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2015/16 HAZELWOOD MINE FIRE INQUIRY

TRARALGON

FRIDAY, 18 DECEMBER 2015

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MS JULIET FORSYTH - AGL Loy Yang

MS LISA NICHOLS - Environment Victoria

MS EMMA PEPPLER - Environment Victoria

CHAIRMAN: Mr Rozen.

MR ROZEN: Morning, Mr Chairman, and morning Professor Catford. The evidence that the Board has heard in relation to terms of reference 8, 9 and 10, presents the Board with, at a high level, if I can use an expression that we've heard a lot over the last two weeks, with a choice essentially between a pessimistic and an optimistic view of the future so far as the rehabilitation of the three Latrobe Valley coal mines are concerned. As will be apparent from the submissions of counsel assisting, ultimately we urge the Board to take what might be described as a cautiously optimist view about the future, that is a view conditioned by a realistic assessment of the challenges that lie ahead, but not a view that leads to a perception that the challenges are so overwhelming that the tasks, significant as they are, cannot be achieved.

The question of how to successfully rehabilitate the three open cut brown coal mines in Victoria is, on the basis of the evidence the Board has heard, an incredibly complex one. The Board has had the benefit of eminent experts and their advice is that filling each void with water, either fully or partially, appears to be the only viable rehabilitation option, at least at this time. However, there is presently no scientific answer about how exactly this may be done in order to ensure pit stability and water quality at closure and into the future.

Further, as is apparent from the evidence, a serious question exists of whether or not one, or even all of the mines, will be able to access the quantity of water they require to create and sustain a pit lake. Some of the complexity arises because there's no standard definition of

what "final" and "progressive rehabilitation" does and does not include. It is a theme we'll return to, but in many respects the current legislative scheme is not an entirely comfortable fit to these three coal mines. If one looks at Part 7 of the Act that deals with rehabilitation, it seems to assume smaller mines where the bulk of rehabilitation work is actually completed by the end of the licence life - that is what s.80 refers to - and that seems a very odd fit for these mines and the types of rehabilitation plans they have and it is a theme we'll return to at the conclusion of our submissions, that there needs to be a number of areas of reform of the existing regulatory mechanism to address the evidence that the Board has heard.

Significant research and coordination and consultation between interested parties and government departments is required before the pit lake concept can be confirmed to be in fact viable. The research will take many years. The evidence before the Board strongly suggests that this has been known for some considerable time. It has been known by the mines and by the government. Both mines and government have received expert advice over many years to alert them that much more must be done if the questions are to be solved and, although there have been some recent positive steps forward, the evidence demonstrates, we submit, a tendency by the mines and the government to put consideration of these issues off for another day.

As the Technical Review Board noted in its most recent annual report, it was the fire at Hazelwood last year that's actually put the rehabilitation question on the map; it is really what led to the creation of this Inquiry.

One is left wondering how long matters would have been allowed to sit without these fundamental questions being properly addressed but for the fire at Hazelwood last year.

Answering the questions in relation to closure is in itself a costly process. The answers will inform the ultimate cost of the pit lake option. Rehabilitating each mine is likely, on the evidence before the Board, to cost hundreds of millions of dollars. Now, it may cost significantly less; it may only take years or decades after closure, but potentially it may take centuries, on the evidence.

In light of these uncertainties, the present bonds of $15 million for Hazelwood and Loy Yang and 11.46 million for the Yallourn mine, intended, as they are, to ensure the state does not end up bearing the cost of rehabilitating the mines itself, must be seen, we submit, as manifestly inadequate. The failure by the regulator to review the bond levels in the 20 years since privatisation, despite the enormous growth in the mines during that time, is, we submit, an egregious failure of regulation which must be addressed. This Inquiry must, as mine closure expert Corinne Unger urged, mark a step-change in the planning process for closure. The Board will recall Ms Unger's evidence about the importance of the Inquiry and the importance of the time we find ourselves at in terms of the regulation of these mines preparing, as they must, for closure and bearing in mind that the end of licence period for the Hazelwood and the Yallourn Mine is only just over 10 years away.

Action is required now in order to ensure that by the time of closure, rehabilitation can be achieved. The

system requires redesign to embed the coordination, tighter regulatory control, transparency and incentivising of research that is required to achieve this goal. We'll ultimately submit that a person or entity independent of government is required to monitor this change. With such redesign, we submit that there is course for cautious optimism. We know from the German experience what can be done. We have all seen it on the slides. However, without redesign of the existing system, there is a danger that either the mines or, as is more likely, the state, will be left in perpetuity with huge, dangerous, unsightly and expensive voids to look after and that the communities of the Latrobe Valley will suffer the result.

We set out in our submissions terms of reference 8, 9 and 10. They have been read out on a number of occasions during the course of the hearing and I won't do that, but I do want to draw attention to term of reference 12, which is on page 4 of our submissions, and we note, and it is of particular importance in the context of this aspect of the second Hazelwood Mine Fire Inquiry, that the Board has a broad, unfettered, reasonably incidental power in term of reference 12, or paragraph 12 of the terms of reference: "Any other matter that is reasonably incidental to those set out in paragraphs 8 and 10."

A number of the submissions we make and the findings we urge the Board to make could properly be said to have their legal basis under paragraph 12 of the terms of reference.

If I could briefly talk about some key terms in the terms of reference, themselves. There are two that I want to make reference to. First, it was noted that the Board

is required to inquire into and report upon short, medium and long-term options for rehabilitation of the coal mines. They're terms that are not defined in the terms of reference. The Board has an expert report from Jacobs, which has been the subject of considerable evidence in the hearing days, and Jacobs proposed the following definitions of those terms: short-term - between now and the end of mining life, so a long period but, nonetheless, short-term, according to Jacobs, in the context of the issues the Board is looking at; medium term - a period after the cessation of mining operations running for 15 years; and then long-term - the period beyond 15 years after the cessation of mining operations.

It must be conceded that there is no basis in the report to explain how they got to those figures, they are somewhat arbitrary, but, nonetheless, they provide a useful framework for the Board's consideration. They are also consistent with the other evidence before the Board about relevant applicable timeframes in this setting.

The other matter that needs to be mentioned briefly is the reference in term of reference 10 to "the outcome of the rehabilitation bond review project". That phrase is defined in paragraph 18 of the terms of reference by reference to some evidence that was given by Ms Kylie White at the first Hazelwood Inquiry. She was, at that time, heading up the mining regulator, the position that Mr McGowan now holds, albeit with a different title.

Cutting through the evidence about projects starting in 2010, being stalled, being re-enlivened, being re-badged and, finally, emerging in April of this year as the Rehabilitation Bond Review project, we submit at 16 that,

for practical purposes, the review that commenced this year is to be taken as the same one that Ms White referred to in her evidence last year. That is the easy bit. The more difficult bit is what is the outcome of that project because that is what the Board is mandated to have regard to. The evidence before the Board in the form of a project plan for that project is that the final step, the outcome, is "finalise bond levels for each coal mine". It was originally scheduled to have occurred two weeks ago, in which case the Board could have had regard to it, but for reasons explained in the evidence which I don't need to go into, the evidence before the Board is that the best time estimate for completion of the bond review project is ongoing. Mr Wilson's estimate was that it would certainly be the other side of Christmas, by which I assumed he meant Christmas this year.

The evidence before the Board about the progress of that project is that it has produced results to date. It has produced results in the form of the AECOM reports. There are four of them. In summary, that is where we're up to in the project. The reports have been provided to the government. The next step is for the government to consult with the mines about the reports and then ultimately to revise the bond levels, or at least that's what the project review envisages.

Interestingly, and the evidence before the Board, even that step might not have been completed. The board may recall Mr Wilson saying that there may well be further discussions with the mines, so the final reports might not be as final as had initially been assumed.

In these circumstances, as we say at 20, the Board

has really two options. The first is what I might call the legalistic option, to report that it can't complete term of reference 10 because a condition precedent, that is the completion of a project, hasn't occurred and is not likely to occur in time for it either to be considered, and certainly not to be fairly considered in the sense of being the subject of evidence and submissions. The second option is what I call the pragmatic option, although we would submit with a basis in law, and that is to address the requirements of terms of reference 10 on the basis of so much of the report as has been completed and is in the evidence before the Board. We submit that in all the circumstances, especially having regard to the importance of the issues that are thrown up by these terms of reference, that the more attractive and better option is option 2 and we make our submissions to the Board on the basis that that will be accepted.

We summarise, on page 6, the evidence that is before the Board. It is worth just recapping how much material is before the Board, how much the Board has heard in such a short period of time. It has received 25 public submissions, reams of documents that have been produced by the mines and the state, pursuant to notices to produce issued under the Inquiries Act. It facilitated five community consultation sessions in August of this year in the Valley, with a total of 72 participants. Various meetings have occurred between the Board and government agencies and departments and also the mines.

In relation specifically to terms of reference 8 and 9, the Board received two expert reports from Jacobs Australia Group, firstly providing advice about options

and, secondly, providing advice about coordination and planning models. We note the instructions to Jacobs are necessarily at a high level and required it to do comparative work across all three mines, rather than looking at them individually. The Board has also received six other expert reports and statements from witnesses who are clearly amongst the most eminent in their field in Australia. I refer specifically to Emeritus Professor Galvin; Mrs Unger, of the Technical Review Board; Professor McKay from Federation University and the Technical Review Board; Professor Sullivan, formerly of the Technical Review Board, now Pells Sullivan Meynink, retained by AGL, and Drs Haberfield and McCollough, from Golder Associates, who were retained by GDF Suez.

Importantly, the Inquiry processes involved a facilitated meeting between the experts that I've just identified, with the addition of Mr Hoxley from Jacobs. That meeting took place on 3 December. It resulted in a joint expert report which is in evidence before the Board, a very important document to which we will refer on a number of occasions.

In relation to terms of reference 10, two expert reports about alternative mechanisms, one from Accent and one provided to the Board by AGL Loy Yang from an expert that that company retained, Dr Gillespie. Across the two terms of reference, 19 witness statements from 13 witnesses; we've had six days of public hearings here in Traralgon; examination of a total of 25 lay and expert witnesses by the six parties and also 66 exhibits. There is a great deal of material before the Board.

We make the important observation at 23 that although

the Board does have a great deal of material before it, this is a Board of Inquiry that, perhaps more than most, has worked under serious constraints in terms of resources and time and it has completed - not completed, but it has embarked on four separate inquiries in the period of seven months. This is the fourth of them, and it needs to be understood by all, including members of the public, that this is not the only task the Board has been engaged on and the quite small staff of the Board have, even whilst running this hearing, been involved in work on other terms of reference, so the ultimate work that the Board has done has required a balancing between competing obligations with its other terms of reference.

Turning then to options for rehabilitation, terms of reference 8 and 9. The evidence before the Board is that there are six options identified in the Jacobs report. We set them out at paragraph 25 and I won't go through them because importantly, at 26, from the preliminary options, Jacobs's opinion was that only two are viable: a pit lake or a partial backfill below the water table. These were viable based on a consideration of low fire risk, the ability to form a weight balance in the land form and the likely availability of material for undertaking the option.

Significantly, we note at 27 that the joint expert report, including Mr Hoxley from Jacobs, concluded that really the two models are variants on the one outcome: putting a lot of water in the void - either a lot of water or slightly less water. They're the options. The experts noted that the water levels for the three mines will necessarily differ. The expert group also opined that the risk assessment undertaken by Jacobs was at a high level

broad-brush approach, consistent with its brief from the Inquiry.

There was a difference in opinion among the experts about one particular alternative option, that is whether the existing pumping process that is engaged in by the mines, pumping water from the aquifer to enable mining to occur, whether that could just continue in perpetuity as an alternative. It was an option raised by Professor Galvin. From his evidence and the response from his colleagues, it is not the first time that he's raised it in their presence. It seems they remain unconvinced about its viability. Professor Sullivan and others considered it was not a viable option. They drew attention to the fact that the aquifers are part of what Professor Sullivan referred to as a global system, and one can tamper with that for decades but perhaps not in perpetuity, seems to be the evidence.

Based on his extensive experience, Dr McCollough opined that dry voids would not lend themselves to as many opportunities for community use as wet voids. It is just worth pausing there for a moment to recall Dr McCollough's evidence about that. He made a point which is significant, and that is that one can focus on risk or one can focus on opportunity in this area, as in so much in life, and he said he preferred to focus on opportunity, to see the challenges as presenting future opportunities rather than leading to a pessimistic view. It was that that led to the half full-half empty conversation, and the Board will remember Dr Haberfield's retort, which is that, "We're engineers, we can do anything." I'll return to that theme.

Because of this broad consensus in the evidence of

the experts, the focus of the hearings was, and in these submissions is, evaluating the viability of the option of filling the voids, either partially or fully, with water - what is referred to as the "pit lake option". This has been the preferred option or concept for years, back to the SEC days. It has been agreed by the experts to be the only viable option because it seems, while there are presently significant uncertainties as to how it may be achieved, alternative options appear far less achievable, and that's really what it comes down to. It is the least-worst alternative, if I can coin a phrase.

In these circumstances, it is submitted the starting point for the Board is to assess the viability of the pit lake option as against the questions in terms of reference 9. That analysis - and this is really a key finding we urge the Board to make - the top of page 9 - the analysis will highlight the degree of uncertainty which presently limits the Board, or anyone, being able to answer almost all of the questions raised in term of reference 9 and ultimately to determine that this option will, at closure, be viable for one or more of the mines.

We then set out the legislative scheme, starting at paragraph 31. It will be a relief to the listeners that I won't laboriously work my way through that, but it is important to understand the regulatory context, which is complex. It has obviously developed over time. As with so many Acts of parliament, bits have been added, there doesn't seem to have been a root and branch review of this Act since it was enacted in 1990, and that is significant. Take one example. Section 7C was added in the late 2000s - 2009, 2010 - to enable a declaration that certain mines are

declared mines, and what flows from being a declared mine, and it is only to be declared if there are considerable stability and other issues there, what flows from that is the obligation to pay a stability levy under the regulations and do other things and the levy, as the Board heard, is in the vicinity of $400,000 per mine. It is just one example in which over time there's been a recognition on a gradual basis that these three mines are different. They are different to other mines in Victoria; they are different to other mines anywhere in the world in truth, and it really leads one to ask the question, if it is accepted that they're so different and they throw up such different issues, then maybe at least a discrete part of the Act dealing with the issues concerning these three mines might be an appropriate approach. The material before the Board doesn't enable the Board to come down with a hard and fast recommendation to that end, but as will be seen, there is an existing legislative review ongoing within government and we submit the best the Board can do is identify some aspects of the evidence it has heard that should inform that review, and I'll return to that theme.

The part of the Act I do want to refer to briefly, though, is Part 7, which we deal with at paragraph 37. We've endeavoured to summarise, rather than set out, its contents. It is worth briefly referring to them because, to the extent that we have a regulatory scheme in Victoria dealing with the issues that this board has been asked to consider, it is in Part 7.

Firstly, a licensee must rehabilitate land in accordance with an approved plan, so it is that approved plan that is really at the heart of the scheme, as we'll

see. The plan must take into account the matters set out in s.79, which I won't detail. The third dot point, and this is another provision which is little used that we will return to in our submissions: the Minister may require a licensee to undertake a rehabilitation liability assessment in the manner and form specified by the Minister, that is to assess its liability under its plan.

Fourthly, the Minister may require a licensee to enter into a rehabilitation bond in an amount determined by the Minister and the amount may be varied by the Minister if he or she is of the opinion that the amount is insufficient. A condition of the bond, the only condition of the bond, is that the licensee rehabilitates its land as required by s.70A, so, in other words, the bond is linked to the plan. And that is an important matter that we can't emphasise enough, and that is even though term of reference 10 sits separately from 8 and 9 and even though, for practical reasons, we separated the evidence as between 8 and 9 in the first week and 10 in the second week, we don't want to be giving anyone the impression that we see them as discrete issues. They are all part of the one regulatory scheme. The only purpose for the bond is to get the rehabilitation done. So it cannot be seen as some end in itself, some punitive thing to make big companies give the government lots of money; it is all about getting rehabilitation done. It is either getting it done by the mines or, if it has to be done by the government, the mines still foot the bill. That's the scheme, and that's very important.

A licensee is required, as far as practicable, to rehabilitate the land before the licence expires and, if

this has not been done, then to do it as expeditiously as possible afterwards. That is s.81, to which I alluded earlier. That is the provision which seems to be a very odd fit with the evidence that the Board has heard. Yes, it is true that some rehabilitation of these mines can be done before the licence expires, but if the final rehabilitation option is to fill it with water, then it has obvious limitations in what can be done in the short-term, quite apart from questions of the location of infrastructure and other matters that impinge on the practical ability to do a great deal in advance of mining concluding.

Section 81 is the provision that seems to be what people refer to when they talk about an obligation to do progressive rehabilitation. Interestingly, that expression doesn't appear in s.81 - it doesn't appear anywhere in the Act, for that matter - and we'll return to the significance of that.

The second-last dot point on page 11, the Minister may require a licensee to engage an auditor to certify the land has been rehabilitated as required by s.78 for the purposes of deciding whether to return any bond. That is obviously a protection for the Minister before the bond is returned that there won't be further money that needs to be spent on rehabilitating land. The Minister must return a bond, but only if satisfied the land has been rehabilitated under s.78 and the rehabilitation is likely to be successful.

Now, once again, that is a very significant provision here because at what point does that occur? Is that when the pit is full of water or is it when ongoing water

quality can be maintained or at what point? And obviously that is very significant because we're talking decades, maybe many decades on the evidence before the Board. So what does that mean in terms of cost, for example, is one implication.

The top of page 12, if the Minister is not satisfied the land has been rehabilitated as required by s.78 and that further rehabilitation is required, the Minister may take any necessary action to rehabilitate the land. That throws up a question which has been referred to in evidence and that is, if it is privately owned land, then how does that work? Does "necessary action" include entering private land without the consent of the occupier? One would assume, applying general principles, that the answer to that would be no, and if that's right, then what does that mean for finalising rehabilitation?

Finally, the Minister may recover as a debt due to the Crown any amount by which the cost incurred in doing the rehabilitation work exceeds the bond. Now, in circumstances where the rehabilitation is not completed because of insolvency, for example, then there are real practical issues about the ability to recover funds. Equally, if assets are offshore, there is a whole range of difficulties thrown up by that.

Dealing then with the specifics of term of reference 9 - we have done it under headings rather than under paragraphs, so there are themes that run through 9, the first of which we identify is fire. Term of reference 9(a) asks whether, and to what extent, the option would decrease the risk of a fire that could impact the mine and, if so, the cost of the option relative to the cost of other fire

prevention measures. It clearly refers back to the evidence that the Board heard in the first Inquiry.

The Inquiry into the fire of 2014, of course, starkly demonstrated that uncovered coal is a serious fire hazard. One of the very pleasing things, I must say, from the perspective of counsel assisting, is the extent to which there has been a very quick recognition of that in the year or so since 2014, a recognition of the role that rehabilitation can play, both progressive and final, in reducing fire risk. The Board may recall Kylie White's evidence when asked that question last May, in the first Inquiry, her initial response - I think it was a question asked of her by my learned friend Ms Nichols at that time. Her response was, "They're different things. One has got nothing to do with the other. We've never thought about progressive rehabilitation as being about mitigating fire risk. We've always thought about progressive rehabilitation as covering exposed coal with soil and planting trees and bushes - in fact, it is usually increasing the fire risk rather than decreasing it." So it is very interesting to note, and that is a pleasing outcome of the first Hazelwood Inquiry and we have seen that in the evidence of Mr Lapsley, but also in a great deal of the evidence that the mines have put before the Board, and that evidence very strongly suggests the great length the mines have been going to and are going to to reduce fire risk.

