out of pocket a considerable amount of money, a necessity for individuals to contribute amounts well beyond their ability in their retirement. Mental health implications and stress on relationships. Property values have been discussed, and damage to local tourism has all been mentioned. At a personal level, like many in our community, I've found the last eight years demanding. It has been very difficult to witness the effect on those residents subject to the demands for property access, exploration and threatened livelihoods.

Finally, I would like to take the opportunity, and this is personal, to give voice to the late Michael Luscombe. Tragically, Mike died almost a year ago, way too young, well before the many plants and herbs he had for his much-loved Sutton Forest property could be realised. Mike was a retired CEO from the retail food industry. His vision and passion was for the highlands to remain a strong and economic agricultural centre. His commitments to this vision were backed up by significant improvements to his property. He was an enthusiastic participant and financial contributor to Coal Free Southern Highlands and was also a founding member of Sustainable Southern Highlands. Mike totally understood that without a viable aquifer, the agricultural heritage and potential of much of the Southern Highlands would be destroyed. Michael's experience and sentiments are mirrored by so many in the Highlands. Thank you.

MR FREE: Thank you. Alexandra Springett is the next speaker.

MS A. SPRINGETT: Good afternoon, everyone. My name is Alexandra Springett, and I do thank you very much for coming to the Southern Highlands. That's greatly appreciated. My Battle – can everyone hear me? Is that better? My Battle for Berrima associates and colleagues have told me that if we offered you a refreshment, it could be seen as trying to unduly solicit your support, but I do hope you'll have an opportunity to enjoy our wonderful Southern Highlands hospitality at some stage, and our wonderful produce. And you'll be pleased to know that my dissertation is going to be very short.

Prior to the Battle for Berrima community meeting last October, I spent several days reading corporate documents, including the Hume Coal Project Preliminary Environmental Assessment produced in 2015. It's a well-written volume, not as

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riveting as Gone with the Wind, but, thank heavens, not quite as long. What I did note throughout were disclaiming phrases in regard to potential negative impacts of the mine. The rhetoric went, and I quote:

As much as possible, when possible, as little as possible, when possible, if possible.

What Hume Coal seem to be advising the reader is that though the aim would be for best practice measures, best outcomes could not be guaranteed, which, of course, it can't, because the mining method proposed, pine feathering, has never been trialled in Australia. It's been used in some Chinese mines, but I and others are unable to find relevant data ..... outcomes. Therefore, perhaps anything Hume Coal reports in regard to water depletion and contamination, air pollution and land subsidence should be regarded as not being evidence-based and be understood as being supposition.

Can we afford, then to engage with a method of mining that has no empirical data for safety and low-impact statistics? Not that we in the Southern Highlands want any – another coal mine of any denomination, but the supposed positives of the pine feather method forms the basis of Hume Coal's argument, and given the lack of stats, shouldn't we, therefore, consider it with cautious scrutiny? Our community is largely aware of the probable negative outcomes upon water content and quality from this proposed mine. What we should also consider is the issue of land subsidence. Now, the pine feather method is theoretically designed to minimise the risk of land subsidence after coal extraction. In fact, the coal – Hume Coal Project document previously listed:

State surface and subsurface impacts will be negligible.

What is negligible, I ask? Does that mean I have another minute?

MR FREE: If you could just - - -

MS SPRINGETT: Chocolate?

MR FREE: - - - wrap it up.

MS SPRINGETT: Come on. Bribery. Okay. Where is the evidence based data to support this claim? Hume Coal's admission to a possible 20-millimetre subsidence negligible is theory at its most hopeful. The proposed mine area is almost 50 square kilometres and transected by approximately nine kilometres of the National Hume Highway. A diagram indicating this is taken from a recent Hume Coal document and shows the proposed mine areas abutting the highway to each side and the two underground tunnel roads connecting the two sides of the mine separated by the highway. It's not unreasonable to surmise then that if subsidence were to occur along the length or under the highway due perhaps to fracture of the surface strata above the mine ..... or collapse of the retaining coal pillars or, in the worst case

scenario, an explosion occurs within the voids due to chemical reactions within the toxic fill, then substantial damage could occur to the highway that passes through and over this.

As you know, the Hume Highway is a vital piece of national infrastructure connecting the capitals of Sydney, Canberra and Melbourne as well as the smaller cities and towns along its route. It's hugely subscribed to by major haulage which ensures connectivity of produce and equipment between these majors areas, and it's the main route for many thousands of people travelling between business and home. If this highway were to be compromised by land subsidence - - -

PROF FELL: I'm sorry - - -

MS SPRINGETT: I've got - - -

PROF FELL: - - - you only asked for a short time, and we - - -

MS SPRINGETT: Two more sentences. Two more sentences.

PROF FELL: Two more minutes? My goodness.

MS SPRINGETT: All right.

MS .....: Seconds.

MR .....: Sentences – two more sentences.

MR .....: Seconds.

MR .....: Sentences.

PROF FELL: Two more seconds. Please go ahead.

MS SPRINGETT: You are good people. Thank you. Right. The devastating loss to national corporate small business and private income from subsidence is immeasurable. It could be counted in multibillions of dollars. It should be a tenant of good government that risk assessment becomes part of any approval process. Indeed, can this government allow the risk of crippling damage to the Hume Highway? Can it risk the dire consequences, the enormous loss to the public amenity and the loss to the government purse should approval be given to this mine, its methodology and consequences as yet untested. Thank you.

MR .....: Thank you.

MR .....: Questions.

MR .....: No questions.

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MR .....: Thank you very much.

MR FREE: Thank you. Can Daria Ball please come forward.

MS D. BALL: Thank you for the opportunity to address you this afternoon. Yesterday, I drove the length of the Hume Highway from Melbourne to Moss Vale and I can tell you the farmland in this country is in a terrible state and that is why the water is so important to us.

My name is Daria Ball and while I now live in Moss Vale, I have framed what I'm about to say on the basis that I farmed in this area for 30 years from the mid-eighties to 2017. My late husband and I owned various farms in Sutton Forrest totalling 889 hectares or 2195 acres in the old measurement. Across that land, we were licensed to draw 424 megalitres of water from our various bores. Our farming business was Angus cattle. We had both a very large stud herd that won many awards and a huge commercial recipient herd and were often carrying as many as 900 to 1000 head of cattle.

In normal years, our bores were mostly idle with an average of 992 millimetres or 36 inches of rain. However, from 2000 onwards through to 2006, which was the last really long-term drought we had in this area, rainfall was well below average, and I've looked back at the records we kept and I can say that in 2000, 2002, four and six, we received half the long-term average rainfall. 2003 and five were a little better but not great. Now, when that rainfall was scarce during the droughts, our bores were used to top up dams, because, let's face it, cattle drink a lot of water. And dams and bores are essential, because when you don't get rain, there's no other way to replenish them. Also, when you're carrying stud stock, as we were, you do not want to destock them, because you'll never replace those bloodlines.

During that severe drought in the early 2000s, there were substantial discussion between farmers in Sutton Forest and Canyonleigh about the fact that our bores were less productive, and that was obviously due to the fact that we were all drawing down more, probably drawing down our full allocations and with everyone doing that, there's not enough time for the aquifer to replenish quickly enough. Some farmers were forced to bring in contractors to drill their bores to a lower depth to get water at all, and the replenishment of the aquifer was below normal rate. In 2007 and eight, we had good rainfall, but in 2009 we were back to half the long-term average and it's been up and down every year since, and this is another really bad year.

About 20 years ago, I was advised by a water scientist consulting to us that, while there is a huge amount of water under Sutton Forest, he said it takes a very long time for the water to seep through the geology to replenish that aquifer. He actually told me that some of that rain fell 1000 years ago, as far away as New Guinea. Hume Coal's own environmental impact statement states that it could take between 36 to 65 years to return to normal due to their mine's operation and that the water will leech from the aquifer. They've said that themselves. And I for one simply cannot

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imagine, based on my farming experience, how many water tankers it would take each and every day for new coal to replenish just one farm, let alone all the farms they would have to do, through the long period of the mine's activity and then, of course, the hiatus when the mining finishes.

As we know now, drought years are becoming more regular in this area, an area that once seemed to be drought-proof, and that's placing many more strains on our agriculture. If the issues at Hume Coal admit to are true, this could be devastating for the farmers in our area, however, I believe that, based on all the expert opinions commissioned by our community, that the impact on the water in the aquifer will be far larger and have a greater adverse effect than Hume Coal predict, and that would be catastrophic for some of the most productive farmland in New South Wales, and it is, we're not as badly affected as the rest of the state.

Now, we don't have to look too far from here for precedents. The Medway Colliery that was referred to earlier, and it has now closed down, it dewatered just about every bore in its vicinity. As you've heard before, it's leeching still overflow polluted water into the Wingecarribee River and then eventually into Sydney's drinking water. Recently, an independent panel published an initial report that says it's totally plausible today that the Dendrobium mine, which is up there between the Avon and Cordeaux Dams, it's diverting about 3 million litres of water out of Sydney's water catchment every single day. The same independent panel believes the Metropolitan Mine is diverting half a million litres a day from the Woronora Reserve that supplies Wollongong and you'd all be aware of other examples of negative water impacts by mines: Thirlmere Lakes and the Cataract River, which has been left somewhat devastated by BHP.

Now, farmers are held to much higher standards, in my experience, than miners and, you know, so we should be. We're held there by Water New South Wales, the Sydney Catchment Authority, the local council and the EPA. I can underline this, because a lot of the land we owned was traversed by Wells Creek and it was in a very bad state when we purchased that land and, straight away, immediately upon buying it, we were told we had to take substantial reparation work. Now, that included building spillways to control flows, adding rock swales to help prevent erosion, planting thousands and thousands more trees – and I'm talking over 100,000 trees – and also creating what's called riparian zones along the creek to stop more of the erosion.

Now, the substantial costs that we underwrote over about 10 years was a million dollars. Now, farmers are by nature protectors of the ecology and so doing this work was seen by us as part of what we should be doing as custodians of the land, but always amazes me is that the same high standards never seem to apply to miners. They leave – and just consider the water vandalism that's gone on – and who picks it up afterwards; the New South Wales taxpayer and the miners have gone. You've only got to look at the Hunter Valley.