Clearly covering the coal with water eliminates the hazard, and we can say that with some certainty, and in that sense the pit lake option can be presently evaluated as an option which would significantly decrease, perhaps even remove, the risk of fire, at least where the coal is

covered, but that really is limited to the long-term and we know the long-term here might be, as we've already said, at least decades.

None of the mines propose or even can cover every part of every coalface with water, of course. To a greater or lesser extent, they each propose to have a portion of the batters above the final water level covered with overburden and vegetation, and we see when we compare Loy Yang's 97 plan with a pit lake at plus 60 metres, from recollection, we compare that to the 2015 plan, where it is at minus 22 metres, that is 80 metres of additional exposed coal and we can see the implications both in their costings and also in the costings that AECOM carried out for just that difference in terms of the rehabilitation option.

It really raises the question of how these various facets of rehabilitation interconnect fire protection with stability, fire protection and stability with cost and so on. One can't look at these matters in isolation. It raises a first question, and that is what depth of overburden is required in order to reduce to an acceptable level the risk of the ignition of the coal? No witness was able to direct the Board's attention to research which answers this question. I'll just pause for a moment. That was the case in the first Hazelwood Inquiry. It was also the case during the Anglesea term of reference, which we heard in June of this year. The work just hasn't been done. Mr Faithful, of GDF Suez, gave evidence that coal covered by a metre of overburden didn't catch fire during the Hazelwood Mine Fire of 2014. From recollection, he was a bit coy about referring to why he was confident that a metre of overburden was enough, and it was in answer to a

question from my learned friend Ms Doyle that led him to explain that it was based on that real life practical test.

By contrast, Jacobs considered two metres was appropriate. There was some questioning of Mr Spiers and Mr Hoxley about that. Mr Spiers in particular answered some questions asked of him also by Ms Doyle on this question, and drawing on his 30 years of practical experience running the Loy Yang Mine, not to be sniffed at, he explained the rationale behind choosing two metres was that in this situation we're talking about treatment of batters that has got to last hundreds of years and he added, "We don't really know the right answer, so we went for a conservative depth that we thought was safe to achieve the outcome and wouldn't be overly costly."

If I could just pause there a moment. There is an interesting tension in the evidence the Board has heard between people taking a conservative or pessimistic view about matters and taking an optimistic view about other matters, such as the ability to access water, for example, so there is a real mixture in the evidence before the Board.

Further, planning towards a pit lake option means that on each mine's current plans, the coalfaces under the proposed final water level will be uncovered and therefore exposed until the water level is reached. On some modelled scenarios, this could be for a period of up to 500 years, for example, with Hazelwood, but, of course, it might be far less. The time to fill the Yallourn Mine is estimated by the mine at 17 years and Loy Yang 70 years. Whichever of those estimates turns out to be right, we're talking about a long period of time during which coal will be

uncovered, and there's no proposal to cover it other than with water.

Leaving to one side for the moment whether this approach would be suitable from a safety and/or water quality perspective, and we come to those issues presently, it is plainly a matter relevant to fire risk. Presently fire risk appears to be managed well by each mine. That is clearly the evidence of Mr Lapsley. He described the mines' involvement in the Coal Mine Emergency Management Taskforce as "exceptionally good". The Board can rely on that evidence, particularly having regard to the number of meetings, most of which Mr Lapsley was at, as disclosed by the minutes that are attached to his witness statement.

Further, we don't just have to take Mr Lapsley's word for it, we've got Mr Comrie, the implementation monitor, who looked specifically at what GDF Suez have done in relation to addressing fire risk. He notes that they've completed most of the implementation actions. Those remaining are progressing in a satisfactory manner. There has been a high degree of cooperation.

We note at 46 that these things are not cheap. They are expensive to install, expensive to maintain. Some of the equipment is located on the pit floors, understandably enough, and that has implications for rehabilitation. It is not clear what the cost or practicalities are of maintaining those systems during the unknown period of time whilst the pits are being flooded. It may be that overburden is required to be placed on each part of the batters as a fire prevention measure post-closure, and the cost of undertaking that work and the degree to which it may require overburden to be obtained from outside the

mines, potentially at significant cost, is also unknown.

Mr Lapsley, pleasingly, indicated a willingness on his part to continue to work with the mines and the regulator on these issues. He indicated a desire for some further discussion about covering the coal as a short to medium term option to reduce risk.

I'll just interpolate there that that is a very important matter which, on our reading of the risk assessments conducted by the mines - and we've only really examined the GDF Suez one in any detail - seems not to be addressed in any detail, that is, the short-term possibilities for covering the coal. The Board will recall the evidence last year from, among others, Mr Incoll and Professor Cliff that there may be other ways of covering coal in the short-term. There was references to shotcrete and other such evidence, and it is the one disappointing aspect of the risk assessments in relation to fire that those matters do not seem to have been examined. It is something we'll return to, but it is inherent in the risk assessment process that by bringing together a workshop of people who actually do the work, that you limit yourself in the range of potential control measures that are discussed. So if you examine the workshop material in the GDF Suez risk assessment, for example, the discussion is mainly confined to what we do now in terms of fire risk rather than what we might potentially do by having regard to what is known in the world about these issues, and it is important because as DEDJTR moves to a risk assessment-based model of regulation, which certainly has its attractions, it is very important that there is a rigour associated by those risk assessments so they don't

just repeat that, "This is what we're doing and, therefore, this is how we're going to continue to control this risk." There must be a mechanism that requires looking outside of the enterprise, especially about these sorts of issues, to inform a consideration of what other control measures there might be there, and covering the coal is just one example of that.

Pleasingly, DEDJTR has recently established a mine fire safety unit, which will assist in answering some of these questions. The role of the unit will be, as we note at 48, to lead regulatory compliance and education activities related to fire safety in mines and to provide advice to regulatory staff, industry and the public. It is to have a staff of six and a budget of 1.6 million, on the evidence, and the unit will contribute to the regulator's assessment of fire risk in relation to the risk assessments that I've just spoken about. Mr Lapsley agreed that the unit provided opportunity for what he described as "practical understanding" and "the setting of standards", and just on this point we note that the action plan, which is Exhibit 37, the regulator's action plan, explains that it is presently recruiting to fill the unit. The work of the unit will be supported by risk and fire experts, according to that plan, and they will provide a conduit between the regulator and best practice in other Australian jurisdictions and these initiatives arising, as they do, out of the first report of this Board of Inquiry, are to be commended.

Turning then to questions of stability, which have occupied a great deal of the evidence before the Board. Term of reference 9(b) requires the Board to consider

whether and to what extent the option would affect the stability of the mine. Term of reference 9(c) directs attention to whether and to what extent the option would create a stable land form. The two are not identical but we refer to them together because they raise a number of related issues.

Professor Sullivan told the Board that in geotechnical engineering, there is no definition of either "safe" or "stable" and that they often require personal value judgments. In the joint expert report, all of the experts, including, obviously, Professor Sullivan, agreed there is no universal definition of "safe" and "stable" and therefore there's no clear acceptance criteria against which judgments can be made about levels of stability.

Professor Galvin informed the Board that mine stability is particularly important in the Latrobe Valley because of the closeness to mine crests of key infrastructure, such as highways, railway lines, power transmission lines, telecommunication systems, rivers and drains. He noted that there's been a history of ground movement in the vicinity of the mines. These issues are far from theoretical. We have, in the last decade alone, seen several significant examples of batter instability and the proximity to infrastructure, and probably the best example, the one we see every time we drive to Traralgon, is the proximity of the freeway to the northern batters of the Hazelwood Mine. It brings that issue home to anyone. You don't need to be a geologist to appreciate the proximity issues.

The science presently doesn't allow for an evaluation of the viability of the pit lake option from a stability

perspective. That is a conclusion we say the evidence inexorably leads the Board to. According to Mr Mether, the mine manager of the Yallourn Mine, "Stability is a major consideration for our mine when we move to that final rehabilitation stage." Similarly, Mr Rieniets made like observations.

Part of the complexity lies in the unique properties of the Latrobe Valley and particularly Latrobe Valley coal. Professor Sullivan told us it is a complex system. The coal is light and very sensitive to movement as a result of interaction with water. Professor Galvin, as so often, described it in a way that is readily understood, and I quote: "As groundwater and coal are extracted, the unmined coal relaxes and moves, allowing natural join or cracks to open up. If a crack then fills up with water, the water pressure in the crack can cause a whole block of coal to be pushed and slide outwards."

Each of the mines has water pressure behind its batter walls and the pit floor, although this is far less of an issue at Yallourn, as the evidence discloses. There are particular stability concerns relating to particular batters. I have already referred to the northern batter at Hazelwood. And the solution to those concerns is currently unknown, although the evidence does indicate that it is not unaddressed; there is ongoing measurement, at least, of batter stability. The process of filling a mine with water may itself create undue risks, including potentially reactivating what's referred to in the evidence as the "Lewis anomaly", an anomaly which involves the bending of gas pipes in Morwell towards the mine. It is another example, and Professors Galvin and McKay told us, that

these things have been known about for decades and they referred, concerningly, to a loss of corporate knowledge about many of these issues and that that corporate knowledge is so important now in informing future decisions about rehabilitation.

How quickly or slowly a void is able to be filled may impact on stability. The Board will recall Dr von Bismarck, in response to a question I think from my learned friend Dr Collins, telling the Board that a filled void is easier to stabilise and so it is desirable to fill the voids as quickly as possible. The use of dirt or overburden may be one way to assist. According to Professor Sullivan, it is the one physical thing that can probably withstand the sort of critical loading events that will happen in the very long-term, which is what we're talking about here. However, what level of overburden may be required to achieve stability in a pit lake is not known. It may be that different layer levels are required in different parts of each pit. This could end up consuming quite a large amount of the available overburden, once again with implications for other issues, like the ability to use the overburden for mitigating against fire risk. I think it was Mr Mether who told us that - it might have been Mr Faithful - that overburden is a scarce resource in the mines because of the coal-to-overburden ratio that exists in the Latrobe Valley. Now, of course, in Germany that is very different and it is important to remember that the coal-to-overburden ratio in Germany is far worse from the point of view of a miner but far better from the point of view of a rehabilitator, if I can put it that way.

Similarly, the requirement to ensure pit walls above the proposed final water level are safely drained may result in more than the presently proposed one metre coverage being required. According to Professor Sullivan, it is too early to talk about layer thickness - once again, an area that needs to be researched and to which answers need to be found. As I have noted, overburden is scarce and therefore any use of it in a particular area means it might not be available for another cause, possibly impacting on the cost of a given rehabilitation option. The extent to which it impacts is presently unknown, has presently not been estimated by the mines, or anyone else, for that matter, in a way that provides the Board with reliable information.

A further unknown is what impact erosion may have on a pit lake during filling and after the proposed water level has been reached and what, if anything, will be required to ensure any such erosion does not destabilise the lake. It leads to a discussion of something I certainly hadn't heard of a fortnight ago, but I feel I now understand well, and that is rip rap. There are significant cost implications if a measure such as rip rap is determined to be required. The AECOM report about Hazelwood tells us that in very stark terms. I think the figure was some $90 million allocated just for rip rap over a period of five centuries.

In questioning by counsel for GDF Suez, Mr Chadwick of AECOM explained the basis for the inclusion of those costs and, in particular, why they are higher for GDF Suez than for other mine, and it is to do with the length of time of filling. That is the assumption that provides the

basis of the estimate. The use of rip rap was based on AECOM's conservative opinion that it would be necessary in the absence of other information suggesting it is not needed. Hazelwood, through Mr Faithful, indicated to the Board that further work on wave erosion will be undertaken. We note that Dr McCollough, Hazelwood's consultant, recommended studies to be done. It was one of his 17 studies that he identified in Part 4, I think it is, of his report.

What equates to a stable final batter slope angle is also presently unknown. The experts record in their joint report that there's no scientific and engineering evidence to support the three horizontal to one vertical ratio as being the generally accepted or generally adopted long-term slope angle for all slopes once rehabilitated in the Latrobe Valley. Answering this question may impact significantly on the cost of labour and potentially paying for the sourcing of external overburden. We note that that ratio, 3H:1V, appears in most, if not all, of the approved rehabilitation plans, despite the fact that the evidence would suggest that it is not that simple. One can't just make that assumption, and yet the mines make it; the regulator seems to accept it, at least at the level of approval of the plans, but the experts say, "No, there needs to be mine-by-mine, batter-by-batter consideration of the safe final slope angle." It is just another example of the complexity and the potential impact on costs and other matters.

Perhaps the greatest unknown, as it relates to stability, is the question of how long the pit lakes will require monitoring after filling. Professor McKay stated

that the research is simply not strong enough to give a clear indication of how quickly we can expert to see stability reached and that it may be decades after the proposed water level is reached.

I just pause there for a moment. There's two potentially related issues about monitoring, and that is monitoring the water quality, itself, but also waiting to see what effect the water and that quantity of water has on stability, and that's the reference that is being made there. In addition to monitoring, there may, of course, be the need for maintenance. That will be determined by the outcome of the monitoring. Professor McKay noted that any maintenance required will be a significant expense itself. Mr Rieniets acknowledged that Loy Yang's current presumption that maintenance requirements taper off as flooding occurs assumes stable land form. Now, he might be right. We don't know. No guarantees in life, as Mr Rieniets has told us a couple of times.

Significant research is required to attempt to solve the present conundrums. How can each pit lake be made stable and what will that cost? The research itself will be time consuming and expensive. Two studies are shortly to commence to progress knowledge in this area. This is a very pleasing development. The batter stability project will take place at Yallourn. The government has provided seed funding of $2.2 million. I just pause there. There are aspects of the evidence concerning the batter stability project which are disturbing. It seems it has been delayed for at least two years. The Board will recall Professor McKay's frustration about that and his observation that perhaps government is not best placed to oversee such

research, and that is another matter that we will return to.

The second study is the one at AGL Loy Yang, to take place at the Loy Yang Mine. While commendable, Professor Galvin has referred to these studies as being the tip of the iceberg. That could almost be the quote of the hearings to give us all an understanding of the amount of work that needs to be done. He notes that a significant amount of further research directed towards achieving mine stability in the long-term is required. Addressing what he refers to as this legacy issue will require significant funding.

Turning then to the question of water quality, which although not expressed in terms in the terms of reference, is clearly thrown up by term of reference 9(c), which requires the Board to consider whether and to what extent the option would minimise long-term environmental degradation. It is not presently clear how water quality will be maintained in each of the proposed pit lakes, nor what the costs of answering this question and maintaining safe quality will be. The complexities include whether or not flow through - that is connection to river systems - is possible or even desirable. If I could just pause there. At a conceptual level, and intuitively, one thinks, "Yes, connect it to the rivers, provide flow through. That might well improve water quality," but as Dr McCollough told us, flow through can create a number of dangers, both for the lake itself and also for the river and the users of both of those entities. In part, this is because of the potentially unsafe interaction between any coal, overburden and/or ash dumps, on the one hand, and the water systems on

the other. These interactions, particularly when evaporation also occurs, thus concentrating anything in the water that is a pollutant, may result in environmentally unsafe water. We probably all recall that slide that Dr von Bismarck showed us of the polluted water at one of the mines and that is a graphic example of what Dr McCollough is talking about.

It is possible these issues can be solved by the treatment of the water or by sealing the pit floors and walls or a combination of these measures. A lot of work must occur in order to determine how and if the pit lakes can be made safe from a water quality perspective. According to Southern Rural Water in that letter that was the subject of so much attention during the hearings of August of this year, "There are significant risks related to ground water management inherent in the Loy Yang intended pit lake."

It is likely that the prospects for Yallourn in successfully resolving these questions is greater than for the other mines. Professor McKay told the Board, "I would not expect either Hazelwood or Loy Yang to have water levels which would allow a direct movement of water over land back into the river system. They will be enclosed lakes and their primary discharge, if left to nature, will be evaporation."

That is a very significant part of the evidence before the Board from an eminent hydrologist who is making a real-life - not, "What might happen?"; not, "How could this turn out in the best of all possible worlds?", but real-life no rivers connected to either the Loy Yang or the Hazelwood lake.

Evidence provided by Hazelwood and Loy Yang to the Board was that, despite their final voids being significantly larger than the Yallourn void, that the amount of water each intends to fill is about the same, and on simple mathematics, that suggests that the final intended pit lakes at those two mines will be well below ground level. The implications of this are concerning. Any questions of public access and amenity need to be understood in the context of lakes which one will need to peer over the cliffs to see towards the bottom of the lake.

Dr von Bismarck gave evidence regarding the difficulties faced in Germany of predicting water quality when connecting pit lakes to river systems. This is in the context of his evidence that, "Yes, a lot has gone right, but quite a bit has gone wrong along the way as well." He made reference to the modelling that they had done for each mine in terms of water quality and he said the models weren't quite precise enough and required improvement over time. Measures have now improved to reduce the iron hydroxide content in the groundwater and river systems. The take-out message from all of that is, as with stability, the cost of monitoring water quality in the pit lakes is unknown, it represents an uncertainty in the assessment of rehabilitation liability for each mine, it represents a limitation on the Board's ability to deal with that term of reference.

Water sourcing is another matter about which the Board has heard a great deal. It goes directly to the question of viability. 9(f) in the terms of reference draws our attention to the viability of the options and any associated limitations and also to whether the option is

otherwise sustainable, practicable and effective. On any view of the evidence, an enormous amount of water is required by each mine to fill its pit. As we can all recall - I think my learned junior might have given this evidence from the Bar table initially, but now confirmed by a footnote - Sydney Harbour contains 500 gigalitres of water. Each mine says it requires between 700 and 750 gigalitres, a combined total of more than four times the water in Sydney Harbour. It is possible that due to evaporation, ongoing top-up will be required. In other words, that is the water you need to fill them to the desired level, but there may well need to be more water to maintain that level, depending on whether there is flow through from other water sources, and whether or not such flow through is possible is unknown. We've just alluded to that.

Presently, the mines have access to water through licences, either the mines or the power stations, and we have set out the quantities of water that the mines have access to under paragraph 80. Particularly in relation to the bulk entitlements, it is a lot of water, but it is water that only the power station licence holder has a right to use and only presently and only on the terms of the existing licences. The evidence is not at all clear that that water will be available to any of the mines for the purpose of rehabilitation. That is probably an understatement. The state of the evidence at the moment is that is just not known at all. This is firstly because, in relation to the groundwater licences, the licences expire in 2025 and, importantly, the purpose for which access to water is granted may not extend to rehabilitation. We note

at footnote 94 that condition 2 of the licences is that the water is made available to facilitate mining for coal and generation of electrical energy - "and purposes incidental thereto". Of course, the final two words, "incidental thereto", are the key there and one could see how one could mount an argument that rehabilitating mines is incidental to mining coal, but equally one could see how someone could resist that proposition. The point is the Board doesn't know. More importantly, the mines don't know; the regulator doesn't know.

The bulk entitlements do not expire, but are issued to the relevant power generation company associated with the three mines and tied to the purpose of operating the power station. Whatever the argument is about whether the other entitlement, the groundwater entitlement, whatever the argument there about its availability, it is a lot weaker in relation to the bulk water entitlements, we would submit. Filling a mine with water seems far removed from operating a power station.