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In closing, I would like to comment on the fact that Hume Coal's own EIS reveals there is very little financial upside for the State of New South Wales, through their royalties over the life of the mine. Farming, on the other hand, has been a major contributor to the economy in this area since the mid-1800s and continues to be today through livestock farming, vineyards, olive groves and tourism. You might be interested to know, if you don't already, that the Moss Vale Livestock Exchange turns over 60,000 head of cattle a year generating sales of 30 to 35 million dollars. Now, that's a lot more than Hume Coal are going to contribute. And it's in the top 10 saleyards in our state. If we deplete the water resources available to our farmers in this area, there will be substantial flow-on effects for years to come, financial, ecological and sociological, so I therefore respectfully request that the Independent Planning Commissioners fully endorse the recommendation of the Department of Planning and Environment which views the Hume Coal Project as contrary to public interest. Thank you.

MR GATES: You've obviously got a lot of experience in the area of farming and using - - -

MS BALL: Yes.

MR GATES: - - - large volumes of groundwater.

MS BALL: Yes.

MR GATES: Hume Coal requires to have a water licence and they've been purchasing that from people that have been selling it. Do you think that the people who've been selling it will still want to use a lot of their water that they retained so that there'll be an increase in overall usage of groundwater?

MS BALL: I think tomorrow, when John Lea speaks, he has done a huge amount of work on allocations in this area. He can probably answer every single question you might have about that, but my understanding is the area's already over-allocated, so anybody who sells their licence with this sort of weather is in trouble if they're still farming. I know of some people who bought a 100 acre lot with, say, 100 meg on it and then they've got another which they've bought from Hume Coal and let Hume Coal keep the 100 meg they had, but Hume Coal are well short of what they need and I'm not sure where they're going to get it from, because the big irrigators like Rosedale, they're not going to give it up. And even if they did, that's not the total issue. Just having the allocation of water, it's what is going to happen to that aquifer. If they breach that aquifer, we're all cooked.

PROF FELL: Thank you.

MR FREE: Thank you. My voice needs to be clear.

MR C. WEST: Is that close enough? Yes? Great. Lucky last. I'm appearing as the representative of Berrima Residents Association, which is a non-profit

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incorporated association dedicated to the protection of Berrima's heritage significance and we've been in existence for over 35 years and we presently have 70 members and that's out of a village of 660 people, so that's a significant representation.

We're just in the process of finalising the nomination of Berrima and its rural surrounds for listing on the New South Wales State Heritage Register. We're already listed on the local register, the village and its surrounds, but we're about to go onto the state listing. And following that, we'll then proceed with the state listing of the Sutton Forest landscape. Both of those areas, Berrima and Sutton Forest landscapes, were the subject of a 165 page heritage study of the Berrima and Sutton Forest landscape and that was done by Colleen Morris, who's one of the top heritage experts in Australia.

The – excuse me – it has become apparent, while we were doing the research on the Berrima nomination, that it's not just of state significance, it's of national significance and it came into existence when the entire non-indigenous population of Australia was about 50,000 people, so you're talking about a small – or a country town being the whole population of then non-indigenous population of Australia, so it's one of the early foundations of Australia.

70 per cent – in 1841 they had a census, 70 per cent of the adults came out as convicts, so this is very much a convict society and Berrima's an absolute gem. It's quite unique. There are some villages in Tasmania, but they don't have the combinations that Berrima has. Berrima has, as well as the convict past, it's got major civic buildings built in 1838, the jail, the courthouse, which indicated a vision for Berrima which was going to be a state – a capital city. It was going to be a major city, but it never grew beyond a small village. In the 1841 census, there were 269 people and now we have 660, so it's still a very small functioning village. It's really unique.

It's also part of the period of convictism, which UNESCO recognises as a major world event; it was basically forced migration. And Berrima is a very good reflection of that forced migration. It's the transition between convicts and civilian life and, as I said, the census shows the number of people who have came out as convicts, but half of those people had actually, by then, moved into civil society and they were again the foundation of our modern society. So it's a very important village and it really needs to be protected.

The village has the highest number of state listed items in New South Wales. It has 16 state listed items and has major buildings, inns and houses, which are still there in their original form. With the gentrification of the village, we found that the – all those historic places have been restored beautifully, so it's actually a very good example of an historic village.

The noise, the pollution from dust and the visual impact of the mine head and the rail project will considerably detract from the very rare colonial Georgian village. And

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you're probably aware the prevailing winds from the mine head, from the huge coal stack, are in the direction of Berrima. So we will cop the dust, the fine particles and the noise – the 24 hours a day noise, those "beep, beep, beep" from the reversing vehicles. It's only two kilometres and on a wind-borne day, which is quite often, it will be like in our backyard.

So Hume Coal claims to be conscious of the rural environment and to be good land managers. They produced the video – and I've got the website for that – that shows their farm management as the ideal. It's actually quite bucolic. The reality – which I didn't bring a slide of – the reality is quite different. The land has been grossly overstocked and it has resulted in a barren wasteland. And I've got photographs attached to my speaking notes, but it really is – it's like the end of the earth. And so we don't have any confidence in their environmental assurances. I'm a community representative on the Colliery Closure Working Group, which is a Boral group, but it was established at the behest of the EPA. And a week or so ago we had a meeting of that working group at the Colliery itself and Boral, who are trying their hardest to mitigate the pollution coming out of the mine, Boral explained what they will be doing in an attempt to stop it is to put seven massive bulkheads in several of the shafts.