The various water authorities have confirmed in evidence - and this is obviously far more important than whatever counsel assisting might think about a construction of the licences - have confirmed in evidence to the Board that it is not clear to them, and they have not determined, whether any or all the mines would be able to acquire the water they need to fill the pits. Even if the bulk entitlements could be accessed, one issue is how much a percentage share will mean in terms of water in 20 or 40 years' time. I think it was Professor Catford's questioning of Dr Davis from DELWP about, "What impact is climate change going to have on these issues? We're

talking about something decades in the future. Has the modelling been done?" The answer is, "To some extent," but obviously there's more work to do.

There is before the Board a document entitled the Gippsland Regional Sustainable Water Strategy, rejoicing under the acronym of the SWS, a state policy document developed by experts over two and a half years' of work. It states, "Current rehabilitation plans for open cut coal mines involve flooding them to create artificial lakes. However, this is not considered to be an entirely viable option any longer because there is insufficient water to fill most of the mines." That was written in 2011. The warning signs are there.

Similar concerns have been raised elsewhere, including by the Technical Review Board, itself, in a letter dated 2 February 2011, signed by Professor Sullivan as the incumbent first chairman of the Board. In that letter, Professor Sullivan wrote - and concerningly, this is in relation to Yallourn - "The current Yallourn rehabilitation strategy of flooding the mine has been shown not to be feasible because of insufficient water." Yet again, and as recently as August of this year, a letter from Southern Rural Water, when asked to examine the Loy Yang work plan variation, Southern Rural Water, well placed, no doubt, to make these sorts of comments, said, "There are a significant number of risks related to the long-term availability of water for mine void filling and potential consequent impacts on regional water resources to achieve the proposed mine rehabilitation which are not addressed in the plan."

Loy Yang's own expert consultant, GHD, in a report

relied upon by AGL in support of its recent work plan variation, accepted, "The likelihood of accessing full bulk entitlements post mine closure is unknown at this stage and could potentially be affected by actual climate sequences, in particular during drought periods, so there's some uncertainty associated with relying on this allocation for mine closure planning." Mr Rieniets, of Loy Yang, accepted that the level of proposed water in the Loy Yang pit may alter in the future depending on the answers to questions about water sourcing.

The present unknown does not require research in order to solve it. I just pause there. That is a very important issue. Everything else requires, it seems, a great deal of research. This issue requires conversations and potentially applications or contract negotiations to occur. The ramifications are significant. We cannot emphasise this enough. If the water is not available, the proposed pit lakes may not be viable at all. If it is available, but at a cost or only over a significant period of time, then this may impact the viability of the option as compared with others. It really brings us back to where we started, and that is that the pit lake option is the most achievable because the others are considered not to be achievable or not to be viable. But if it turns out that it is so expensive to fill the lakes because of water access, then the other options may have to come back on the table. That is a very important unknown at this time. It is an answerable matter. That is what is so concerning about it.

We conclude in relation to this topic, and this is a matter that we must underline and emphasise for the Board's

benefit, the failure over 20 years for this issue to even be the subject of a discussion between the affected parties is perhaps the most disturbing aspect of the evidence the Board has heard. It reflects poorly on all concerned, government and the mines, and we will return to this issue.

CHAIRMAN: While you're drawing breath, Mr Rozen, can I mention that you've got to just over one-third. It will take you three hours to get through it if you go at the same rate. Because I'm assuming that all other parties are going to be using up their time, I'm going to have to insist that people stick to it unless I get some indication now that people are going to be very much shorter than the hour that they've been allowed.

MR ROZEN: I can be the conduit, if I may.

CHAIRMAN: Sorry?

MR ROZEN: I can be the conduit via the parties to you about that because I have raised it with them. I'm told the estimates are 45, 45 and 45, so - - -

CHAIRMAN: Okay. I don't need to exert as much pressure now that you're relieved to some extent.

MR ROZEN: I'm still cautiously optimistic of getting in within two hours.

CHAIRMAN: Okay. I'll let you go.

MR ROZEN: Turning to timeframe, term of reference 9(e) requires the Board to consider the estimated timeframe for implementing the option. In their report, Jacobs state it is possible the Yallourn Mine could achieve a partial backfill below the water table in the medium term. Hazelwood and Loy Yang are not expected to achieve pit lake land form in the medium term, in part because of volume of water. Jacobs note that based on current indications of

closure dates, the Latrobe Valley mines are likely to be filling the final mine voids at the same time, leading to possible concerns about impact on groundwater, access to water and backfill and so on. That is particularly the case with Hazelwood and Yallourn, it should be said. That throws up the question which we will return to, and that is of the need for an integrated planning process for closure of the mines.

We've already noted that one initial difficulty in considering timeframe is to know when it is over. It was Ms Unger who told us that it is not over when it is over, in the context of mine closure, and that seems particularly relevant here. In the case of a pit lake, questions are raised about when that is, and it is important because it impacts on how long one needs to monitor and therefore when it can properly be said the mines are fully rehabilitated.

As we note at 94, resolving the question about where water can be sourced from will dramatically affect estimated timeframes and the cost of implementing the option will be very different, depending on the period of time it takes to flood the voids.

9(h) requires the Board to consider future beneficial use; whether, and to what extent, the option would impact the future beneficial use of land areas impacted by the mines. As above, there is presently a lack of clarity about whether or not the pit lake option will impact the future beneficial use of the land. It is tied to stability questions and the water quality complexities we have discussed. At present, Yallourn's pit lake option is to provide for beneficial use of the community, both through allowing direct access by them to the lake for recreational

purposes and also providing a flood, drought and fire resource if and when required. We will all recall Mr Mether's vision of there being homes with lake views one day at the Yallourn Mine.

This aim depends, of course, on a number of the uncertainties that we've already talked about - that is the ability to connect to the river system, the impact on quality, the impact on stability.

Loy Yang has recently determined that at least at this stage, it does not intend to allow public access to its partially-filled pit lake. This was a significant departure from its earlier approved plan, 1997. Dr Sullivan, Loy Yang's consultant, explained that this is because of safety and that more detailed engineering may well show that can come back into public access of some more limited form, but he had no idea when that might be done. Mr Faithful told us that Hazelwood is still working through whether or not it intends, as part of its work plan variation next year, to allow public access after closure.

Turning to the question of progressive rehabilitation, term of reference 9(d) requires the Board to consider whether and to what extent the option would ensure that progressive rehabilitation is carried out as required by the Act. The starting point is what "progressive rehabilitation" means. We've noted that it is not defined. There are not even any criteria by which progress in this area can be generally measured. There appears to be a general presumption by the mines that progressive rehabilitation is essentially about adjusting slope angles, moving overburden and planting vegetation. On this narrow definition, and we consider it to be a

narrow definition, operational constraints in the mines significantly reduce their ability to do that in a number of parts of the mine.

Further, it is submitted that an option, whether it is a pit lake or anything else, can't ensure progressive rehabilitation is carried out. In other words, it is the wrong question, really. It's regulation commitment, financial incentives, or a combination of those things, that ensure progressive rehabilitation.

Turning to cost, term of reference 9(f) requires the Board to consider the estimated cost of the option. The Board has before it the current estimates by the mines in their most recent Schedule 19 reports submitted under the regulations. The Board also has independent cost estimates produced for DEDJTR by its consultant, AECOM, and we come back to this in term of reference 10, and we note at the present time that the costs carried out by AECOM are on a different basis to the cost estimates as carried out by the mines. Putting it simply, the mines have carried out the first-party cost, what it will cost them, they estimate, to do the rehabilitation. AECOM is answering a very different question, what it will cost the state to do it in the event that the mine licensees are not there at the time the work needs to be done, or what is called third-party costing in the literature.

With that caveat in mind, the figures that AECOM have produced are very different, orders of magnitude different to the ones the mines have produced. They have produced ranges of figures: Yallourn, 167-262; Hazelwood, 264-357; Loy Yang, 221-319. We submit that costs should realistically include trials and research and it is not at

all clear that any of the estimates before the Board adequately include estimates for such matters. It is submitted that Ms Unger's definition of "progressive rehabilitation" is far better suited to achieving the aims of the legislative regime, that is to ensure final rehabilitation is achieved safely and as close as possible to the date of closure, or to do acts which work towards achieving those ends. Ms Unger's definition includes trialling final rehabilitation concepts and building community and regulatory confidence. As she told the Board, anyone can push out a slope and throw some seed out - it might just be understating that issue a little.

Professor Galvin appears to agree with this type of expanded definition. Rehabilitation, for him, is very broad. It is not just putting a dozer down a slope and flattening it and putting a bit of grass on it.

In summary, there are no guarantees in life. In light of the above, we submit it is simply not possible to evaluate rehabilitation options against the criteria set out in term of reference 9. As even the mines themselves concede, resolution of some of these uncertainties may change the final intended to design. According to Dr McCollough, it is possible, although he told us not very likely, that the results of the various studies that need to be done into stability, water quality and so on will show that a pit lake is not desirable, and he told us there's no reason then to take the pumping in perpetuity option off the table. He joined with Professor Galvin, but only with that caveat.

Mr Hoxley, from Jacobs, who set the parameters of the debate, in a sense, by their initial report, considered

that "lining the voids and leaving them open has been ruled out through our study because of some of the technical difficulties, but it could well be that in the course of understanding why a pit lake may not work, that some type of lowered land form - that we will then see a solution to that." In his opinion, "Often a lot of those constraints come down to the cost that people will bear."

It would, we submit, be remiss of the Board not to consider, by a reference to the incidental power in 12, whether the current system is well placed to ensure these uncertainties are resolved well prior to the estimated date of mine closure. The Board can't answer the questions, we submit, in term of reference 9, not with any certainty at all in relation to some of them and not at all in relation to others, on the evidence, but what the Board can do is address whether the existing system, the existing mechanism, is likely, in its current form, to lead to those answers being provided. We say it is important to consider that question because finding the answers will take some time, but the closer to closure we get, the more narrow the options will become if, for example, progressive rehabilitation has been undertaken with a specific and possibly flawed concept in mind. This appears to accord with Dr McCollough's memorable reference to a Rubicon moment in mine closing planning, where an option is irretrievably lost due to mining design or other achievements, and it calls to mind the evidence given on the very first day by Mr Langmore of what he described as his "fairly major concerns" that, "If flooding the mines doesn't work, have we blown the chances of getting rehabilitation done properly?"

All of that explains, in a way that I didn't really appreciate when I first read it in the Technical Review Board's report from 2011, about why these answers must be provided immediately, as addressing them will require "a lot more research and money than people have been anticipating to get on top of the problem". The mines could close earlier than presently intended. That is a reality that it seems even the mines seem to accept, with the possible exception of Loy Yang.

Both Mr Faithful and Mr Mether indicated that they were not in a position to guarantee that the mines may not continue to operate until the expected closure dates, and of course they aren't. Dr von Bismarck informed the Board that the experience in Germany was unexpected. It was the largest producer of brown coal in the world 25 years ago, so in the space of a generation, the coal mine industry has effectively been shutdown. Why? Because of a government decision to do so in line with a concern about environmental standards.

As indicated by Mr Byrne of AECOM, the costs relating to rehabilitation for early closure are more expensive than at the end of mine life, for the reasons we've just explained about third party costing. It is submitted that for the reasons developed below, the current system, though it shows some signs of improvement, and we do concede that, is ill-suited to ensuring these questions are answered in a timely and accountable manner. The issues have been neglected and ignored. The SEC ignored the issue of mine rehabilitation during its management of the mines. Rehabilitation was considered an issue for future consideration, although there was a presumption that the

mine pits would ultimately be flooded at the end of mine life. However, the State of Victoria was presented with a real opportunity when the mines were privatised in the mid-90s to grapple with some of these issues. It was an opportunity which wasn't sufficiently taken. The regulatory regime that was set up required very little of the mines in terms of details on how rehabilitation may be achieved. We submit that represented a second lost opportunity to enable a closure planning process suited for addressing the complexities involved in closure. Unhindered by any requirement to provide timelines and detail regarding rehabilitation historically, very little information about how, in practical terms, each mine's intended pit lake option was to be achieved has been included in either the original work plans or the variations to them. Despite this lack of detail - and we cannot emphasise the importance of this enough - the regulator has approved each original plan and a number of variations. That throws up a very important matter, and it is this: we do not submit to the Board that the mines have failed to meet their legal obligations in relation to this area. In fact, they have, and that's the problem: the legal obligations are so minimal. It is a minimal compliance regulatory scheme under which the mines do what they have to do. Take a simple example. Each of them was asked, "Have you had a discussion with the water authorities about getting access to your existing entitlements for rehabilitation?" And the answer in each case was the same: "No." "Why not?" "We haven't had to. We'll do it if the regulator tells us we have to do it." That's paraphrasing, obviously, but that's really

symptomatic of the entire regulatory scheme. It is a minimal compliance scheme, under which the mines, understandably enough, as private companies, do what they have to do. It stands in stark contrast to other regulatory regimes - Occupational Health & Safety is an example that comes to mind - under which a person has to do what is reasonably practicable, has to proactively manage risk rather than just doing what the regulator tells them they have to do. This is a very important aspect of the existing scheme. It shows that the scheme is quite out of date when measured against current and sound best practice regulatory approaches.

While flexibility may well be required in light of the uncertainties as to how these complex issues can be resolved, it is startling, we submit, that the documents have not contained details regarding the matters that we've spoken about. The issues identified above about water access, water quality and batter stability, it was conceded by Mr Wilson of the regulator, a very senior officer at DEDJTR, he conceded that they're not new issues; they've been around for a number of years. One stark example on the evidence of that is a licence condition that was imposed on Yallourn in 2011 to provide a review of its rehabilitation master plan regarding the feasibility of the pit lake scenario as compared to other alternatives, so the very matters that we're talking about were the subject, in 2011, of a condition imposed on Yallourn in relation to its licence. The purpose of the condition was, from the department's perspective, a laudable attempt to answer some of these longstanding issues. Yallourn complied. It provided the report, the condition 7 report. It is in

evidence. The report affirmed that there were clear advantages of the flooded option compared to the non-flooding option, but there were issues that required resolution, such as stability, water access and water quality. The document concluded with an invitation to the regulator to engage with Yallourn about these issues. I should pause there. That is, we would concede, an example of a mine being, to an extent, proactive about trying to resolve the issue. Mr Wilson of the regulator conceded that Yallourn was, through this document, looking to the department for some certainty, for example about access to water, in order for them to continue to work answering these technical issues. Despite what the letter said, despite Mr Wilson's evidence about what it clearly was inviting the department to do, Mr Wilson's evidence was the department did not provide any formal response to Yallourn. You only have to read the letter to appreciate quite how surprising that is. We submit this represented another missed opportunity by the regulator, one of many, to begin to tackle some of these important and intractable issues. What is so perplexing about this particular story concerning the condition 7 report is the process was initiated by the department, so the department required Yallourn to get the report. One suspects the report wasn't cheap, but nothing flowed from it. Nothing tangible happened. It is just another report available to produce to an inquiry four years later. And whilst Yallourn was, to some extent, proactive, the evidence of Mr Mether was that they have monthly visits from DEDJTR inspectors, but there is no evidence that this issue was ever raised with any of them. No-one was ever asked, "By the way, did you

get that letter? Are we going to get a response? Can we have a meeting?" There is nothing stopping Yallourn doing those things. It is not appropriate, in relation to these matters, to just sit back and say, "We sent in the report, we asked for a meeting, we heard nothing." Both Yallourn and the department, we submit, are at fault in the context of that situation. But Yallourn is not breaking the law; Yallourn is just doing what it was required to do. It was required to produce a report, so it did. But the report doesn't answer anything; it merely initiates it, or should initiate a process.

Another example is the SWS that we've already spoken about, the Sustainable Water Strategy 2011. We noted earlier that it raised the spectre of a lack of viability of the option of filling any of the lakes because of water. Dr Davis, a senior officer from DELWP, gave evidence that she agreed with that observation, so it was in the SWS in 2011 and the Board heard in 2015 Dr Davis agreed about concerns about viability.

On the same page of the document there is an action, 6.8 - it was referred to in the evidence. It required what is now DEDJTR to review mine rehabilitation strategies in consultation with what is now DELWP, the EPA and the companies. Mine closure and restoration strategies will consider impacts on Gippsland water and surface water resources. Yet again there was no action - no action by DEDJTR; no action by DELWP; no action by the mines. This is despite there being a statutory obligation in the Water Act imposing on DELWP a requirement to report annually on measures taken to implement the SWS and to identify priorities that apply to actions required by the

implementation plan.

There is no doubt, on the evidence before the Board, that DEDJTR knows about action 6.8 because it is referred to in the conditions that have been imposed on AGL Loy Yang very recently, December of this year. Condition 7.1 requires AGL to perform a water resources risk assessment in accordance with action 6.8. I'll just pause there for a moment. So what started off as an obligation on the government departments to do something involving the mines has morphed now, four years later, into an obligation solely imposed on the mines.

Despite Mr Wilson's evidence that that is not how we should read it, it is not a delegation by DEDJTR of its responsibilities, it appears to us to be exactly that. We submit that is an abrogation of the regulator's responsibility. It is not a trivial matter, of course.

The department have also ignored expert advice indicating the need for a rehabilitation framework and strategic plan to solve these problems. In June 2009 a GHD report was provided to the department which identified these needs. There are in evidence other reports that say much the same thing. The Board heard from Ms Burton, the director of Coal Resources Victoria, a unit within DEDJTR dedicated to long-term planning about Victoria's coal resources, really the very issues that the Inquiry is concerned about. She told us there's no plan. In response to a question from Ms Doyle, in which the following proposition was put, between June 2009 and 2012, all that's happened is there's been a restatement of the fact that there is a need for an overarching plan. Ms Burton agreed.

If those examples are not concerning enough, perhaps

the most significant example, we submit, is the lack of DEDJTR response over many years to the advice provided to it by its own expert advisory board, the Technical Review Board. If I could just pause there for a moment, we submit that the Board can glean from the work the TRB has done, both in its annual reports and in the evidence that has been presented by Professors Galvin and McKay, and also Ms Unger, the TRB, to use a colloquial expression, are the truth tellers in this entire sorry saga. They're the ones who've been raising the need for action, the need for consideration of these issues. The first example is that the TRB, established in 2009 really to address many of the very issues the Inquiry is concerned about, in its annual report in 2011 advised the department that the rehabilitation plans the department had approved are inadequate and based on presumptions. In particular, the Board identified significant uncertainties about stability in the work plans and highlighted, "The considerable study assessment, evaluation, implementation and ongoing monitoring with action plans are required." They advise that it will take time to develop, it will be a costly process. They said there was a need for steps to be taken immediately to begin an assessment of these issues.

Subsequent TRB reports have repeated these observations with an increasing tone of frustration. You can trace through the 2012, 2013, 2014 reports and we have set out the references to them in the footnotes. This year, in a report provided to the department only a month or two ago, the Board repeated those concerns, said that it had been raising these matters since 2012. It noted the elevated importance of rehabilitation as reflected in the

expanded terms of reference to the Board, and that was a reference to Ms Unger being reported.

The mines, too, have failed historically to address these issues. Detail has not been included in work plans that set out concrete steps the mines intend to take to solve the problems. For example, the current Loy Yang work plan variation, rather than set out criteria for dealing with water quality issues, instead indicates that AGL will develop water quality objectives and water level criteria prior to lake filling. When?

Significantly, each of the mines has submitted work plans and variations which rely on modelling for filling the pit lakes and include models which assume access to bulk water entitlements and ground water, and yet, as we have noted, none of the mines have indicated any formal conversations with the authorities to obtain an assurance that water can be accessed. As I noted earlier, the response to that essentially was, "We've never been required to, but if we're required to, we'll do it." This is most starkly seen in the evidence of Mr Rieniets, who acknowledged that AGL assumed it would have access to both its bulk water entitlements and ground water licence allocation, but the assumption is not based on any assurances from anyone in control of that water and that AGL had not sought to have discussed with government about that.

Further, the mines have traditionally operated in a competitive and siloed approach to research and knowledge which has negatively affected progression in knowledge development in this area. We note subsequently in our submissions that there are changes, pleasing changes.

Some positive signs of improvement. In 2015 there have been some commendable improvements in the way in which the department and the mines are addressing these issues. It appears, and we emphasise this, that all are genuinely committed to finding solutions. The Board can't conclude on the evidence that people are actively opposing a process of finding solutions. However, as discussed below, the good intentions are not being promoted and enhanced by the current system. The Board has before it Exhibit 37, a document entitled Earth Resources Regulation 2015-16 Action Plan. It is surprising that document was not provided with the various statements that came from DEDJTR but only appeared very late in the piece in the Inquiry. The document is an important one. It sets out a series of commitments to reform and improvement to the governance and performance of the regulator and also to legislative reform. The contents of this document and the degree to which implementation of its commitments ought to be viewed as likely to address various deficiencies is discussed in more detail below. For present purposes, it is sufficient to say the document clearly seeks to address many of the problems that besiege this area. The government should be commended for this reform process and - and this is another matter we emphasise - the Board should take any steps open to it to ensure that the commitments in the document result in actual reform, not just another action plan that some barrister is going to ask awkward questions about in five years' time.

It is plain from the way in which the recent Loy Yang Work Plan Variation of 2015 has been processed by the department that such reform is sorely needed. I just pause

there. It is not as if the examples that cause concern occurred a decade or two ago. We have current-day examples, particularly in relation to this application, that raise these concerns.

In approving the plan, which took over a year, the department imposed a set of conditions upon AGL aimed at addressing shortcomings in the plan. This, Mr Wilson explained, was part of a move of what the regulator referred to as requiring risk-based work plans, whereby the mine operator is required to identify risks and report them to the department. Under the conditions to which the approval is subject, timeframes, although broad and for the most part approximate, are set. However, these conditions do not, it is submitted, indicate a sufficient improvement to the regulatory system that is likely to ensure the answers to the significant questions we discuss above are achieved prior to closure. Firstly, as identified by Professor Galvin, the conditions are convoluted and lack clarity. You only have to read them to see why he said that. Secondly, there are no criteria to determine the robustness of the various risk assessments which are required. In other words, producing the risk assessment, sending in a document, is the outcome that is required by the condition in many respects. Nor are there any criteria to assist AGL to determine how it may satisfy the regulator that it has complied with certain conditions. A lot is left to the discretion of the department's secretary and the conditions.

In answer to this last criticism, Mr Wilson's answer was there would be conversations with the proponent to talk through each condition and lay out what the expectations

are. We would work through points where it was unclear. We submit that such a process lacks transparency, accountability and consistency among the mines. It is not a process that is well suited to assisting in the resolution of such significant issues. What it leads to is pragmatic compromise to meet the demands of the day. So, for example, Mr Rieniets will say, "We can't quite do condition 3 in the timeframe because of these other commitments", and a commitment is given that, "You can have a bit longer", but none of that occurs in a way that is transparent or understandable or, more importantly, has regard to the broader setting. It is a problem that is inherent in regulation by risk assessment.

Professor Galvin highlighted the importance of a strong regulatory process and structure. Each of the issues, such as failure to communicate about water or community engagement are, according to him, just symptoms of the problem. Concerningly, given his extensive knowledge about interstate practices, his advice to the Board is Victoria is a decade behind practice in mine approval processes. We note the transparency is highlighted as a "compliance principle" in the Exhibit 37 action plan and the document recognises the need for transparency guidelines and for publication of criteria, applications, reports submitted by mines and regulatory decisions. These commitments are long overdue but nevertheless must be commended.

Further, the action plan indicates the regulator is committed to drafting a guideline for providing clear information to industry about requirements under risk-based work plans. This is also overdue. We note that the

evidence discloses that there are interstate and overseas experience of such documents. Ms Unger referred the Board to them. It is important that, according to Ms Unger, you get the right people in the room when risk assessments are done.

Similarly, Professor Galvin provided the Board with an example of a recent approval from New South Wales. These examples, we note in 139, should inform the current regulatory review process. The identification of their merits by persons with the experience and standing of Professor Galvin and Ms Unger suggest they ought to be used at least as a starting point for the development of Victorian guidelines. There is, as I think Dr McCollough mentioned a couple of times, no need to re-invent the wheel.

A further recent example of the deficiencies in the current system is highlighted by the failure by the department to appropriately utilise the expertise available to it from the TRB in assessing the Loy Yang Work Plan Variation. The Board will recall Professor Galvin's evidence about being sent the application by email - midnight in New Zealand, I think he told us, and he was required to provide an immediate response. All that in the context of an application process that took in excess of 12 months to respond to. It is concerning, to say the least, that a regulator would use an expert of the eminence of Professor Galvin in that way.

Ms Unger was not provided with a copy of the draft conditions, despite having been appointed to the Board as a rehabilitation expert, based on her experience in the field.

Again, there seems to be some recognition of these issues in the action plan. We note at paragraph 141 of our submissions that page 4 of the action plan refers to a commitment that the Technical Review Board will provide more strategic advice to the government in response to technical matters, that is more high-level strategic advice, rather than dealing with day-to-day concerns. An expert panel will provide operational technical capability in areas such as mine stability and so on. I just pause there a moment. Counsel assisting submit the Board ought to be concerned about some evidence that was given by Mr Wilson earlier this week about the possible conflating of those two bodies, the possible conflating of the Technical Review Board with an expert advisory panel. We would commend the idea of an expert advisory panel. We would caution against any suggestion that it could replace or incorporate the work of the TRB. What is important about the TRB is its independence from government and its ability to report annually. For obvious reasons we consider, as we've spelled out in the submissions, that the existence of such a body on a continued basis is very important. An expert panel reliant on government for the next consulting job is in a very different position to the TRB.

A further recent example, we say at 144, or recent issue, is the demonstrated lack of communication between government departments on key issues such as water. The Board heard from a water panel of a DELWP representative and two regional water authority representatives and they told the Board that at no time had any of them been asked formally on their views on whether the mines will be able

to use their present water entitlements or be able to divert one or more rivers, so it is not just the mines aren't talking to the authorities; the authorities aren't talking to each other. Indeed, none of the water authorities knew how much water the mines were seeking, and despite recent correspondence and, for that matter, despite this Inquiry highlighting the concerns of these issues, the meeting that is referred to as "necessary" in that August letter from the water authority hasn't occurred. It is not even planned.

Mr McGowan, in response to questions about why the Loy Yang Work Plan Variation was approved in light of the concerns in the water authority letter, remembering that the plan was sent to the water authority asking for its input, the response comes back raising concerns about water access and then the plan gets approved anyway. Mr Wilson stated that, "Over time application of water from particular water authorities and particular companies changes, so at the end of mine life, I would have thought there would have been conversations with respect to the use of water and the use of entitlements and perhaps the use of those entitlements for other matters, including mine flooding." We submit that such a relaxed attitude ill-befits a regulator in such an important and complex area.

The Action Plan which we've referred to refers specifically to establishing and enhancing collaborative arrangements with other agencies such as DELWP. This is clearly required and long overdue. It must be noted, however, that these relationships already exist and the previous action plan, the SWS from 2011, appears to have

been ignored, and this is once again a matter we cannot emphasise enough. This government must ensure that the present commitments don't end up suffering a similar fate. The Board, of course, can help, albeit in a limited way, in the report that it produces, but at the end of the day it is the government that has to take heed, through its various departments, of the need for action.

A further present deficiency highlighted in the process of the recent Loy Yang Work Plan Variation is the lack of community consultation or transparency before it was approved. This has been a theme throughout each of the four aspects of this second Board of Inquiry. It has been the subject of a great deal of evidence, particularly in the health context, but equally importantly here.

The lack of consultation and transparency in relation to the change from a publicly accessible lake to one that would be fenced off and public access prohibited occurred despite it having altered that essential intention in relation to beneficial use.

Stakeholder engagement, or what Ms Unger, in her memorable phrase, described as "progressive rehabilitation for people", is a requirement of successful rehabilitation. The absence of it can result in final rehabilitation plans that can't be implemented. As Ms Rhodes-Ward, from the council, highlighted, "It is about us, you need to involve us." The joint expert panel referred to the importance of community consultation as a fundamental principle of successful rehabilitation. There is no explanation before the Board as to why this important change in the AGL plan was not conveyed to the community by either the department or by AGL before it occurred. Indeed - and we have to say

this - Mr Rieniets's response to questions on this, particularly in light of AGL's commitments in its community engagement plan and also in Mr Rieniets's third statement, the response to this question in the evidence appears glib. The lack of transparency is of concern. It needs to change.

It is also worth noting that Mr Rieniets's statement and oral evidence to the Board about the conditions recently imposed upon AGL as part of its work plan variation approval suggested a lack of transparency of process. Mr Rieniets confirmed that AGL's view was that the original work plan variation it submitted was adequate and sufficient, including as to rehabilitation, and that AGL will engage with the department to come to a resolution on these issues. Closed-door negotiations about legal conditions imposed by a regulator, particularly in light of the advice provided by the TRB and the water authority, is, we submit, inappropriate and not conducive to an accountable regulatory regime in this important complex area. It stands in stark contrast and calls to mind Mr Langmore's description that processes should ensure that a change of plans is part of a clear formal public process and not a matter of, as he said it, "striking a deal between a particular single department of a government and a particular private company". We share those sentiments. For too long such discussions have been shrouded in secrecy.

When is it exactly the committee was going to be told about the change to Loy Yang's work plan variation? But for this Inquiry, it might have been years before that came to light. There is no obligation for the community to be

told about such an important change.

The regulator's action plan includes a commitment to establishing a community advocate to support informed community participation in regulatory decisions. These commitments must be translated to processes embedded in the legislative regime and in guidelines in order to guard against back-room deals being done or, equally importantly, the perception that back-room deals are being done on matters affecting community. The commitment by Mr Wilson to at least provide some funding for the position is supported.

One very significant positive sign is the improvement in cooperation and knowledge shared by the three mines and some recent research initiatives in the area of stability. Professor McKay observed a demonstrated commitment by the mines to examining a number of these issues. Such research initiatives and increased cooperation is commendable. However, more needs to be done by the mines. A significant body of research is required to be undertaken. The results of each study must be shared. Although each mine indicated it is happy, at least conceptually, to work together and have coordination, each placed caveats upon integration based on the need for "elements to apply to us all" or "where there is common issues". Reports are not shared as a matter of course, despite a general recognition this could be mutually advantageous. The research body GHERG is not able to use information from the TRB without explicit permission of the mines. For too long the mines have placed too great an emphasis on commercial secrecy and sensitivity over issues that are for the common good. The evidence suggests a residual reluctance on behalf of the

mines to take the initiative in solving some of these questions. We have already referred to the evidence, "We haven't been asked to do that" or "We haven't been told to do that, so we haven't done it". It is the same minimal compliance concern.

Turning then to term of reference 10. Term of reference 10 makes reference to "rehabilitation liability assessments", a phrase which is not defined. We submit that the Board ought to conclude that is a reference to the schedule 19 assessments that are filed by the department. Schedule 19, regulation 35, requires each mine to provide on an annual basis an estimate of the current rehabilitation liability for the licence holder, and the Board will recall that in respect of each of the mines there was some apparent difficulty in being able to answer that question in the process over the last 18 months. Ultimately the 2015 reports disclose the estimates that are set out in paragraph 158 - that is Yallourn giving a range of $48-91 million; Hazelwood 73.4 million; and Loy Yang 53.7. In each case the licensee has provided evidence to the Inquiry about the manner in which it had calculated that estimate. Yallourn referred to reports that had been provided to it in 2001 and subsequently. Yallourn also drew the Inquiry's attention to a letter from Mr Mether explaining the range in the estimate, recalling that Yallourn is the only mine that provides a range in its estimate. We have set out an extract from the letter at paragraph 161. We note that it was a laudable recognition by Yallourn, in April of this year, that costing is difficult because of the level of uncertainties. There is only one uncertainty identified, and that is batter

stability, but just that one uncertainty pushes the range out, as can be seen, a long way, from $48 to $91 million.

We note at 163 that the Yallourn rehabilitation plan that is approved assumes the operator can access the bulk water entitlements and assumes connection to existing rivers. They are, of course, assumptions. As noted earlier, they may turn out to be incorrect. Although an allowance is made for possible expensive stability work, none is made for the eventuality that water may have to be purchased on the open market, and we submit that that alone raises questions about the adequacy of the estimate.

The Hazelwood estimate of 73.4 is based on what Mr Faithful described as detailed calculations and, indeed, the Inquiry has been provided with a large number of detailed spreadsheets in support of the calculations, but in the course of his evidence about the estimates, Mr Faithful made a number of important concessions. The same assumption about access to water is specified. Mr Faithful conceded that neither he nor GDF know if the assumption is well founded. We note at footnote 221 a concerning aspect of the evidence being the explanation Mr Faithful gave to the Inquiry about why the assumption is made that water will be available. He told the Board that it is based on "a discussion that we had, or one of my colleagues had, with Southern Rural Water which indicated that you could roll those water licences over for a period of 15 years". He explained in evidence he wasn't present during that conversation and it is notable that at no point has the Inquiry been told who this GDF employee was that was involved in the conversation, nor the level within Southern Rural Water of the person with whom the

conversation occurred.

Returning to Mr Faithful's concessions, he conceded that no work had been done to cost alternative sources of water and that work needed to be done. He told the Board that, as with the other mines, the costings are not done on a probabilistic basis but have included a contingency of between 10-20 per cent to take into account unknowns. The estimate does not specifically account for the risk of batter failure, but that is also allowed for in the contingency, and the current estimate makes no allowance for the sorts of research projects that GDF consultant, hydrologist Dr McCollough, prescribed in his report to GDF, and we note Dr McCollough's evidence that at least some of those costs ought to be properly accounted for as rehabilitation costs.

The conclusion we reach at 167 about the GDF estimate is that, in light of those concessions, there must be concerns about the adequacy of the GDF estimate.

Turning to Loy Yang, we note the evidence of Mr Rieniets that the estimate is based on modelling undertaken in the Loy Yang Power Mine Rehabilitation Whole of Life Cost Report - 2011 Update. That is attached to Mr Rieniets' report. We note it is labelled "draft only". Mr Rieniets couldn't explain to the Board why it had been given a draft report as the basis for the estimate. One only needs to look at it, and look particularly at the footer on each page of Annexure Q, to reach the conclusion, we submit, that it is a document of little worth in the current context.

Further, as is the case with the other mines, Loy Yang's cost estimate contains assumptions about water

availability which may prove to be unfounded. We submit in the circumstances that the Board ought to be hesitant to accept that the 2015 estimate submitted by AGL is adequate.

For completeness, we note the cost estimate that AGL has prepared to accompany its recent approved work plan variation is 112 million. It is based on a "close now" scenario and we note that Mr Rieniets describes the work that underlies this estimate as "indicative, based on a series of assumptions that are yet to be validated".

Before we leave term of reference 10(a), it is necessary to make some reference to s.79A of the Act. I noted earlier that the section empowers the Minister to require a licensee to undertake an assessment of the licensee's rehabilitation liability under s.78 for the purpose of determining the amount of a bond or reviewing the amount of a rehabilitation bond. Can I just pause there for a moment. It is a different process to the one mandated by the regulations. The regulations merely require the mine to indicate to the regulator what its current rehabilitation liability estimate is. 79A puts some teeth into that process by enabling, as we see from sub s.(2), that the Minister can stipulate the manner and form in which the work is to be done. The Minister can also, importantly, impose an additional requirement on the mine to engage an auditor to certify that the assessment has been prepared in the manner and form required by the Minister and that it is accurate. There is some rigour in that process that is completely lacking in the Schedule 19 estimate process. The provision has been in the Act since 2006. The evidence before the Board is it has only been used on one occasion, it has never been used in relation to

the Latrobe Valley mines. When asked why, Mr Pendrigh, of DEDJTR, told the Inquiry that it hadn't been used "because we couldn't specify the manner and form satisfactorily". Be that as it may, that is a section that clearly has a role to play, particularly in relation to providing the department with reliable information upon which to evaluate bond levels. We noted that as part of the current reforms, the department will set up an expert panel and it is looking at restaffing the regulator. The Board should recommend that that process include looking for expertise that will assist the department to set out the manner and form of s.79A assessments. For the reasons we set out at 175, the s.79A process seems to be an ideal mechanism which recognises that in truth the mines are best placed to assess their liability, but they ought to do so on a consistent basis as amongst themselves and they ought to do it on a basis which is properly based in the learning about doing such cost estimates, the manner and form requirements.

We noted at the outset that AECOM have been engaged in a process throughout 2015 in which it has been producing its own estimates of the mine's rehabilitation liabilities as part of the Rehabilitation Bond Review Project. We note that the AECOM team consists of highly qualified and experienced experts. We have set them out at paragraph 179 and their qualifications. They were asked by DEDJTR - this is at 180 - to provide an independent estimate of cost for closure for each mine based on the current approved work plans and assumptions provided by the regulator. The work was to be performed as a desk-top study and we summarise the limitations that the report sets out about not having

conducted site visits, not doing water modelling, not detailing closure data and so on. And we note that Mr Byrne, of AECOM, accepted that those matters operate as a realistic limitation on the work that was done.

The other matter to be noted at this point in time is that the AECOM costings are done, as I have indicated, on a different, that is third party costing basis, to the mines, and we set out an extract from the department's rehabilitation guidelines at the top of page 43 which provides a useful summary of that process and with which the AECOM witnesses agreed is an accurate description.

The AECOM process considered both end of mine life closure and early closure, as we note at 184. Importantly, there are two aspects of the AECOM reports that have to be borne in mind. At 186 we note that a range of assumptions are made. Everyone, of course, has made assumptions in doing these costings. That is so necessarily so. AECOM have spelt out their assumptions. There are 12, of which two are very important and we have noted them at 186. Final pit slopes of one vertical to three horizontal will have long-term geotechnical and erosional stability, and current power station bulk water entitlements can be used for void filling. The evidence is that they were assumptions that the department, interestingly, told AECOM to make. I say "interestingly" because of the uncertainty about both of those matters, as we have noted in these submissions.

In relation to water access, Mr Chadwick, of AECOM, agreed that if the assumption proved incorrect, it would have significant impact on cost. We would submit that the impact would quite clearly only be an increase in the

estimate. So, too, batter stability.

There is evidence before the Board about the methodology used by AECOM, the probabilistic costing model, which incorporated a multi-colour simulation. The advantage of that model, the Board, we submit, should find, is that it recognises variables in costs and tries to incorporate those variables.

Dr Bowden explained that the model is internationally recognised and he said it is becoming pretty well a standard approach to carrying out cost estimates. We note that the evidence ought to be given considerable weight by the Board in light of the matters set out at 192. However, we do make the observation that, generally speaking, as with all of these estimates, the assumptions in AECOM are generally optimistic. That needs to be weighed against the identification by AECOM in a, to some extent, transparent process of key risks in relation to each mine. They are identified in 4.6 and, as the reports explain, "If the assumptions in 4.4 are not correct, then they represent risks within the closure costing and have been incorporated into our closure costing as risk events and estimates of degrees of likelihood of occurrence and consequence." We set out four of those risks which deal with matters that we have referred to.

We submit the reality is that if any of those manifested, that is one batter failure at one mine, for example, this could have a very significant effect on the overall costing. The way that the costs to be allocated to the risks done in the AECOM reports is with a single figure. So to take Yallourn as an example, it is a single figure within a range from 18 million to 63 million,

depending on the confidence interval, and I'll return to the confidence interval aspect in a moment.