But they've admitted right from the start this is unlikely to be successful. It's unlikely to be successful because of the fissures that run all through that geology. And when I asked is that endemic in the region and they said yes, it is. So we have no confidence that the bulkheads that Hume Coal is proposing will actually be watertight or pollution tight. We've heard from the coal industry person how essential coal is.

Well, actually, in South Australia, now the Indian steelmaker is about to have a solar-powered steelmaking mill. And in Scandinavia, in Sweden they're about to start building a metallurgical coal-free steel mill. They will be using electrolysis, in which hydrogen is used for the reduction process, and it results in purer steel. This is all writing on the wall. Coal is definitely on the way out, despite the slides we saw with the consumption figures in the future. Things can change very quickly. Thank you very much.

MR FREE: Thank you. And just to clarify, in case a few people are working off older versions of this schedule, we're now into a few speakers – there's five more speakers, some of whom were originally scheduled to be on day 2. So our next speaker is Larry Cook.

MR L. COOK: Commissioners, I am a qualified hydrogeologist and have been asked to speak on behalf of Robert and Lynne Crookes – Richard and Lynne Crookes, sorry, who own and operate a successful cattle stud and agricultural business at 180 to 182 Belanglo Road. I have carried out hydrogeological studies and investigations on the property for the Crookes over the past four years and, indeed, in – on the central – sorry – on the Southern Highlands over the past 30 years. Three active licensed bores are located on the property, two of which are

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irrigation bores with a total approved annual water entitlement of 98 megalitres. The bores are an important element in the agricultural use of their land. Hume Coal accepts that there will be significant impact on the groundwater system, and that includes the water table beneath the property.

In fact, the groundwater model predicts some of the larger drawdown impacts of the project to occur in the vicinity of these three bores. The owners fully understand that you cannot have any development without impacts, whether it be, for example, construction, building a road, a house or an airport, constructing a dam or mining. They also understand that although the peer-reviewed groundwater modelling provides the best prediction of impacts based on the available scientific data at this time, there is still inherent uncertainty. For example, the initial groundwater modelling predicted drawdowns of 27.3 metres, 21.1 metres and 46.2 metres for the three bores. These impacts equate to a maximum decrease in the irrigation bore yields of up to 64 per cent, which would severely compromise the operation and viability of the farm and effectively compromise their access to their 98-megalitre water entitlement.

The predicted drawdown will last 36 years, with full recovery after 65 years. The alternative Pells groundwater model that was commissioned by the community predicted even greater impacts. However, the revised groundwater modelling by Hume Coal reported in June last year – that's 2018 – significantly downgraded these impacts, with revised decreases in the predicted drawdown of 27.3 metres – there's actually no change in that bore – 21.1 to 30 – 13.5 metres and 36.2 back to 16.5 metres. Although the revised model was peer-reviewed and the model deemed suitable for assessing impacts – that is, fit for purpose – uncertainty regarding the accuracy and magnitude of the impacts remain. The fact that the models can produce such wide variances in the prediction of impacts questions the groundwater modelling assumptions.

More importantly, there is uncertainty surrounding make good provisions, how and when they are triggered, how they would be implemented and the dispute resolution process. For example, the revised remediation proposals for the three bores did not include the important 30-megalitre bore. However, this bore was later reinstated following an inquiry from the Crookes' management but no mitigation measures proposed. This cast doubt on the make-good provisions and how they would be implemented. Lowering of the pump, deepening of the bores or relocating bores may not be practical, suitable or beneficial.

For example, lowering pumps in long-established bores may not be physically practical due to technical limitations, and the pump specifications may no longer be suitable. In addition, power costs would also increase. Deepening of affected bores may not result in useful additional yield, and the water quality may be different. Replacing bores elsewhere on the property would require new surface infrastructure and logistics, and may not result in success.

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Other make good options considered by Hume Coal are enlarging water storages or constructing new dams or piping water around the property, all of which are not considered viable options in replacing or supplementing the 98 megalitre groundwater entitlement. Hume Coal has indicated that the plan for make good at each individual bore would be subject to technical feasibility and consultation. The implication is that this process would be undertaken following mine approval and the commencement of extraction operations, thus limiting the ability of the owners to negotiate a solution.

In conclusion, the owners need clarity on any make good provisions prior to any mine approval in order to assess any potential loss of farm property value, farm viability, continued investment strategies and possible sale. That is, they need to be able to plan ahead. The owners also need clarity on the trigger point for make good, when they should apply, and the dispute resolution process if the impacts are greater than expected. For example, the possibility that the boors could be dewatered is not addressed by Hume Coal's make good provisions. Thank you.

MR GATES: Larry, the geological conditions that occur in the Hawkesbury Sandstone that give high yielding conditions, do they also apply to the underlying rocks in the Illawarra Coal Measures, and if not, why not?

MR COOK: No. The actual coal measures themselves – coal measures can be aquafers, but in this case there's quite poor prospects of water in the much finer sedimentary rocks that host the coal seams, and even, in fact, the underlying sequence, the Berry Siltstone, has got quite poor prospects for groundwater. It's quite fine, tightly packed, and although fractured in places, it doesn't really present viable prospects for aquafers. Thank you.

PROF FELL: Thank you very much.

MR FREE: Now, can I ask Ms Lynne Crookes, please, to come forward.

MS L. CROOKES: Hello. Can you hear me? Yes. Firstly, can I just thank you for agreeing for us to come today instead of tomorrow, as set down. I can stand on my toes if you like.

MR .....: That's all right. Make it easy for you.

MS CROOKES: That's fine. Thanks. I'm speaking on behalf of my husband and my family. We have 350 acres in Belanglo Road, Sutton Forrest, which does directly adjoin the Hume Coal Project. Now, as with most properties, we have four boundaries. We have Belanglo Road. On one side we have the Belanglo State Forrest. On another, we have the Medway Rivulet, and probably most importantly, all down one side is Evandale, the Hume Coal property, which is the site of the proposed mine. Not only that, the mine is proposed to run right under our property as we have the longest boundary to the mine site of any of the other properties.

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My concerns are regarding the amenity impacts of the project that were not previously covered in our previous submission, and particularly the significant impacts on our way of life, our farm's future viability, and the impact of the mine on the value of our property. It's a place that our children and grandchildren come to regularly and escape to spend the school holidays, and most importantly, a place where we can all spend time together as a family. Our land is sharing a long boundary with the proposed mine site, and our home will be within a few hundred metres of the significant mining infrastructure.

Because of the proximity of the mine head and where the coal pile will be stored and of the often very strong winds, there are enormous concerns about the dust that will certainly be blowing over our property and home, as it will towards Berrima. Experience from others is that Hume's dust suppression method doesn't work. Larry Cook has already presented to you about our groundwater and how it will be impacted, and this is critical to the operation of our Red Angus cattle stud, the pasture production and the operation of our three bores. It's a prize-winning stud and our awards will be jeopardised by the mining.

And regarding the mining process, we are of the understanding that the resources regulator noted the mining method is untested, and has concerns about mine worker safety, and also don't have any assurances that there won't be a subsidence of settlement that would affect our property, pastures and infrastructure. It's believed that the targeted coal resources located in a shallow seam, that's inherently difficult to extract without causing adverse environmental impacts and disturbing existing land uses. And we're also concerned about the noise and their suggestions of operating hours. And as it's on an industrial area, it will affect our rural living no matter what time of day. So, in conclusion – and I have kept this short, because we've heard it from everybody – because of the impact of this mine on our family's way of life, the value of the property and our Red Angus stud, the Hume Coal application should never be approved. The location proposed is completely unacceptable for the entire community. And thank you again.

MR FREE: Thank you. Todd Neal is our next speaker.

MR T. NEAL: Good afternoon, Commissioners. Todd Neal, I'm a lawyer at Colin Biggers & Paisley and I also represent Lynne Crookes and Richard Crookes. I've been instructed today to speak against the proposed Hume Coal Project and why it should be refused, from a legal perspective. The Crookes own one of the adjoining properties at 180 to 182 Belanglo Road, Sutton Forest. Their property will become an island sandwiched between a state forest on one side and the coal mine on the other side. They have 350 hectares – acres, rather. It's zoned E3 environmental management.

Their property orients towards the mine and they have a Red Angus stud with extensive infrastructure to support that stud. The elephant in the room, from a legal perspective, is the controversial decision by the chief judge of the Land and Environment Court a few weeks ago in Gloucester Resources v Minister for Planning

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and Groundswell Gloucester. That decision obviously arose after the initial submission that my clients put forward and nothing was said in writing about it. But it cannot be ignored when determining this application. The judgment is bookended by comments that cut through much of the noise that has arisen after that judgment, and it explains why the mine was refused. At the start of the judgment, at paragraph 8, the court states:

> *The mine will have significant adverse impacts on the visual amenity and rural and scenic character of the valley, significant adverse social impacts on the community and particular demographic groups in the area, and significant impacts on the existing approved and likely preferred uses of land in the vicinity of the mine. The construction and operation of the mine and the transportation and combustion of the coal from the mine will result in the emission of greenhouse gases, which will contribute to climate change. These are direct and indirect impacts of the mine. The costs of this open-cut coal mine, exploiting the coal resource at this location in a scenic valley close to town, exceed the benefits of the mine, which are primarily economic and social.*

In the last paragraph of the judgment, the court states:

> *In short, an open-cut coal mine in this part of the Gloucester Valley would be in the wrong place at the wrong time. Wrong place because an open-cut coal mine in the scenic and cultural landscape, proximate to many people's homes and farms, will cause significant planning, amenity, visual and social impacts. Wrong time because greenhouse gas emissions of the coal mine and its coal product will increase global total concentrations of GHGs, at a time when what is now urgently needed, in order to meet generally agreed climate targets, is a rapid and deep decrease in GHG emissions. These dire consequences should be avoided. The project should be refused.*

By reference to this decision is not to be trite, as it's acknowledged that each new application needs to be considered on its own terms. However, that being the case, this project should be refused also, since this project is a more acute example of being proposed in the wrong place and the wrong time.

There are a number of preliminary issues to draw the Commission's attention to about that decision. Firstly, the merit appeal of the Rocky Hill Coal Mine only ever reached the Land and Environment Court because there was no public hearing conducted by the then Planning and Assessment Commission. Here a public hearing is occurring, which turns off the merit appeal rights that existed in that case. With that in mind, this highlights the importance of even-handedness in decision-making, and that the decision-making by the consent authority here take into account this recent case law.