We note at 196 the evidence about how the team calculated the likelihood of each risk and the consequences that would flow is not entirely satisfactory. Dr Bowden explained that these assumptions were made by the team on the basis of what he called "expert judgment". He expanded on this theme when he referred to the team's reliance on a lot of experience and understanding of the situation. Unfortunately for the Board, the product of that experience and understanding is not revealed in the reports, as the AECOM team conceded. Mr Chadwick told us that the information is available but they couldn't tell the Board in relation to any particular risk what risk rating it was given, nor in relation to any particular cost how that was assessed.

We've noted earlier that there are confidence levels incorporated into the AECOM costings, ranging from level P50, optimistic, through to P95, which is described as very conservative. The evidence is that P50 means there is a 50 per cent chance the actual figure in real life will be more than the cost chosen by the model and a corresponding 50 per cent chance that it will be less. By contrast, if one goes to the P80 level, the odds are better; there is an 80 per cent chance the actual cost will be less, only 20 per cent more, and so on.

Using those confidence intervals, AECOM has provided in its reports for cost ranges for each of the three mines, and in relation to Yallourn it has done the work based on the current work plan variation as well. We set out those figures. I note that in relation to Yallourn, the range -

this is cost plus risk - is from 167 million to 262 million; for Hazelwood, 264 million to 357 million; Loy Yang, based on the now overtaken work plan from 1997, the cost was 175 to 303 million. Those costs increase in relation to the current work plan, from 221 to 319.

We note at 204 that the lack of transparency in these reports about the risk matter is an obvious weakness. However, even having regard to that caveat and recalling that they're third party costings, compared to the mine's first party costings, we submit that because they've used a probabilistic methodology, and because of the evident expertise of the team and the independence of the team from the mines, that the cost ranges provided probably the best evidence before the Board against which to make the judgment required by term of reference 10(a), and we say that the AECOM reports provide an added basis for concluding that the mines' assessments are less than adequate.

Turning to 10(b), the effectiveness of the current bond system, we note that once again there's no definition of "bond system" in the terms of reference, but it must necessarily, we say, include a consideration of the current bond levels. At present, as we've noted earlier, the bond levels are 15 million for Hazelwood and Loy Yang and 11.4 million for Yallourn. We note that in each case the evidence before the Board is that the bonds were set at the time of privatisation on an interim basis. There is scant evidence, somewhat surprisingly, about how the figures of 15 million were arrived at. The only evidence we really have is the evidence concerning the Hazelwood bond and even that is only really a single-page briefing note, but it

indicates that there was a current estimate at the time of privatisation of a liability estimate of 20 million, but it was discounted to 15 on the basis of an understanding that progressive rehabilitation was being carried out at the rate of a million a year. The licensee at the time put up an argument to the regulator that the bond should be set at the end of mine life cost. The briefing note records that bonds are usually based on an estimate of the worst case liability during the mine life, and that's been confirmed in the evidence before the Board, particularly from AECOM.

We note that the Yallourn bond was reduced to 11.4 million in 2004. That was done on the basis of a letter which has been produced to the Inquiry, dated 30 July - that should be 2004 in line 2 of 211 of the submissions - and the letter explained that the bond had been set on the basis of the need for further research, interestingly, into final land forms and hydrology and to address uncertainties. The letter said the department would be happy to initiate another rehabilitation bond review and to reduce the contingency allowance once the research has been undertaken and the uncertainties related to final rehabilitation are resolved. We note that whilst there has been no further review, despite the passage of 11 years, it is an indication, or one example, a unique one on the evidence, of the regulator attempting to use the bond to reward past behaviour, encourage future good behaviour and discourage future bad behaviour and they are, of course, some of the principles which have been referred to in the evidence as the 10 KPMG principles, almost elevated to commandments, it would seem.

For this reason, we submit the approach is consistent

with good regulatory practice and we'll come back to that in our proposed recommendations.

We note at 214 and 215 that DEDJTR has published guidelines that set out the regulator's proposed method of regulating the bond system under s.80. Interestingly, the evidence before the Board is to the effect that the way in which the bond system has been administered in relation to the three Latrobe Valley mines is completely at odds with the manner anticipated by the guidelines. We identify a few features of the guidelines at 215 - I won't go through each of them, but some are important - that is a commitment to periodically review bonds to ensure they remain at appropriate levels; to review bonds when a work plan variation is submitted; to calculate bonds to address in full the rehabilitation liability based on the work specified in the plan; to review bonds on the basis of existing rehabilitation liability at the time of the review, and to note that the Minister can require a bond to be reviewed at any time that the amount is considered to be insufficient or where a site inspection indicates insufficient progressive rehabilitation has been done.

We note at 216 that on the evidence before the Board, it is entirely unclear why these simple and sensible provisions have not been utilised in relation to the Latrobe Valley mines. It is particularly perplexing given that there have been significant work plan variations submitted and approved during the 20 years since privatisation and none of them have triggered bond reviews. Such variations have been in relation to each of the mines - Hazelwood in 2009, Yallourn 2011 and Loy Yang this year. Further, it is difficult to understand why the

rehabilitation liability assessments, with all their inadequacies, why they haven't trigger bond reviews. The department is provided with a document that has side by side the bond amount, 15 million, and the liability assessment - in the case of Hazelwood, 73 million. That alone, one would have thought, might trigger a bond review in line with the guidelines. It hasn't. We submit the gap between even those figures and the current bonds should have been ringing alarm bells to DEDJTR, that the 100 per cent protection the current system is meant to provide the state is entirely deficient.

One possible explanation before the Board as to this complete failure of the regulator to implement the guidelines is provided by an internal risk assessment performed by the regulator in 2015 and, we note, featuring on the front page of the Latrobe Valley Express yesterday. The assessment considered the risk of a mine licensee refusing to enter into an increased bond. The likelihood of this occurring, that is the licensee refusing to comply with s.80 of the Act, was rated as 50/50; as likely to occur as not. The assessment is part of the project plan which is attached to the first statement of Mr Wilson. We note it was approved by Mr McGowan, who was the head of the regulator, on 3 July this year, that is after the Inquiry's terms of reference were promulgated. There could have been no doubt, on 3 July 2015, that the project plan was likely to be the subject of scrutiny before the Board.

In his evidence before the Inquiry, it should be noted that Mr McGowan confirmed that he read the risk assessment before he approved the plan. He pointed out that he also took into account the mitigation measures. He

also told the Board, in answer to a question from my learned friend, Mr Attiwill, for the state, that the risks outlined in the document concern risks associated with this project and not matters generally. With respect to Mr McGowan, it is a difficult distinction to understand. The document makes clear that what the regulator was assessing were the risks associated with the implementation of the project, that is, would the licensees cop an increased bond, and the risk that they wouldn't is assessed at 50/50.

The failure of the regulator to implement the bond policy in respect of the Latrobe Valley mines in accordance with its own guidelines is all the more perplexing given the evidence before the Board about bond reviews and increases generally in the mining industry. There is a 2012 report before the Board, a parliamentary Inquiry, in which it is noted that bonds are periodically reviewed based on risk and amended to match the current liability of the site. The Inquiry goes on to note evidence before it that bonds had been increased some 67 per cent across the board per licence between 2000 and 2010 and we note that during the same period the only adjustment to a bond at three of Victoria's biggest mines was a decrease in the case of Yallourn.

The guidelines provide that the department will systematically audit a proportion of the rehabilitation liability self-assessments for quality assurance. There is other evidence before the Board about the importance of audits. However, there is no evidence that there's ever been an audit in relation to the three biggest mines in Victoria.

Term of reference 10(b) requires the Board to make an assessment of whether the current bond system is or is likely to be effective, particularly having regard to being one of the measures to promote progressive rehabilitation. We submit, in summary, that it is really asking the wrong question in a way. Bonds can play some role in relation to promoting progressive rehabilitation, especially if one considers that concept as trialling methods for final rehabilitation.

And we note at 228 that understood in this way, a properly administered bond system could play a part, among other measures, in encouraging progressive rehabilitation. We note that implementing the guidelines that are there at the moment would be a good start.

We submit the Board should caution against the view that a bond system alone can do a great deal to encourage progressive rehabilitation. The evidence of Dr Gillespie is important and one should not try and get a bond to do everything and that different things require different mechanisms.

In conclusion, we submit that a properly administered bond system with periodic reviews of bond levels, where they're based on accurate liability assessments prepared under 79A of the Act, can be an effective means by which the regulator encourages and incentivises progressive rehabilitation in the broad sense explained by Ms Unger and we conclude this part of the submissions with a reference to a quote from Ms Unger about bonds and the role that they can play. I won't read that.

Conscious of the time, I'll turn to 10(c), Alternative Financial Assurance Mechanisms, which I can

deal with briefly. Our primary submission in this regard is that it is premature to consider alternative mechanisms in circumstances where the existing conventional bond system hasn't been properly utilised and implemented, as we've set out above. Having said that, there is one alternative mechanism in the evidence before the Board which is worthy of serious consideration - that is implementing a trust fund which (a), extends beyond the Loy Yang Mine and (b), is brought forward in time. At the moment the Loy Yang complex agreement is a trust fund where contributions are due to commence in 2023, and we have dealt with that at paragraph 235. The advantages of trust funds are set out in 233. I don't read those, but they are, generally speaking, quite obvious, and we submit at 238 to the Board that, for the reasons explained in the Accent report, a trust fund based on the Loy Yang complex agreement model, but appropriately adapted so it would apply to all three mines, should be implemented, extending to the three mines and requiring contributions as and from 2018. We've chosen that date to bring forward the 2023 date, but also to provide some time for the very important consultations that would need to occur between the government and the mines about the precise details.

We don't rule out any consideration of alternative mechanisms, but we do note that under the Environment Protection Act, there are alternate mechanisms available which, by and large, have not been used, for the reasons Mr Webb explained, and in summary we caution against change for change's sake.

Before leaving this topic, I should briefly note the submissions that I anticipate the Board will hear from the

mines about a risk-based approach, that is an approach to setting bonds that takes into account in a real sense the risk of the state being left with the liability and doesn't focus entirely on the amount of the liability, the risk being focused on rather than just the consequence. The approach finds favour in the evidence of Dr Gillespie and we have noted what the relevant risk is. We point out to the Board that there are a number of difficulties, on the evidence, with the regulator implementing such an approach and we've summarised what those problems are at 243 and we say on the evidence before the Board, that the difficulties of doing it outweigh any advantages. Certainly the advantages would only seem to be advantages flowing to the mines and there's not a great deal of advantage in such a mechanism from the point of view of the regulator.

If I can turn then to the conclusions that we make, starting at paragraph 244. For the reasons outlined above, we submit the Board should make the following findings in relation to terms of reference 8-10 and also 12. A. The options are a pit lake, fullback fill; partial backfill above the water table; partial backfill below the water table; lined void and rehabilitated void. (B). Filling each of the three mine voids with water to varying degrees will be, based on what is known in 2015, the most viable rehabilitation option for each mine. C. Whether filling one or more of the mine voids with water will be in fact viable at the time the mines close is currently unknown, as it depends on whether solutions are able to be found to the following complex questions and at what cost: (a) can each site be made safe and stable, both during filling and after the preferred water level is reached, (i) so that internal

and external site infrastructure and surrounding waterways are not adversely affected and, (ii), so that beneficial use of the pit lake may occur; (b), can the water quality for each lake be ensured; (c), can the quantity of water required for each lake be sourced?

In the absence of answers to these questions, the Board is unable to determine, in relation to the pit lake option, the questions asked of it under paragraph 9 of its terms of reference. The Board is unable to take into account the outcome of the Rehabilitation Bond Review Project because the government has not yet completed it. However, the Board is able to take into account the information obtained from those parts of the project which have been completed. F, the purpose of a bond or other type of financial assurance is primarily to provide security to the state in the event that rehabilitation is not done and also to incentivise progressive rehabilitation. G, the rehabilitation liability assessments by the mines do not sufficiently account for the cost of rehabilitation in light of the uncertainties identified above at C, nor the cost of research to resolve the uncertainties. In this sense, they are inadequate. The bond system would be more effective if the regulator conducted periodic reviews of the bond levels of the Latrobe Valley coal mines as required by its published guidelines. Those reviews will be more effective if they are informed by accurate and reliable assessments of the rehabilitation liabilities of each of the mines and to this end we make recommendations about the use of s.79A as the basis.

The glass may be half full. The Board has heard

evidence that a number of experts are optimistic that with concerted and coordinated effort and advancement in scientific studies, it will be possible in the future to answer the questions the Board is, we presently submit, unable to answer. The evidence included Professor Galvin, who told the Board that we're well ahead of the game now to where we were six to eight years ago in relation to stability questions. He also opined you can engineer anything if you throw enough money at it, and that is reminiscent of Dr Haberfield's evidence. Professor McKay, who said, "I'm confident we'll achieve a solution." Professor Sullivan noted, in his opinion, AGL's started on the journey to progress the state of knowledge and we make reference to Dr Haberfield and Dr McCollough's optimistic observations.

In order to maximise the likelihood of answers being found, for the reasons set out above, the Board should find that identifying solutions to these questions requires the matters we have set out in 246, including research, coordination, accountability, transparency, community consultation. For the reasons already explained, the current regulatory system is ill-equipped to solve these complex problems. It is submitted the Board should find that the issues surrounding rehabilitation have been neglected and ignored by the regulator and the mines. The Board should further find that there have been positive signs of improvement, although these good intentions are not being promoted and enhanced by the current system. It is fundamentally important that the problems identified are resolved so that the conceptual plans can, in due course, become operational. This requires reform of existing

regulatory arrangements and it is here that the action plan submitted to the Board by the regulator is important. However - and this is a very important observation that we make to the Board - in light of the regulator's past performance, as illustrated in the examples we have set out in these submissions, the commitments in the plan must become embedded through a process of legislative reform, guidelines, increased and improved staffing and cultural change. The Board should recommend that the legislative review referred to in the action plan should consider whether the Act or the regulation should be amended to address the matters that we set out at paragraph 250.

At 251 we summarise our recommendations about the use of s.79A, including the timeframes in which the process ought to occur. The starting point is for the regulator to develop the methodology that the Minister can specify under the manner and form requirements.

The last topic I want to address is the question of oversight coordination. There is considerable evidence before the Board about the need for some overarching or coordinating mechanism to monitor, review and engage. There is evidence in particular from Ms Cameron, on behalf of Jacobs, about mechanisms that are in place elsewhere that might be able to be adapted for the purposes of the Latrobe Valley coal mines.

The Board has also heard of the extraordinary achievements of the agency overseeing the rehabilitation and closure of Germany's coal mines and we note that an enormous engineering and environmental project has been driven and overseen by a joint Federal and State body dedicated to the task. It has spent 10 billion Euros in

the process. However, at least at the present time, we submit there is no need for a Victorian equivalent of this agency. This may change as we get closer to the time of closure.

For the reasons explained in these submissions, we submit the Board should find that there is a present need for a coordinating structure to exist outside of government which ensures the matters we have set out at 257, including the development of an integrated rehabilitation plan for each of the mines, all of the mines, a matter which we perhaps haven't addressed enough but is identified in the joint expert report as important. We note that there are different models available. We try to summarise relevant considerations. We refer in particular to the concept of having a commissioner for the rehabilitation of Latrobe Valley coal mines at 261. It may be that, just as we don't need a bells and whistles agency, that it may be premature to have a statutory officer of that type. That is a matter for further consideration by the Board.

We note at 262 an alternative coordination and oversight mechanism would be to recommend to the government that the period for the Hazelwood Mine Fire Inquiry implementation monitors' role, which is due to end in 2017, be extended at least to 2020 so that Mr Comrie, or whatever holds that role in the future, can oversee the implementation and findings of this aspect of the Inquiry and can adequately monitor them to the standard that has occurred in relation to recommendations from the earlier Inquiry.

We finish with a reference to the evidence Ms Unger gave in response to a question from Professor Catford about

whether there is cause for optimism. She told the Inquiry there is a place for these recommendations, that is the recommendations through this Inquiry, to have a life. "There is nothing worse than reading other inquiries if something hasn't been followed through." Ms Unger emphasised that, "It is everyone's responsibility to carry this forward. Everyone has a part to play. The more that do get engaged in the issue in a positive way, the more likely you will have a good outcome."

This Inquiry is uniquely placed to make findings and recommendations that promote those laudable objectives and they are the submissions on behalf of counsel assisting.

CHAIRMAN: Thank you, Mr Rozen. Is it appropriate that we now take a short break?

MR ROZEN: I would certainly appreciate it and I'm sure others would, too.

(Short adjournment.)

MR ATTIWILL: Mr Chairman and Professor Catford, the state acknowledges the Inquiry's important work in investigating the complex issues surrounding rehabilitation of the Latrobe Valley coal mines. The state reopened this Inquiry to investigate the current and potential future options for mine rehabilitation. This Inquiry is an important step in exploring the options for more comprehensive rehabilitation planning and policies. The Inquiry has heard the community's concerns regarding mine regulation and given the community a voice on mining rehabilitation. The state has already begun addressing issues that have been identified in the current mine rehabilitation policies and processes. As you have already heard, the mine regulator, Earth Resources Regulation, has an action plan which

outlines the state's vision for a more effective regulator with a designated community advocate. The state is also committed to improving the technical expertise of the regulator. A mine fire safety unit is being established within the regulator to provide advice on fire safety within coal mines. The terms of reference for the Technical Review Board have also been amended to include rehabilitation and, as you have heard, Ms Corinne Unger, a rehabilitation expert, has also been appointed.

An external technical expert panel is also being established to provide operational technical advice on mine stability, water and chemical risks. This expert panel will deal with operational advice, allowing the Technical Review Board, or TRB, as it has been referred to, to focus on more strategic advice to the state. The state is also committed to implementing all affirmations and recommendations of the 2014 Hazelwood Mine Fire Inquiry report. Several affirmations and recommendations specifically concern the need to address the risk of mine fire responding to community concerns about potential future events. Government actions to implement these affirmations and recommendations are part of a broader reform policy to improve the regulations of coal mines.

In response to the 2014 Inquiry report, the state recently amended the Mineral Resources Sustainable Development Act 1990. One of the purposes of the amending Act was to enable the Minister to set conditions on a licence or extractive work authority for the purposes of eliminating or minimising risks. A new licence condition requires each mine in the Latrobe Valley to produce a risk assessment and management plan, sometimes referred to as a

RAMP, which identifies risks to the environment and public safety posed by the mine's operation and the work being done to minimise those risks. The regulator is presently working closely with the Latrobe Valley mines to finalise those RAMPs. The new licence conditions and those RAMPs will improve safety at the three coal mines in the Latrobe Valley for the 2015-2016 summer season and provide assurance to the state and the community, particularly the Latrobe Valley community, that risks are identified and managed in the future.

In further response to the 2014 mine fire Inquiry report, the state has also established the Coal Mine Emergency Management Taskforce, led by the Emergency Management Commissioner. That has brought together government departments and agencies with the operators of the Latrobe Valley coal mines. The task force has successfully provided a forum for the determination and coordination of emergency management priorities for the Latrobe Valley. This increased integration has allowed the state to build strong networks between departments and agencies and with the mine operators. The state has recently announced that the task force will be extended until September 2016, which will help provide assurance to the Latrobe Valley communities that the government and the mine operators will continue to work together to address risks over the current summer season.

In conclusion, the state is committed to considering all of the Inquiry's recommendations and establishing an appropriate monitoring framework.