This provides a segue to my second preliminary point, and that is that that the Planning and Assessment Commission for Rocky Hill did not raise climate change as

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a reason for refusal, whereas the Land and Environment Court did. Whilst the three grounds for refusal given by the PAC for the Rocky Hill Coal Mine draw analogies to the present application before you, namely, inconsistency of the proposal with the objectives of the zoning of the land, the significant visual impacts of the mine that the project – and the project was not in the public interest, so too do the more expansive reasons of the court, which broaden the reasons for refusal to include climate change.

In respect of climate change, the court held that an environmental assessment framework existed under the statute that required the consent authority to consider the impacts of greenhouse gas emissions. That also applies here. Those aspects of the judgment need close considerations. The emissions needing to be considered include the more controversial downstream emissions, along with the direct and indirect emissions. And further, the public interest, which incorporates the principles of ecologically sustainable development, also mean that scope 3 emissions should be considered in the consideration of this mine's impacts.

With those comments out of the way, I turn now to provide some comparisons between the two applications which indicate that if Rocky Hill was warranted refusal, then so too does Hume Coal's proposal. The Hume – sorry – the Rocky Hill Coal Mine was in the vicinity of the Gloucester township, nearby rural residential estates and smaller agricultural and agritourism properties, some of which were within one to two kilometres of the boundary of the proposed mine. The project is also located in close proximity to the historic town of Berrima, and is in close proximity to rural residential properties and agriculture and other land uses. In the case of my client, the proposed mine adjoins their property, sharing a 1.8 kilometre boundary.

In terms of the public interest, I find it extraordinary the number of submissions that this project has generated. The Rocky Hill project received 2300 or so objections, whereas this project has received significantly more objections, being roughly 12,000 submissions. Turning to the project's specifics itself, the type of coal in Rocky Hill was 100 per cent coking, whereas for Hume Coal it's 55 per cent coking and 45 per cent thermal. In terms of the life of the project, for the Rocky Hill Mine, 16 years of mining operations were proposed for that one, whereas for Hume Coal, 23 years are proposed, including construction, and 19 years of mining operations.

In terms of the amounts of coal proposed to be extracted over the life of the project, 21 million tonnes were proposed for Rocky Hill, whereas 50 million tonnes are proposed by Hume Coal. In relation to the emissions that generates, the court's most recent comments were that all anthropogenic greenhouse gas emissions contribute to climate change, and it matters not that this aggregate of the project's GHG emissions may represent a small fraction of the global total of GHG emissions. The global problem of climate change needs to be addressed by multiple local actions to mitigate emissions by sources and remove GHGs by sinks. All of the above factors weigh in favour of this application being refused. However, even if this is not to be

compared with Rocky Hill, there are a litany of other individual problems with this project, which, in my client's views, outweigh the alleged benefits.

In the Rocky Hill decision, the Chief Judge also helpfully made a number of observations about assessing these types of applications. His Honour said it's not enough that the project is located where coal is located. He said, referring to other cases, that a dam can only be located on a river, but not every river needs to be dammed. His Honour said that a seaside residential development can only be built at the seaside, but not every seaside development is acceptable to be approved. Applied here, a coal mine can only occur where there is coal, but not every coalmine will be acceptable to be approved. While there may be coal deposits available, this mine will have unacceptable incomes on the place surrounding the mind, including my client's land, which share a long 1.8 kilometre boundary.

My client supports the comments made by the department in its assessment report that the department considers that the economic benefits cannot be realised without significant adverse impacts on the environment and the local community, particularly in relation to the groundwater impacts. In conclusion, my clients consider that this project provides an even better example of being at the wrong place at the wrong time. The project has no social licence, evidenced by the significant community opposition here today, involving an unprecedented 12,000 or so objections.

There will be social change for the community and, of course, environmental change. Finally, the recent judgment of the court makes it clear that the position of greenhouse gases requires analysis in terms of its impact, direct and indirect, phase 1, 2 and 3 emissions. From what we could see, the applicant's EIS does not deal adequately with the impact of those greenhouse gas emissions and its link to climate change. Even if they did, it is difficult to see how it can get around many of the other comments in the Land and Environment Court's decision, which, by parity of reasoning, indicate that this project should also be refused. Thank you.

PROF FELL: Thank you. I have one question. Rocky Hill is a surface mine - - -

MR NEAL: Yes.

PROF FELL: - - - whereas the Hume mine is underground.

MR NEAL: Yes.

PROF FELL: Wonder if you would help us in terms of visual impact aspects and what was said in the judgment. Do you think it translates across or doesn't or - - -

MR NEAL: I think the visual impacts – whilst it will be an underground mine, and the Rocky Hill coalmine was an open-cut coalmine - - -

PROF FELL: Yes.

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MR NEAL: - - - there still will be visual impacts, but there will be other impacts, social impacts, and when you read the judgment, the social impacts of the mine as well were closely analysed and held by the Chief Judge of the Land and Environment Court to outweigh the mine being approved.

PROF FELL: Okay. Thank you. Any other questions?

MR .....: No. Thank you.

MS TUOR: So, specifically in terms of visual impacts, where do you consider that they would be from?