Mr Chairman and Professor Catford, those are the submissions of the state.

CHAIRMAN: Thank you, Mr Attiwill.

MS NICHOLS: Mr Chairman and Professor Catford.

CHAIRMAN: Yes, Ms Nichols.

MS NICHOLS: Environment Victoria intends to provide detailed written submissions, so there are matters of detail that I don't need to go into today. A lot of what we will have to say will echo what counsel assisting has said in their written and oral submissions and I don't need to repeat those, but I will indicate Environment Victoria's position and the basis on which we say the key recommendations we submit the Board ought to make is supported.

Before addressing some particular topics, I would like to mention what we say are some overarching themes and issues that ought to inform the Board's consideration of the more technical issues. The first one is really an obvious point, and that is what happens with the Latrobe Valley brown coal mines is an inter-generational issue and it is of very great importance to Victorians. The period of time over which rehabilitation will occur is obviously a very lengthy one, but the reality is that window within which one can make sure that the policy settings are correct and robust is in fact very short. Hazelwood Mine, for example, will close in 11 years, or in 18 years if its licence is extended.

The second theme is that in that context there are a number of significant facts to which I will allude which justify the Board making strong and indeed bold recommendations, despite the fact that some of the key issues raised in the Inquiry are complexed, nuanced and highly technical.

The third theme is that because of the significant

adverse legacy mining operations will leave on the community if rehabilitation is not managed properly, it is appropriate, in our submission, to approach this issue through a conceptual paradigm which accepts that a literal legal licence to extract minerals carries with it a social licence which permits the activity, on the condition that the Victorian community is not left with the risk and burden of rehabilitation at the end. That thinking is evident in the Mineral Resources Sustainable Development Act in the requirement for rehabilitation, including progressively in the requirement for a bond and in the requirement in s.39 for consultation.

The next theme is that community engagement has been discussed extensively, including in questions raised by us. We do not submit that the community should control any aspect of the rehabilitation process or indeed that the interests of the mine operator should be disregarded. We do say, however, that what has been missing and what needs to be injected into the process is a means of ensuring equality between stakeholders. We don't mean to say by that that all stakeholders have the same kind of role to play or can make the same kind of contribution or have the same function, but engagement on critical issues at critical junctures must be real and not consist of a one-way dispensing of information from mine to community, and the critical mechanism for ensuring that that occurs properly, we submit, is by the establishment of an independent body. There are also numerous other mechanisms through which that can occur which I will address.

The fifth theme is that strong regulation is essential and has been lacking. There are some encouraging

indications but history teaches in this area that good intentions and broad commitments are not enough to effect change. They need to be supported by measures that will inject independence, rigour and transparency in mine regulation. We do make some concrete suggestions about this.

Finally, there's been quite a lot of discussion in this Inquiry about risk in different contexts and I just want to say some words about that. Risk management processes are now mandatory in regulation, which is to be applauded, but it is instructive to recall the observations of Professor Cliff made in the 2014 Inquiry, which appears at transcript 2087, about the differences between processes in documents and actual risk mitigation. Professor Cliff said this, "Now, controls are actions, barriers that prevent or mitigate the event. They're not things like a piece of paper or a plan. They are a firefighting system, automatic controls, they are evacuation self-contained rescuers. They are things you can identify as being able to control something." It is not submitted that the risk management documents in evidence created by the mine operators do not represent actions that are occurring in the real world. However, it is particularly important for the regulator who is embarking on a risk management-based system of regulation, to be able to critically interrogate what is actually happening with risk control and not to limit itself to a paper system or desktop review process. This calls to mind in a slightly different context the observations of Professor Galvin in relation to the Loy Yang work variation application that the proponent may well have answered the regulator's questions correctly but

the questions were meaningless. Processes are, of course, necessary but they are not a substitute for independent scrutiny of rehabilitation work.

Next in relation to risk, it must be looked at holistically. Setting the standard of what is an acceptable risk is itself a value judgment. In the context of the bond, we will make the submission that it is not merely a question of economic efficiency and, to the extent that it is, that is a much more complex issue than was presented by the mines in this Inquiry.

There was a discussion about risk setting in the context of the rehabilitation expert panel, and I'll just remind the Board of an exchange that took place between Mr Rozen and Dr Haberfield. Mr Rozen said, "At one point I think, by analogy with the road toll setting, there was a question of how much the public is prepared to pay for the level of risk that is present. I suggest to you that in the current setting it is not actually how much the public is prepared to pay, it is how much the mines are prepared to pay, isn't it, that determines the level of risk that the public is exposed to?" Dr Haberfield said this: "For operational it is up to the mines to assess the level of risk but once you go beyond operation, and if this becomes public land, it has to be the risk the public is willing to accept. The mine has gone, so that level of risk to be set some time now so that mine closure can work towards that. It is not for the mine to decide that because the mine might say, 'We are going to put up fences, no-one is allowed in,' the level of risk, no-one is at risk; therefore there is no risk. That might not be acceptable to the final land use. The community might say, 'We want

to have access to that land.'" "Does that really point to the importance again of engagement and involving the community in these decisions?" Mr Rozen asked.
Dr Haberfield replied, "It points to the importance of including all stakeholders and the community is one of those."

The question who decides what is the tolerable level of risk and how that is decided draws together some threads in the evidence in this Inquiry. Carolyn Cameron of Jacobs had this to say at page 15 of her report, "Collaborative planning and research is needed to understand ... (reads) ... and what are appropriate short, medium and long-term risk controls."

That is a hard outcome to achieve and we submit the key to it is that the risk question has to be asked iteratively and often in the context of transparency and collaboration.

Can I turn now to some specific topics. The first one is regulation and Environment Victoria agrees with counsel assisting that there have been some significant regulatory failures, the most stunning example of which is the failure to review the bond in the 20 years since privatisation. A simple chronology of the events concerning the bond reveals what counsel assisting, in our respectful submission, correctly calls an "egregious failure of regulation".

As counsel assisting also point out, there is a very good and clear policy. It is set out simply in the 2010 DPI document. There is also a reasonably robust legislative regime. The problem is it just has not been used. It should be enforced. Other regulatory breakdowns

include the continued approval of work plans which maintain a high level concept review of rehabilitation. Despite the fact that it is demonstrable that this is an issue of enormous significance which is very complex, it is startling that it could have been ignored for so long by the regulator.

On the question of work plans, the approach to the Loy Yang plan is telling. Mr Rieniets thought the plan was good without conditions and there's no reason to suggest that that is not a genuinely-held view. Professor Galvin, of the Technical Review Board, said it was "significantly flawed", and so obviously in some respects that it ought not to have passed a regional office review. It was sent to the Board in a wholly unsatisfactory manner. The result was the imposition of conditions that we accept embody good intentions but leave yawning gaps in the process which has not itself even been developed at this stage. It leaves far too much in the hands of the mine and, as this particular example demonstrates, the mine operators must obviously be involved in the formulation of these plans but they are not the entities who should make the decisions about whether they are rigorous enough. The process must thoroughly scrutinise what is developed by the mines.

A next very significant failure has been in relation to water sourcing and I won't add to what counsel assisting has said about that. The simple point is that in regulation, the regulator has to lead. These failures point to the need for independence, technical rigour and transparency that needs to be embedded into the regulatory process. An interesting point here is that whilst it is clearly apparent that the Technical Review Board consists

of highly qualified, wise, experienced and truly independent advisors, when plain advice from a body consisting of people of that calibre is ignored, and repeatedly so, one must conclude that there is something about the regulatory process which must be fixed.

Counsel assisting have referred to negotiations occurring behind closed doors and cite the example of the change in end of life mine concept for the Loy Yang plant obviously ought to have been the subject of public notice and engagement. I will turn to this. It is not necessary to resort to conspiracy theories or to suggest bad faith, which we do not, to conclude that a regulator can become captive to industry when the regulatory attitude remains lax for a long time and when there are a small number of players in the industry. A telling example of this is the mine management risk analysis in the bond review project, which indicated as a significant risk that the mines would not agree to provide an increased bond. The real solution to that was, of course, that there is power to require it.

Having said all of that, Environment Victoria acknowledges that there have been some positive signs of change and applauds the review of the Earth Resource Regulation model and in particular the 2015-2016 action plan. The appointment of a community advocate, an external expert panel and the stakeholder engagement approaches are all very positive developments. As we've said and as counsel assisting has said, those plans and commitments need to be embodied in very concrete processes.

What is required, as counsel assisting say, is a step change.

Can I turn to the topic of work plans and the need

for clear criteria. There is, to state the obvious, a need for work plans to develop clear objectives and criteria and performance standards for regulation. Mr Wilson, for the department, accepted it was a valid criticism by the Technical Review Board that the government had failed to set detailed performance criteria and rather the proponent was left to set them. The evidence of the mine panel was somewhat diverse on this point. Mr Mether said, "We would be happy to have milestones," whereas Mr Faithful and Mr Rieniets considered that they already did. I needn't elaborate now, but in our submission, the milestones in the existing work plans fall woefully short of what is required. The evidence of Ms Unger was compelling on this point, that there needs to be mechanisms, targets, very measurable requirements which are transparent. It is obviously an important point for progressive rehabilitation and it has a connection to the bond. If that is ever to provide a role, an incentivisation role, it can't work unless there are very clear targets which are measurable and the difficulty with the current system, if you take the Loy Yang plant as an example, what is proposed and now required for progressive rehabilitation is simply that a certain number of hectares be rehabilitated by a certain date. There is nothing in the plan about how that is to be done and between dates that span eight years at a time, there are no interim milestones, so that does not work as an effective mechanism. The criteria, obviously, need to be developed by government.

In relation to the final concept plan, there are numerous things that need to be taken into account that I needn't elaborate here - stability, water quality and so

on - but in relation to community engagement, as Ms Unger said, one needs to get the science right, but one also needs to engage the community, and that can result in a chicken and egg situation because you cannot have the community saying that they want something that is not technically possible. Again, the answer to that is to have an iterative process which is managed by an independent body which ensures a quality of engagement.

Mine life concept has to be regularly reviewed once the science has developed and questions asked and put to the community in an engagement educative process so that there can be input once the technical solutions have advanced.

On the question of how conditions should actually be managed, Professor Galvin provided the Board, at Exhibit 26, with an example of some conditions imposed in New South Wales under the Environmental Planning and Assessment Act. I won't read those, but I will point out the features of them which are important. They are clear and easy to understand. One of the conditions provides a requirement that the Rehabilitation Management Plan must include a program to monitor, independently audit and report on the effectiveness of measures and progress against detailed performance criteria. Another condition provides that the final void and mine closure plan must be subject to independent review and verified by suitable independent persons whose appointment has been approved by the director-general and so on. I simply mention those to echo the comments of Professor Galvin that regulation in this area is quite considerably behind where it is in other states.

On the question of notice of work plans, we are giving consideration to the question of how regulation of that topic might sit with other regulatory regimes in the state. We agree with the observation made by counsel for Loy Yang the other day that the way in which regulatory regimes fit together needs to be considered. We don't consider, however, that that is a topic which is too technical or beyond the reach of this Board and we intend to make some written submissions about it. I think the short point is that where a planning permit is required, which is not the case for these mines, or where there is an environmental effect statement required, there is a process which mandates notice to the public and the opportunity for the public to object and participate and for a review to happen by an independent panel.

Mr Wilson's evidence was at a level of generality but it was to the effect that it was intended with the new action plan to allow a process whereby the community would have an input rather than just being told what would happen. We'll make some submissions on how a structure that allows that might sit with the existing regulations in our written submissions.

Can I say just a few words about water. Environment Victoria submits that the question of water availability is so uncertain that it genuinely calls into question whether the pit water body solutions are really the only viable end concepts. We accept, as counsel assisting say, that one must start somewhere but, unfortunately, that is of itself a very unstable starting point. Dr Davis told the Board that the issues to consider in relation to the provision of such a large quantity of water relating to diversions

included social amenity and landscape values, environmental impacts and the fact that the Latrobe Valley water system is fully allocated. There would also be impacts on off-site users to consider and Dr Davis agreed that downstream users should be consulted.

Mr Rodda said that climate change was one of Southern Rural Waters' top risks and that, as climate change impacts further, Southern Regional Water expected that there would be reduced water sources. All of these things are fairly obvious statements and they're acknowledged in the SWS. Mr Mether acknowledged that there would be a certain amount of expectation that climate change would bring more severe weather events and this may result in less water overall.

Environment Victoria submits that the Board should make recommendations in relation to the availability of water along these lines: first, action 6.8 of the Gippsland regional sustainable water strategy be fully implemented with annual public reporting that focuses specifically on the progress made on this action. Next, as an extension of the implementation action 6.8, Delfin Regional Water Authority should carry out an assessment of possible scenarios for filling the mine pits with water. Next, that those scenarios should include different rates for filling pits and using different sources of water. Next, the assessments should include the impacts on water quality and quantity as it affects the environment, including ultimate outflow at the Gippsland lakes, downstream consumptive users and the catchment generally. Further, that the effects of climate change on water availability should also be assessed in this context, including possible changes in water demand within the

catchment as water availability changes in other parts of the state. Part of that process should involve consultation with affected parties, obviously, and relevant stakeholders. The outcome of the assessment should, in our submission, be included in the annual report on progress towards completion of action 6.8.

There's been mention of the cost of acquiring water on the open market. That is not a fact which is in evidence, but that's obviously a consideration which needs to be taken into account in future assessment of rehabilitation costs. This is not a subject which was able to be explored in great detail, given the limited time the Board has, but this issue is not just a matter of rolling over licences or even being able to pay for it. There are significant environmental considerations which relate to the very availability of water. We submit that the Board should recommend that DELWP and the water authorities cost each scenario on the basis of market rates for water because that may become necessary if indeed it is possible.

Can I turn now to the question of the role of an independent body. There is, of course, in our submission, as counsel assisting submit, a need for an independent body and we say the purpose of which is to inject independence, transparency and accountability into the regulation of rehabilitation, of course without duplicating the work of the regulator, and its purpose should also be to facilitate stakeholder engagement. We accept it may ultimately be the case that that body is separate from and has different functions from a technical advisory body, which, as counsel assisting say, may be itself separate from the Technical Review Board. I don't intend now to make detailed

submissions about what the structure should look like, we simply say this: it is critical that the body be independent of government. It is also critical, in our submission, that it have clear legislative support. We note the evidence of Carolyn Cameron that different structures might be appropriate at different stages, but the problem with a self-governing model is that very quickly one will get to the position where different stakeholders have very different views and there is a need for very rigorous coordination which, we submit, a self-governing body will not be able to undertake properly.

The new body should have, as a critical requirement, expertise in facilitating effective community involvement. It is clear from the evidence that proper community engagement and stakeholder participation - which is a bit of a different thing from consultation - it is not to say that there is not a role for the mines to dispense information or to consult, but what I started with was the notion there should be a quality of participation and that is going to require some expertise. It is also going to require an understanding of the iterative process by which the end of mine life concept is developed and it is necessary to hold in tension a number of things, 1, that science is developing and the understanding of what is possible and appropriate will change and develop; 2, there are needs that the mine operators have to accommodate; 3, there is evolving and changing community expectations. It is going to require some special skill to engage all of those three and to do it on a continued basis, and that is a role that the new body should take on in a very substantial way, in our submission.

It is clear that a critical element in this is who is in charge of it and the Board has seen some examples of some particularly outstanding leadership and I don't really need to mention who they are, but I think it is obvious. If the right people are appointed to lead the body, it will work out.

Can I make a submission about why we say Coal Resources Victoria is not the appropriate body. The evidence is clear that trust is needed and in particular the trust of the community, and that will encounter difficulty if Coal Resources Victoria is appointed because, as the documents attached to the witness statements show, Coal Resources Victoria's main objective is to develop the coal resource, and that is not consistent with starting from a neutral position and developing good rehabilitation outcomes. Mr Wilson said in evidence that it would be challenging for CRV to play an arm's length coordination role because it was set up with the objective that relates to coal development and has never had a mandate to do other work.

Can I make some comments now in relation to the bond. It is obvious that presently the state is exposed to the massive shortfall between the level of the bonds and the likely cost of rehabilitation, whatever that might be. The current bonds do not comply with existing Victorian policy, which has not been enforced. It was accepted without demur by Mr Wilson the purpose of the bond policy is to protect the state from liability in the event of default and that the best way - sorry, I'll restate that. That was accepted by Mr Wilson and that is to be calculated on a worst case basis under the existing policy. To put this policy in

context, Mr Cramer points out at p.15 of his report that in the other states in Australia, with one notable exception, financial assurance to 100 per cent is required in the form of an unconditional guarantee or cash. That applies in the Northern Territory, in New South Wales, in South Australia and Tasmania. Western Australia has a very different system, which is discussed by Mr Cramer and it has a number of flaws which I needn't go to. It really involves cross-subsidies and that has the issues that Mr Cramer adverts to.

Queensland is a different model. It does require 100 per cent financial assurance in the form of an unconditional guarantee, but it has a discount system of up to 30 per cent on meeting financial compliance and rehabilitation criteria. Mr Cramer points out at page 18 of his report that in 2013 the Queensland audit office prepared a report on the environmental regulation of the resources sector and found that financial assurance was often insufficient to cover the costs of rehabilitation. Where it was insufficient, the regulator was reluctant to take action. There was little evidence of progressive rehabilitation occurring in Queensland and, as a result, successful environmental rehabilitation was not occurring and the state remained exposed to unnecessary and unacceptable financial risks.

We would submit that the fact that the Northern Territory, New South Wales, South Australia and Tasmania have in place the requirement that there be 100 per cent financial assurance is an important consideration for this board.

On this issue there is the question of values, which

was explored in evidence with Dr Gillespie. The current policy reflects a value which, in my submission, may be related to the idea of a social licence, that the cost of mining licence is that the state not be left with any risk, or minimal risk, and that would be the case if the bond policy was enforced.

What has been put by the mine operators is that risks should be assessed in relation to the question of whether in fact the state will be left holding the risk at the end of the day by reference to economic efficiency considerations. We say at the outset, and it is an obvious point, that economic efficiency is only one criterion. It is common place in public policy analysis for that to dominate, but it is only one consideration.

Another value is the one I have mentioned, that there should be a very high standard of protection that the state has as a requirement for granting the licence, and it is interesting to note that the requirement to have a very high standard of protection can be evidenced in a couple of areas. One may be the lack of interest in inviting a risk-based assessment process at all. It might also be seen in the kind of certainty that the state requires in relation to the assessment of rehabilitation costs. Accepting a probabilistic assessment with a P-value of 95 might reflect a values-driven policy which is that the state should not be left with any significant degree of risk. Our submission is that the Board should not uncritically accept the submission that economic efficiency considerations are paramount or dominant.

A good deal of reference has been made to the KPMG paper, which is a useful document. We simply note that

that was a document prepared after some consultation between a handful of department and government representatives consulting over a few days with a private consultant, with no disrespect to KPMG, which is a reputable consultant, but as the document shows, there were no community representatives at that forum expressing a different set of values or any concerns that economic efficiency values should not dominate. That is not to say that those considerations are always irrelevant, but the real problem here is that risk assessment, if it is to figure in any revised policy, one, needs to be holistic and, two, is a lot more nuanced and complex than was suggested by the evidence proposed by the mines.

Mr Wilson agreed that, in the context of bonds, it is difficult to employ a risk management framework because it is difficult to calculate the risk with any degree of certainty, and that is a real threshold issue for this question. Mr Wilson said that treasury would be interested in the question about what kind of exposure the state was taking on in relation to entities that have overseas parent companies. There is certainly a need for transparency around any mechanisms that would require the state to rely on the assets of other entities, and even when the assets put forward are held by the operator there is a need for transparency and there is a need for continued monitoring of that and, as Mr Wilson acknowledged, the state would have to take on or have access to relevant expertise and that adds transaction costs.

In our submission the lack of transparency, the opacity of some of the financial structures which are in evidence, the need for the state to become an expert in

monitoring this and transaction costs all point to the undesirability of the risk-based model.

It has also been accepted in evidence by Mr Wilson and also by Dr Gillespie that external risk factors may well affect either the profitability or the lifespan of the mines, and we have made reference in the evidence to climate change policies, renewable energy targets and the like. This evidence is at a fairly general level, but in my submission it is sufficient for the Board to take note that it has been accepted that policies of that kind may well change settings in a way that is quite dramatic and in a short period of time.

It was suggested in Dr Gillespie's evidence, and in a question put to him by Ms Doyle, that planned and managed closure might avoid those risks altogether, but the simple point is the regulators cannot know with any certainty, when predicting what that risk might mean to the state, exactly how those policy settings might apply. True it is that one branch of government might inform another, but that doesn't always occur and changes might happen at the Commonwealth level which will impact the way the state proceeds. It would be much simpler and certainly, as Mr Cramer's evidence points out, significantly more secure and removing of risk if the existing system was maintained, and I'll say a word about structure in a moment.

What was proposed in Dr Gillespie's evidence, and that of Mr Rieniets', which was proffered to support it, was an economic efficiency model which took into account benefits accruing to the state in a very narrow way and costs occurring to the mines and, as Dr Gillespie agreed and is obvious, the two things that are taken in opposition

in that model are public benefits and private costs. As Dr Gillespie agreed, the calculations that one would have to engage in are in fact more numerous and more complex. He acknowledged that opportunity costs need to be taken into account on both sides, as do transaction costs. What was put forward as, in my suggestion, intended to convey at least the notion that there is little risk to the state in the current arrangement simply can't be accepted as evidence of that proposition, and Mr Gillespie accepted that, including because all of the numbers in that model were, in his words, artificial, and because the assumptions input into that calculation were not demonstrably justified.

Furthermore, the type of calculation leading to a consequence outcome that Dr Gillespie did was simply not correct. In this connection, the question of moral hazard is a really important one. If the Board is to engage in a consideration of economic efficiency as an aspect of policy development, moral hazard obviously figures because if there is a very low level bond or a low level bond that is less than or considerably less than the potential rehabilitation liability, then there is an incentive on the mine operators to take the risk of not complying, and that is a fairly basic economic proposition and it is important in policy making and it should be considered here and one need only look at the figures in Dr Gillespie or Mr Rieniets' chart, even though they've accepted that they're only illustrative, to look at the great disparity between bond liability and rehabilitation cost to see that there is a very fundamental problem with lack of incentive to comply, and this is raised as an important issue where

the other elements of regulation are likely to be lax. We're submitting that there needs to be all manner of improvements to make regulation more vigorous, but where in this state there is a history of, frankly, lax regulation, it would be bad policy, in our submission, to allow an economic efficiency argument to set the bond at a low level because incentivisation to comply is very significantly important when the regulator has demonstrated a lack of willingness to enforce the law strictly or in a timely manner.

Any risk-based model would obviously need to take account of the potential for early closure, for all the reasons we have mentioned; the nature of the structures involved, the opacity involved in them; the need to consider public opportunity costs, and transaction costs, all of which are very uncertain as we speak.

In relation to whether discounts for progressive rehabilitation should be allowed in the bond model, that should be approached cautiously in the current environment of the nature of the work plans and the way they're enforced. It is an obvious (indistinct) Mr Wilson agreed, that you need very clear milestones, they have to be transparent and they have to be rigorously and independently assessed in order to provide a proper basis for any discount. Looking at it from another perspective, to the extent that the Board is considering the extent of risk involved in the current system or the lack of enforcement of the current system, it can't reasonably be said that one can come to a conclusion about a low level of risk because one can be sure that the mines will progressively rehabilitate. That is not a reliable

assumption in the present climate because the targets and the requirements are too vague.

In relation to the mechanism for the bond, obviously it should be reviewed regularly in light of changes to the work plans and with the receipt of new information pursuant to new conditions. On the mechanism more generally, we support counsel assisting's submissions on the utility of s.79A for the purposes of making assessments of the level of the bond. More broadly, cash deposits or bank guarantees are obviously very secure and for that reason are appropriate. We agree with counsel assisting that the Loy Yang model of a trust is a very good one and we also agree with counsel assisting's submissions about the timeframe within which that could be introduced in the Latrobe Valley mines.

If we pause for a moment and reflect on the fact that in the Loy Yang model it is intended to have 100 per cent of the rehabilitation costs within 10 years before anticipated closure, if that was applied to Hazelwood and Yallourn now, a very large contribution would have to be made in a very short period of time.

Environment Victoria also submits that the Board should consider a post-closure trust fund for maintenance and monitoring costs which are expected to be very significant. A separate instrument for the period of time when the current entities are not likely to be around, in our submission, makes a lot of sense.

Can I say something finally just briefly - those are our submissions on the bond - Professor Catford, you asked a question, I think last week, about the roles of the Commonwealth. We will address this in our written

submissions, but I thought I should mention it now because it is something that's, frankly, occurred to us after we had the opportunity to put this to any witnesses and it is really just a legal point. It has occurred to us that the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 might have a role to play. Under that Act, s.24D makes it an offence to undertake an action if the action is part of a large coal mining development and will have a significant impact on water resources. So this is really a point about water and it is an offence under that Act to take actions unless the action has been approved by the Minister for the Environment, and in our submission, for reasons which I will develop in writing, it seems to us likely that that provision would apply to the filling of the mines if the pit lake option were adopted because it would fall within the definition of the Act and the pit lake filling will have a significant impact on water resources, so that regime may well become relevant. There is a provision in it for agreements between state and Commonwealth Governments and I won't elaborate on it now but I wanted to mention it just to put other people on notice of it. There is also provision relating to actions that will have a significant impact on wetlands of international importance and we do have one of those in the form of the Gippsland lakes and if access to water by the mines for the purpose of rehabilitation affects the Gippsland lakes, that provision will become relevant as well. Those are our submissions.

CHAIRMAN: Thank you, Ms Nichols. Yes, Ms Doyle.

MS DOYLE: If the Board pleases, we have a document that we'll just hand out now and I gather it is also going to be made

available on the screen. I'll wait for that to be handed out because I'll be directing my remarks to the topics set out in that document.

If the Board pleases, this document is an outline of our oral submissions and I'll be expanding upon it, but what you'll see from this document is that we have addressed the topics arising from the terms of reference and the evidence adduced in these hearings by reference to 28 questions and we've set out the questions under a number of topics and, of course, under each question in red we give a very short answer, in some cases quite a terse answer, but I hope to develop those answers in more depth during these oral submissions.

The first question we pose is the following: is the system broken and does it need fixing? In brief terms, we say the system is not broken because many of the proposals, suggestions and issues that arose during these hearings for future action or even improvements, are capable of being achieved within the existing statutory framework. Why do we say that?

Without reciting long tracts from the Act, it is worth bearing in mind that if one goes back to the Mineral Resources Sustainable Development Act and looks at the provisions, including the provisions which set out the principles of sustainable development - those are captured in s.2A - it is instructive because what one sees is that many of the matters which have been traversed in these hearings are already captured in the provisions, in the Act and in its supporting registry scheme, and informed by the principles set out in s.2A. To recap on a couple of the principles set out in the Act which one is required to have

regard to in interpreting any particular provision of it, they include community wellbeing and welfare. They include the recognition of a need to develop a strong, growing, diversified and internationally competitive economy which can enhance the capacity for environmental protection. There are other principles which also refer to the need to look at measures which are cost effective and flexible which are not disproportionate to the issues being addressed. The principles also speak of balancing long and short-term economic goals; environmental, social and equity considerations and so on. What one also finds when one goes to the Act and the regulations is that they already capture the following regulatory tools and levers: there are conditions imposed on mining licences, including conditions with respect to rehabilitation - I'm referring here to s.26 of the Act. There is an ability on the part of the Minister to vary conditions, see s.34. There is a requirement that work plans be lodged with the department, s.40. The work plans must include a rehabilitation plan. Section 39 provides that work can only be carried out in accordance with those plans. Section 79 contains specific provisions concerning rehabilitation within those plans. There are mine stability requirements. The Board will recall that the experts agreed stability is a paramount concern with respect to these mines, but that is a matter that has been recognised by the law makers. It is housed in s.40(3) of the Act and, of course, Part II of Schedule 15 to the regulations. Together, that suite of provisions requires declared mines to include prescribed mine stability requirements in their work plans. The requirements to rehabilitate are also echoed in s.78 of the

Act, which requires the holder of any mining licence to rehabilitate land in accordance with their rehabilitation plan as approved and then there is a regime for dealing with assessment of rehabilitation liability or the bond provisions, as we've been calling them in these hearings, and those are encapsulated in s.79A and s.80. Of course, ultimately there is the power on the part of the Minister to take any necessary action to rehabilitate the land, and that is to be found in s.83 of the Act. An obligation to consult with the community is also enshrined in s.39A of the Act. It is worth recalling those principles and those regulatory tools and it is in light of those that we make the comment we make in our short answer to question 1. Yes, the regime, the architecture is there. Yes, it is also the case that better coordination between the department, the mine operators and other relevant agencies, which may alter from time to time, but in terms of the evidence that's been adduced in these hearings, it appears as though it will often be relevant to coordinate and consult with water authorities, local government, on occasions the EPA and, on occasions, the CFA and VicRoads. Those things would be desirable.

The other thing that would be desirable is a clearer statement by the department of the standards which it will apply in light of the overarching regulatory regime and the timeliness with which it will do so.

Now, in that context, we agree with counsel assisting that the action plan, which has been mentioned a number of times this morning, Exhibit 37, is a useful first step. We're perhaps not as enamoured by it as counsel assisting appear to be, just in the sense that it is only a first

step. It rehearses a number of themes or objectives, which appear laudable, such as enunciating roles with clarity, building capacity, devising risk-based strategies, developing a compliance strategy and the like, but the suggestion that those matters form part of an action plan in 2015 is curious and one would have thought that those things would already be well under way. In any event, they are a useful first step in terms of the matter we raise in point (b), namely, a clearer statement of these standards and some sort of indication of the manner in which and timeliness with which they'll be implemented will assist everybody who is working in this arena.

The second question we ask relates to the plan for the final rehabilitation of the Hazelwood Mine. The answer is brief, you'll see. The plan is the slopes will be reshaped and the mine will be flooded to form a pit lake. Now, there is a body of science that sits under that short answer. The Board will recall that Mr Faithful's statement contains a good body of detailed information and annexures which are relevant to answering this question. In particular, the concept master plan is set out in figure 8 of his statement, just below paragraph 118, and also in annexure 11. A great deal of the answer to the question also lies in the work plan of 2009 and will also be housed in the 2016 variation to that plan, which is anticipated to be lodged next year. A good deal of the science is also traversed in technical reports and research documents, many of which are described or attached to Mr Faithful's statement and the most important of which is probably the GHD water modelling report, which is also annexure to his statement.

At question 3 we ask, "How do we know the final rehabilitation plan will be implemented by the operator of the mine?" We say in short terms one can be confident it will be implemented because of one of the regulatory tools that I referred to at the outset. GDFSAE is bound by licence conditions which require work to be undertaken in accordance with its rehabilitation plan, which is, of course, part of its work plan. But in addition, the mine operator is, and has been for many years, undertaking progressive rehabilitation in accordance with that plan and will continue to do so.

Further, and this matter is something we'll develop in the context of bond policy, the mine operator is part of a corporate structure with credit and credibility. It is for that reason that, in the context of bond policy, it is submitted that there is a very low risk of default, and I'll go on to talk more later about this notion of risk and what default might entail.

The fourth question that we ask is whether the final rehabilitation plan with respect to this mine, which involves achieving a final land form of a pit lake in the mine void, is feasible or, to use language sometimes employed by the expert panel, safe and stable, in relation to the Hazelwood Mine. The short answer is yes, the experts agree that the approved final rehabilitation plan for Hazelwood Mine, namely a pit lake, is feasible and is the most well developed plan for the end of this mine. I remind the Board that the joint report which was, of course, the product of a conclave or a meeting of all of the experts, the joint report answers questions 4(a) and 4(b) in the affirmative. Those are the two questions which

best echo the short question we have asked here. In indicating their consensus, the six experts agreed that the mine's current rehabilitation plan generally aligns with the Jacobs' option of a partial backfill below the water table level. It is in this context that we suggest that the submissions made by counsel assisting at paragraphs 1 and 8 of their document are overly pessimistic. To remind the Board, in paragraph 1, counsel assisting suggested that presently there is no scientific answer about how exactly these plans might be implemented in order to ensure pit stability and water quality at closure and into the future, and in paragraph 8 counsel assisting suggested that there needed to be a redesign and, "If this were not done, the state would likely be left in perpetuity with huge, dangerous, unsightly and expensive voids to look after and that the communities of the Latrobe Valley would suffer the result." We say that is pessimistic hyperbole in circumstances where the experts who were tasked with this very question of considering the documentation available, principally the work plans for each of the mines, and applying their expertise to these questions all answered in the affirmative. In that regard I refer also, of course, to the Jacobs report, which developed in more detail a feasibility assessment of these plans. Dr Haberfield agreed in his own report that the approved final rehabilitation model constitutes a feasible and appropriate model from the perspective of achieving a safe and stable land form and returning the mine to a condition which will enable future beneficial use. Dr McCollough expressed the same sentiments in his report, noting that a dry void option should be regarded as impracticable and wholly

unreasonable.

We note that during the oral evidence, the occasion on which the expert panel convened in these hearings, there was an alternative suggestion raised by Professor Galvin that there might be an alternative feasible land form, namely to continue to pump water from a dry void in perpetuity, but we do not, as counsel assisting appear to do, give that any weight. Professor Galvin did not express such a caveat on his opinion when he signed the joint report and when he answered questions 4(a) and 4(b). It was not clear in the end whether this was really raised by him as a serious proposition in the context of these three mines. Whether it was seriously put or not, it was howled down, to put it frankly, by all the other experts, his colleagues on the panel, and it was in that context that Professor McKay, at transcript 450.28, said, "I am a great believer that we will end up in a lake system and I am, as a hydro geologist ... (reads) ... you can actually minimise the risk of movement."

I note in similar vein Dr McCollough, when this alternative of the dry void pumped in perpetuity was raised, said it was conceivable but ultimately very unlikely that any other land form would be feasible. Indeed, in light of his experience in other parts of Australia and overseas with these sorts of pit lakes, he said he was yet to find an options analysis that found that pumping in perpetuity yields better outcomes. It was in this context that a comment made by Dr Haberfield, which has received some airplay, was also made, but it is an instructive comment because Dr Haberfield said, "I'm going to be a little bit arrogant here. We're engineers and our

job is to ... (reads) ... the best solution I can think of is a lowered land form with a pit lake."

It is in light of evidence such as that, but principally in light of the fact that the experts all signed the joint written report, a task they must have taken seriously and a task to which they devoted their joint deliberations, that we confidently answer question 4 "yes".

Question 5 deals with some matters that received some attention during the evidence pertaining to three different aspects of modes in which one might tackle the task of rehabilitation. In brief form, you'll see the answers we give to question 5. 5(a) pertains to the depth of overburden cover that might be required and we submit that at this stage the best scientific evidence available confirms that one metre coverage on rehabilitated slopes will suffice, and I will develop that in a moment. Question (b) relates to whether there will be a requirement for rip rap to be installed around the internal lake rim. We say the evidence on balance, at the conclusion of the expert panel, was no. The experts who had given this detailed consideration, principally Drs Haberfield and McCollough, said that it was not necessary; said that they had not ever seen it done and did not expect it would need to be done. One other matter which, in the end, may not be as significant because it was a matter raised only in the Jacobs costings, was the question of whether there will be a need for a drain to be installed around the external lake perimeter and we say the evidence there was even clearer. Dr McCollough and Dr Haberfield were adamant not only would it not be necessary but would itself pose a stability

danger to the final land form.

Can I go back to 5(a) and just develop that very briefly. This question arises because of an assumption made in the costings presented by the Jacobs team and we submit it is rightly described as an assumption because Mr Spiers agreed in evidence, when he was on the expert panel, at transcript page 502, "We really didn't know the right answer, so we went for a conservative depth that we thought was safe to achieve the outcome." We cavil with the proposition that that is, therefore, the correct approach, and insofar as counsel assisting suggest that at paragraph 41 of their submissions, we disagree.

Dr Haberfield's report reveals that he gave this question consideration. He went so far as to call an expert at the CSIRO to ask whether there were studies in this area and was told there was no study which suggested that any particular depth was necessary in the circumstances, and I might say that Professor Sullivan also agreed that it is too early to talk about layer thickness at this stage. But Dr Haberfield then said that one ought to look at that in the context of what has been working and what is known. He also looked at it in the context of what he knows in terms of erosion, likelihood of particular types of clay to crack and the like, and on balance, in light of that, he formed the view which he expresses in his expert report, that up to one metre coverage appears to be sufficient to do the job and to raise no other stability concerns.

Mr Faithful's evidence accorded with this, in the sense that he said the practical experience of those working at the mine over a number of years is that one metre cover has performed well and held up to risks and,

indeed, as he agreed, perhaps the most significant practical experiment, although unwanted at the time, but the most significant practical experiment which has been conducted is the way in which the coalface has responded to the fire last year and, of course, during that fire it was observed that slopes rehabilitated in accordance with the one depth cover method did not burn.

I will touch briefly on the rip rap question. It is, of course, no part of the current work plan at Hazelwood to install rip rap in the pit lake. Equally, it is accepted if future erosion studies suggest there is a need for it, the work plan might change, but it is significant that Dr McCollough and Dr Haberfield gave evidence, in the case of Dr Haberfield in his report, but in both cases during their time on the expert panel, that it was not necessary. Indeed, Dr McCollough said at transcript page 527 that he'd never seen it used in a pit lake, it is not required in natural lakes and he would never advise it. Dr Haberfield also pointed to the significant diminution in amenity that those sorts of structures lend to artificial lakes.

As to the installation of a drain question, I pause here only to say that Dr Haberfield described it as ill-advised, it being a manner of concentrating water near the top of the lake, see transcript page 509, and Dr McCollough saying he had never seen it used and regarded it as ill-advised, transcript page 510. As I say, those matters are important, (a), to the way in which rehabilitation is undertaken, but, (b), later in our submissions, to the way in which adopting an erroneous assumption, in our submission, can skew the costings, which have received so much attention in these proceedings.

I turn to question 6: "Is further study or work required along the path to rehabilitation?" Of course. It is accepted. We see what the authors of the joint report said at paragraph 8. They said there's a significant body of work that needs to be completed, reviewed and synthesised. There's been no suggestion that Hazelwood Mine is not presently undertaking that work - see, for example, the GHD water modelling report attached to Mr Faithful's statement. Nor can there be any suggestion that the operator of the mine will not continue to progress those types of research. As Mr Faithful said, he'd only had a very short time to look at the particular project suggested by Dr McCollough, but he said, "I intend to sit down with Clint and go through the list." In those circumstances, it can only be expected that, as and when required, the work will be commissioned, the work will be done and the results of those researches will be analysed and implemented.