MR NEAL: The mine – sorry. My client's property orients towards the coalmine. So I haven't seen any photomontages of how it impacts the vista from my clients' home. So it's difficult to say precisely how it's going to impact their vista.

PROF FELL: Thank you very much.

MR NEAL: Thank you.

MR FREE: And could I ask Bob Kemmis please to come forward.

MR B. KEMMIS: Good afternoon. My name's Bob Kemmis, and I'm a local resident of Berrima. Thank you for allowing me to speak this afternoon. Whilst coal mining has played a part in the history and the heritage of the Southern Highlands, the region is now more widely known for its pristine rural lands, small-scale agriculture, scenic landscapes and tourism. We're now more educated and acutely aware of the long-term effects of greenhouse gas emissions and irreversible damage to our ecosystem, the uniqueness of our native flora and fauna, and how precious a resource is our water.

The Hume Coal proposal has a projected lifespan of 23 years, 28 months of constructions, 19 years of production and two years of rehabilitation. The area directly affected will be 5039 hectares of freehold land. Key infrastructure includes onsite accommodation and vehicle parking for up to 400 non-local construction employees, the construction of substantial overhead power lines, the construction of 7.6 kilometre rail access and loading facilities, maintenance sidings and level crossings, ground conveyor belt loading facilities as well as a mining office and plant maintenance facility.

During the construction phase, it is projected that daily local traffic movement will see an increase of up to 222 light and 132 heavy vehicles per day. Operational daily traffic movements are projected as an increase of up to 358 light and 20 heavy vehicles per day. Rail traffic is likely to involve up to eight coal train movements per day between the mine and the loading facility at Port Kembla. Hours of operation during construction will be 7 am to 6 pm Monday to Friday and 8 am to 1 pm

Saturday. However, after construction, the mine will be in operation 24 hour per day, seven days a week.

Even though this project will provide an additional 417 jobs during the construction phase, this will primarily be from a non-local workforce with existing mine construction skills. Once operational, there will be up 300 jobs on offer, but at what price to local small businesses' employees, who will lose trained staff to the short-term lure of the higher wages that mines historically offer to attract employees.

A wide range of other potential negative impacts exist around the operation of a coal mine located at Berrima. These include possible economic downturn due to the impact of tourism, increase in greenhouse gas emissions, increase of vehicular and rail traffic and the negative impact to farming and agriculture, directly impacted by water drawdown caused by mining. Water and air noise and visual pollution will all increase.

There is significant concern over the impact of this project to the Southern Highlands community, but the impact of water and air pollution are also more significant – are more widespread. The predicted water drawdown from this mine would be the most significant of any mining project ever assessed in New South Wales. The impact will be significant on a highly-productive groundwater aquifer, including drawdown on 118 privately-owned bores. There is also potential risk that the treated or untreated discharge from the mine water will have a severe impact on surface water, keeping in mind that the project site lies within the upper reaches of the Sydney water catchment area.

From a heritage perspective, the village of Berrima, situated less than three kilometres from the proposed mine site, is widely recognised today as the best preserved example of a Georgian village on the Australian mainland, having been established in the 1830s. The village is a catalyst in attracting thousands of visitors each year to the Southern Highlands. Our predominant winds in the Southern Highlands are from the south west, putting Berrima and the Southern Highlands in a direct line of all fallout of coal dust from the above-ground movement of coal and the stockpile.

PROF FELL: Now, you only asked for a short time, so I wonder if we could wrap it up very quickly. Thanks.

MR KEMMIS: 30 seconds? The reduction of air quality downwind is inevitable. The relatively small economic benefits to Southern Highlands and the State of New South Wales need to be very carefully weighed up against the potential disastrous impacts to the local environment and communities. In conclusion, I own and fly an old vintage biplane in the Hunter Valley, but I choose not to live there, because of the devastating effects that years of mining has caused. When I fly, it's low and slow. And every day I fly, I witness the decrease in air quality from the stockpiles of coal everywhere. I see scarring to what was once a beautiful rural landscape and I watch the never-ending coal trains going up and down the length of the valley, and

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an even greater build-up of vehicular traffic. I don't want to see this devastation recreated in the Southern Highlands. Thank you.

PROF FELL: Thank you.

MR FREE: Thank you. And our final speaker for today is Mr Ben Fitzsimmons.

MR B. FITZSIMMONS: Hello, Commissioners. Thanks for fitting me in at last notice. First and foremost, my name is Ben Fitzsimmons. I'm a former employee of Hume Coal. I worked there for six years, starting there as a geologist, and have spent my entire career working in the Southern Coalfields at various mines studying the geology and learning about the mines, and my most – or my last role at Hume Coal was working in a community role, so talking with community members and things like that, and I think that's well positioned me to speak on behalf of the many people who aren't here today, those many community members such as myself, a local resident, who are raising a young family, who are going to work every day and the first thought in our mind is, you know, how can we best provide for our children and what future do we want with them? A future that, you know, is based on ideology, or a future that's based on science, based on facts, based on real opportunities. And for that matter, I express my sincere support for Hume Coal.

I support for the development of local jobs, jobs which are well paid, jobs which give families the opportunity to provide the best possible outcomes for their kids. I support the development and investment in local businesses, and I strongly disagree with the claims made here today that there is no social licence operate for Hume Coal. I met with hundreds of community members during my time at Hume Coal, and many of these people spoke in support of the company, and unfortunately, they all can't be here today, and I appreciate there is strong opposition for the project, as there always will be for coal mining projects, especially when we are so focused on climate change.

And I do not deny that the climate is changing. I believe we all need to do our part to mitigate our impacts on the climate. But I do not believe that that is achieved by just saying no to sustainable development and projects which put forward plans which are based on science, based on facts, and based on innovation. Everyone is afraid. I'm sure the first person who came up with longwall mining was – people probably thought that's ridiculous. You can't take out such a large slab of coal and operate sustainably. But look at the main method of underground mining now is longwall mining. I'm sure when someone suggested sublevel stoping or block caving, people thought that's ridiculous. But it's proven successful.

And just – like I strongly believe that Hume Coal's innovative mining proposal is possible, and with the right conditions put on it by the government, by the people who are the governing body for setting out the standards for sustainable development in our state, the operation can operate sustainably and successfully and create jobs and create investment for our local community. I think another fundamental issue is

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the planning process itself. I think a lot of people do not understand the gravity that is put on public submissions by the panel.

Many people do not even understand that there is a submission process or that we are gathered here today debating the future – or not debating, but putting our opinions forward on the future of the Hume Coal Project, people who've probably applied for a job at the mine but are sitting at work, getting on with the job wondering what they're going to cook for dinner for their children, and not concerned about, oh, I better be at the Moss Vale RSL Club because its future depends on me. I think more emphasis needs to be placed on the science and the fact rather than the emotional claims like some of those made here today. And I'm guilty as anyone else as trying to make an emotional claim, so I don't – I'm aware of that.

Accountability – I think that's another big thing. Throughout the early stages of this debate regarding Hume Coal, many claims were thrown around to create fear in the community. Coal seam gas, that there was a dragline already positioned out in Belanglo State Forest, that Korean workers were going to descend on the Southern Highlands and take all of our jobs. Even a recent article published in the local paper in the editorial opinion pages that the coal was destined for North Korea. This discussion needs to be based on facts, and there's no wonder there's a fear associated with this project. It's understandable that people read these things and they think, oh, my goodness, that can't happen in my community. But that's why we need to focus on what's real and what's put forward in the EIS, which is supported by scientific and engineering studies.

There's no reason why this mine will not coexist with the agriculture industries, the tourism industries, the hospitality industries of the Southern Highlands. I grew up in Mudgee. It's the reason why I wanted to pursue a career in mining, because I saw the benefits that that industry brought to that town. It's picturesque. I will give Mudgee as an example. It's picturesque. The tourism industry is award winning and it is growing every single year, as is the local mining industry, and these are large open-cut mines, not small underground operations like the one proposed by Hume Coal.

So in summary, I support the project. I strongly believe that the project should be approved, and I strongly believe that POSCO, as much as they've copped here today, is an integral part of Australia's economy and they would be a wonderful organisation to be in our local community because the people and interactions that I've personally had with that company, I know that they have sustainability at their core, and I know they have the financial backing to make sure that this project is a success, and that at the end of the day, it's closed sustainability for the benefit of all the residents of the Southern Highlands. Thank you.

PROF FELL: Any questions?

MR SHARROCK: I have one question. Yes. Thank you for your presentation. I just wonder where your personal view is. We've heard two diametrically opposed

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views. One is that there'll be 300 jobs and that will be good for the area, and then we've heard from other people that it will be bad for the area because there'll be some shrinkage in the tourism employment; there'll be some degradation of farms; there might be people willing to invest less. So what's your view of that balance, please?

MR FITZSIMMONS: I'm always going to be a little bias because I am a strong supporter of the mining industry, especially one that's providing coal for steal. However, yes, of course automation is going to enter into the mining industry like it has done in many industries. We've got driverless trains in Western Australia. But the type of jobs is what's changing, not the number of jobs, but the type of jobs. Once there was men and boys on picks and pulling ponies out of the underground coal mines. Now we've got people on the surface driving underground miners. We've got people operating trains from hubs in Perth.

So it's the type of jobs, and that's why this mine is perfectly positioned to take advantage of those technological advancements and be a driver of change in our industry, put in automation, put in safer mining practices that remove people from the danger zone and put them up on the surface in an environment which is safe and which allows them to think broadly and be more innovative in their role. So I strongly believe there will be 300 jobs. They won't be all jobs at the face. There'll be jobs on the surface designing, you know, how we interact with our machines and how we can better operate them, maintain them, improve our efficiencies.

MR SHARROCK: Thank you.

PROF FELL: Thank you. That – thank you. Thank you.

MR FITZSIMMONS: Thank you.

PROF FELL: Now, that brings us to the end of today, and I would just like to thank you all sincerely for your attendance, and also for allowing us to conduct a respectful and quite searching session. You've given us a lot to think about on the Commission, and I believe it has been a very effective afternoon, or morning and afternoon, I should say. We'll resume at 10 tomorrow here, and we look forward to seeing quite a few of you here as we probe this more deeply. But a sincere thanks. And just before I go, I'd like to thank the secretariat people, David and Brad, who kept time for us and pretty well, and also Emily over here who's recording proceedings and will move on to produce a transcript so we all have details of exactly what we said and what was discussed. So thank you all, and see you tomorrow.

RECORDING CONCLUDED **[5.19 pm]**

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