I turn to question 7, progressive rehabilitation. First, we submit it is important to ask one's self what the purposes of progressive rehabilitation are, and in our brief answer we suggest two of those. The first is to restore the condition of the land, the land which has been disturbed during the operation of the mine, to restore it so far as is practicable where it is no longer required for the mine's ongoing operations. Pausing there, the Board will remember having heard Mr Faithful's evidence about the way in which retreat mining principles work, namely, that as one completes work in a particular domain of the mine or on a particular batter, it then becomes possible to move infrastructure, if you like, in a direction around the mine

which enables it to be used more efficiently as the shape of the mine changes, but also to free up areas for progressive rehabilitation.

The other purpose we point to in our answer to question 7 is to ensure that work necessary to be done as part of the final rehabilitation plan is done progressively, again so far as is practicable in line with practical constraints, including ongoing operations but also the availability of overburden.

We note, and it is accepted, that progressive rehabilitation also has a very useful by-product. When done, it has the potential to mitigate fire risk in exposed coal during the operational phase of the rest of the mine, but, of course, that species of rehabilitation is only one of a raft of available control measures in terms of fire risk mitigation and fire preparedness. I won't detail all of those now, and a lot of time was spent on them in the first phase of this Inquiry, but they include the fire services network spread throughout the mine, and of course the training and preparedness of those who work at the mine to deal with any fire risk and any ultimate fire if it emerges.

In the context of progressive rehabilitation, can I go to the comments made by counsel assisting in paragraphs 101, 102 and 106 of their submissions. We're confused by the suggestion in paragraph 101 that there is available a narrow definition, perhaps as opposed to a broader definition, of what constitutes progressive rehabilitation. There, at paragraph 101, counsel assisting say, "There is a general presumption by mines that progressive rehabilitation is about adjusting slope angles, moving

overburden around and planting vegetation." Accepting and assuming that this must include all the science that lies beneath that, including questions of stability, we ask rhetorically what else is progressive rehabilitation? Of course one has to do studies in order to understand how to safely and appropriately do those works and that is accepted, but it is not clear to us why this is said in a pejorative sense to be a narrow definition or it is also not clear to us what other species of progressive rehabilitation it is implied we ought to be conducting but are not.

We do, however, tend to agree with what counsel assisting say at paragraph 102. There counsel assisting make the point that insofar as the terms of reference seem to suggest that an end of mine life option, whether that be a pit lake or something else, can or cannot ensure progressive rehabilitation is carried out, we agree that is to state the wrong question. We agree further with counsel assisting that it is regulation, commitment and perhaps, in a sense, incentives, including the way the bond system works, which ensure that these outcomes are ultimately achieved.

Insofar as counsel assisting suggests, at paragraph 106 of their submission, that the cost of rehabilitation should include trials and research, we agree in part. Those things are being done during the operational life of the mine and are done in order to assess modes of progressive rehabilitation, but it couldn't be said, on looking at the requirements of a schedule 19 report, that the mine has been remiss in not calculating out those costs, or estimating them for 100 years into the

future, in terms of the detail that it does provide in its schedule 19 costings. That simply has not been a domain or a question that the mines have been required or even invited to include in those schedule 19 reports.

Sticking with paragraph 106 of counsel assisting's submission, we do take umbrage with the comment of Ms Unger, which is perhaps taken out of context from her otherwise carefully-given evidence. Counsel assisting refer to her noting that anyone can push out a slope and throw some seed out. Taken on its own, that glib comment is, to say the least, unhelpful and does not represent a fair description of the mode by which the three Latrobe Valley mines research, plan, trial and undertake their progressive rehabilitation. It is clear from all the evidence given by the operators, who attended twice and sat on the mine panels and, of course, from the evidence given by the expert panels, that stability is always front of mind for these mine operators and for the Technical Review Board and for any expert who has spent any time considering the question. The glib suggestion that the way in which this is done is pushing out a slope with a dozer, perhaps, and throwing out some seed does not ring true and does not reflect the evidence that's been given in these proceedings, or the careful work embodied in the operator's plans and in the research to which they've had regard.

Question 8 asks whether there are any progressive rehabilitation targets applicable to my client's mind and whether those targets have been met. Mr Faithful's statement engages with this in some detail and I won't repeat the detail here and, of course, his statement harks back to the evidence given in phase one of the Inquiry and

to the clarification and understanding that the mine has since reached with the department concerning what the expectations are in terms of progressive rehabilitation and Mr Faithful also sets out the various communications which confirm that there has been no suggestion by the department that the mine is failing to meet its obligations in this regard.

I turn to question 9, which asks whether there's any sanction for a failure to meet progressive rehabilitation targets. Well, as we say in our answer, the ultimate sanction is clear. A failure to meet progressive rehabilitation requirements will ultimately engage sanctions under each of the licence, the work plan and the Act because the ultimate sanction is embodied in s.38, namely, the capacity on the part of the Minister to cancel the licence. Now, one would expect, in a regulatory sense, that well before that ultimate sanction is enlivened or enforced, there would be some engagement, real engagement, between the department and the mine operator and, of course, from the evidence the Board has heard, there are multiple opportunities for that engagement; regular site inspections, regular formal and informal meetings, regular communications. One would expect that if on any occasion those targets embodied in the Hazelwood work plan aren't met, that there will be notification given of a shortfall in terms of the conditions.

I pause to note that it is principally condition 15 in Hazelwood's mining licence which requires that progressive rehabilitation be conducted in accordance with the rehabilitation plan, and then the obligations and the sanctions in the Act that hang off that are to be found in

ss.78, 81, and ultimately 38, of the Act.

Our 10th question focuses attention on risk assessments and we ask what risk assessment approach ought to apply to these mines during their operational phase but also when planning and performing progressive and final rehabilitation works. It was clear at the conclusion of the evidence from the expert panel that a rigorous technical risk assessment approach is necessary. It was clear from the evidence of the experts that this requires hazard mapping to be undertaken, an identification of risk and then the application of control measures. Now, while the experts use different language, in the end what each of them appeared to be saying in their own way was that control measures need to be applied, once the hazards and risks have been identified, need to be applied to reduce risk to a tolerable or acceptable level.

It is also clear from the body of evidence before this Board that a principal, if not the principal, technical risk with which mine operators, and all who advise them and regulate them, are concerned throughout the life of the mine is the question of stability but, of course, there is also evidence, principally in Mr Faithful's statement, that stability is front of mind on a day-to-day level throughout the life of the operations of the mine and that stability is monitored on a daily basis through extensive equipment monitoring, with geotechnical and hydro-geological conditions being tested, monitored and reported upon. The technical data derived from the instruments that the mine uses in this regard, and the strategies that the mine deploys to manage safety concerns, are the subject of periodic reports to the department and

are also supplied to the Technical Review Board for review.

Although, as I say, the language used by the experts tended to differ slightly, it is submitted that the following might represent a good summary of the concepts expressed by each of the experts during the occasions on which they were taken to the question of risk management. Each of them agree that there is risk inherent in operating large coal mines and also in the works necessary to be undertaken to rehabilitate them. All agree the most significant risk usually is stability. All of them agree that the likelihood of a risk eventuating, and the possible consequences if that risk eventuates, differ mine to mine, domain to domain and often batter to batter. In other words, one cannot adopt a one-size-fits-all approach.

Equally, all of the experts agreed that one could minimise and control those risks by adopting the approach I have referred to, hazard mapping, a rigorous risk assessment process undertaken mine by mine, domain by domain. All of the experts agreed it is not possible to eliminate risk but that the goal is to reduce risk to a level which is tolerable or, to use language that some of them employed, acceptable or as low as is reasonably practicable. Once that risk is identified, then appropriate control measures are applied. The other thing that all the experts agreed, though, is that these control measures are substantially known, tried and tested, there are solutions which are suitable for managing risk of stability and there is equipment already in use which enables one to monitor the stability risk during the life of a mine. It is of note that these mines submit six-monthly stability reports to the regulator. And

Professor Galvin noted that it was the Technical Review Board which assisted the mines, in particular Hazelwood, in setting up these systems and as a result, said Professor Galvin, at transcript p.491, he is confident that the mine has a good survey system and that the Board has fairly good oversight of what is happening.

Can I pause before the lunch break to mention or expand upon one other aspect of progressive rehabilitation. I have already gone to some of the evidence on the one metre cover question, but I should say that it was not until oral submissions of counsel assisting this morning that it was at all clear to us that there remained a live question about the method of covering exposed coal because it was not until those oral submissions that counsel assisting made a suggestion that there should still be some consideration given, in the context of the risk assessment process, to covering coal by some other means and in this context, counsel assisting harked back to the evidence in phase one of these proceedings, the hotly contested evidence in relation to other possible modes of covering coal, evidence given by Professor Cliff and Mr Incoll in those proceedings, sometimes referred to as the concrete cover or the shotcrete cover solution.

Now, there is significant issues that we raise with respect to this suggestion. It wasn't put to any of the mine operators in this phase of the proceedings, it wasn't put to any of the experts and all debate proceeded on the basis that the only issue between us, or serious question between us, was one metre versus two. But in any event, it seemed that counsel assisting was perhaps only using that as an example or as a means of pointing to deficiencies in

the risk assessment process undertaken by the mines. Well, we take issue with that as well. Annexure 4, formerly confidential annexure 4, at the back of Mr Faithful's statement, but it is now available with some redactions, is Hazelwood's risk assessment management plan. Now, if one looks at that, it does not suffer from the vices to which counsel assisting pointed. It was suggested that if the mine staff sit in a room by themselves, they'll tend to confine their discussion of risk management control options to things that they've done in the past and it seemed to be suggested against GDF Suez that this had led to a confining of options and a focus on the one metre cover rather than revisiting the Incoll/Cliff solutions.

Well, we do take issue with that because in fact the workshops, that predated the development of this large and detailed risk assessment management plan, included input from mine staff, sure enough, but three representatives of the consultants, GHD, one from Coffey and Associates and input from the CFA and Victoria Police on topics relevant to them. It is not the case that mine staff sat in a room with a myopic focus on their current mode of undertaking progressive rehabilitation, the matter was assessed with the assistance of those expert commentators, but more significantly, revisiting that question, the question of mode of coverage of exposed coal, wasn't put to Mr Faithful, wasn't put to the other mine representatives and wasn't put to the expert panel as perhaps being proof of some deficiency in the mine's approach to this question.

I note also that the implementation monitor's report, with respect to recommendation 16.1 at page 91 of that report, also, with respect to another body of work,

commends GDF Suez for its work undertaken in reviewing its mine fire service policy and code of practice and having done so with the assistance of independent consultants, with the view to embodying any of the findings coming from that review process into any reviewed or revised version of that document.

So in those circumstances, we do take issue with the suggestion that there's either been a particular deficiency in the risk assessment management process or that it has thrown up a result, in terms of mode of covering exposed coal, which is unacceptable in light of current science and research. I note the time and I'm up to question 11. The next suite of questions will be quicker.

CHAIRMAN: Admittedly, we have had one sticking to time and Mr Attiwill being very economical, but you are roughly halfway, as you were about to say.

MS DOYLE: Yes.

CHAIRMAN: And you have gone for over half an hour. Do you expect that you will be another half an hour?

MS DOYLE: 25 to 30 minutes at the most.

CHAIRMAN: And I gather that the others that we're allowing for - I'm just trying to work out whether we just have a shortened break or a longer break.

MR ROZEN: I'm not sure how short - - -

CHAIRMAN: I'm just going to compromise and say three-quarters of an hour.

MR ROZEN: I think that might be the best approach.

CHAIRMAN: All right. That means approximately 1.45.

LUNCHEON ADJOURNMENT

UPON RESUMING AT 1.45 P.M.:

MS DOYLE: If the Board pleases, I was up to question and answer 11. Question 11 poses the question what water entitlements Hazelwood Mine currently has and to what extent they're used and as you'll see from our answer there, GDF has a substantial water entitlement under a groundwater licence. It is presently not fully utilised. In fact, the evidence of Mr Faithful is that the mine presently uses about 50 per cent of that which is allocated to it.

Under question 12, we ask, "How long will it take to fill the mine void to create the pit lake?" The most recent modelling work, as I've said a number of times, is included in the annexure to Mr Faithful's statement, which is the GHD modelling report. What that shows is that it is estimated that it will take about seven years for the pit to fill to what has been called the stability point, or negative 22 metres, and that it will take longer, and the modelling depicts on a chart in that GHD report a period of between 30 and about 90 years, depending on which water sources are used, to fill the pit lake. This is in stark contrast with the 500 years which was previously thought to be the case and which is constantly quoted against Hazelwood. I emphasise that because we are constantly called upon to improve the science and improve the knowledge base. This is an instance where that has been done and we'd ask then that in consideration of water sources, time to fill the void and the like, that regard be had to the most recent science, which tells us that the fill time is, as I've said, seven years to the point of stability and then a number of decades, perhaps in the order of 30 to 90 years, to fill the lake to the ultimate

level of plus 8 metres.

Question 13 raises the question of what options the mine has in terms of sources of water and we set out there - again, these are drawn from the latest science, principally the GHD report - we set out there the most likely and feasible sources of water for the pit lake. I won't read them. We set out there those which have been modelled by GHD.

Question 14 raises the issue of whether there will be sufficient water available for the mine. Focusing on the Hazelwood Mine on its own, the answer is yes. The most recent modelling suggests there will be sufficient water, for reasons including that the operator does not presently use even over 50 per cent of its groundwater entitlements and it has also had regard to the possibility to, for example, discharge water from the Hazelwood cooling pond and redirect rainfall in order to fill the void. But a question mark was raised during these proceedings about a comment made in the 2011 Gippsland water strategy document which suggests that there may be insufficient water available for all three mines ultimately to fill their pit lakes at the same time. There was nothing put forward by the department or the water authorities which explained the scientific foundation for the comment in the 2011 document and, of course, it is a comment that has not been treated in any way by the department or the water authorities as urgent or as requiring any particular action to be taken thereafter.

In the evidence that was given by the water panel, it emerged that none of the water authorities had considered how much water was required. None of them had considered

whether the mines could, in accordance with their current entitlements, fill the mine voids with that water allocated to them and, as has been said a number of times, there's been no formal discussions about how that might happen. But one has to look at this in context. The mines have, during the period of time which straddles the issue of the 2011 document, been submitting work plans and work plan variations which have always had regard to the final closure option of a pit lake. In circumstances where the department continues to approve those work plans and work plan variations, it is hard to understand why it is said that the mines are to blame for not initiating a conversation about what is, after all, on its face, a thought bubble which appeared in a 2011 strategy document. As I said, the science was not explained to this Inquiry. In fact, the members of the water panel most often answered questions put to them by declining to speculate, and this was one of the topics on which they said they were unable to speculate.

The inertia which has characterised the department's response since 2011, we submit, is not the fault of the mines. It is not incumbent on the mines to help the department activate its 2011 strategy; it is a matter for the department. In circumstances where there is liaison and consultation about that question, then of course the mine will participate and will do so in light of the science and any other requirements imposed upon it by the department or the water authorities.

I turn to question 15 and those that follow, which deal with the questions of coordination and engagement. We ask in question 15 is it appropriate that there be more

coordination between the mines. Yes, of course. More coordination and improved cooperation between the mines is likely to assist in developing an overall plan so far as there are common elements between the three mines.

I turn to question 16. We ask whether the consultation should also - of the type I have just referred to - include input from others and, if so, who should coordinate it. We mention in our answer to question 16 a number of entities that might be relevantly coordinated and consulted with and we do suggest that rather than re-inventing the wheel, either the existing regulator or a body such as Coal Resources Victoria, might be well placed to be tasked with the responsibility for coordinating engagement between the relevant groups.

In question 17, which directs attention to the question of how GDF presently engages with the community, we note that GDF already has a range of community consultation measures in place. To mention but a few, they conduct quarterly ERC meetings with a range of community representatives and in the evidence we of course referred to and tendered the presentations given on three occasions throughout 2014 and 2015 in relation to implementation of the outcomes of the first Inquiry and, in the last of those three consultation sessions, the slides reveal that there was information presented in relation to the final rehabilitation plan. Of course, in this context, GDF agrees with a comment that was made by a number of witnesses, including Ms Unger and Dr McCollough, that community consultation in relation to mine closure and final rehabilitation is obviously not a once-off event and consultation must be ongoing.

Question 18 asks, "What is the community's view in relation to final rehabilitation plans?" In this context, we make the point that there is no single view which emanates from the community, and nor would there be expected to be one sole view, but of course GDF is committed to continued consultation with the community and with diverse views as expressed by the community. We remind the Board of the reality that there are, of course, diverse and divergent opinions in the community. To the extent that Ms Rhodes-Ward gave evidence of the views of the community, we express some caution about the results of the survey on which she relied. It was informative but it was, of course, based on a mere 71 responses, as she agreed in evidence, and when asked open-ended questions about positives and negatives in their community, the issue which appeared to be front of mind for all those who responded - and I pause to note, in a period that was only about 45 days after the fire - most respondents, indeed 37 per cent of them, identify that their single biggest concern was traffic noise, and others identified matters flowing from the fire, such as coal dust, proximity to the mine and the like. Others, in turn, referred to concerns including safety on the streets and amenity of their properties.

By way of further example, we, of course, also drew attention to the fact that there are members of the community who expressly noted the view and we used just one example, the letter to the editor written by a gentleman who said he had a different view from one community action group and wanted to be heard own that matter. Bearing in mind then that the views of the community are diverse, will change from time to time and that there is the phenomenon

explored in the evidence of consultation fatigue, nevertheless it is accepted that there is a requirement and a benefit to be derived from consultation with the community.

I turn to question 19, where we ask whether there are successful examples of community consultation and enjoyment of the end beneficial use of mines rehabilitated in similar ways to those in the Latrobe Valley. Without going to the detail, the Board, of course, remembers that the evidence confirms the German experience has been instructive and relevant and Dr McCollough's report sets out examples of successful mine closure leading to pit lakes throughout Australia and overseas.

Can I turn to the topic of rehabilitation bonds and we traverse this in questions 20 and following in our short submissions. Before I go to the questions and answers, can I address the vexed topic of terminology, which comes up a number of times in this topic, but in at least two significant ways is important to get straight before we embark on the process of asking and answering specific questions: a lot of evidence has been written and said about costings. GDF submits it is important to be clear that one must compare apples with apples. Even if one is just looking at the mines' Schedule 19 reports submitted to the regulator and comparing them with the AECOM costings, of course at the outset it is imperative to acknowledge they were prepared for different reasons. The schedule 19 report calls on the operator to estimate their current end of mine liability. So, unsurprisingly, it is done using the operator's knowledge, method and rates, and done in a context in which the operator is best placed for most

purposes to understand the plan that they intend to implement. So insofar as the operator makes assumptions, they're very well informed ones based on the approved work plan.

AECOM, in contrast, was asked to cost out two scenarios: early close and end of mine, and it was asked to do that - again not unsurprisingly - on a different basis, namely, on the basis that a third party, not the operator, would undertake those tasks. So right from the outset one can see that they were engaged in different tasks for different purposes. Secondly, both sets of costings are underpinned by very different assumptions, and I'll draw attention in a moment to a few of them which, in GDF's submission, were erroneously adopted on the part of AECOM and have led to wrongly inflated costs, and thirdly, although this is to repeat really a point I have made for a different purpose, of course they're based on different inputs: the operator's costings and rates versus those if a third party has to walk in.

The second issue of terminology that it is important to get straight from the outset is the meaning of the scenarios that AECOM was tasked with costing out, but also the scenarios which figured in many of the questions asked of witnesses. All of us in this room constantly use the phrases "early close" and "end of mine", but it is important to bear in mind that early close is not necessarily synonymous with a scenario in which an operator drops their tools, walks away in the dead of night, leaving rehabilitation untouched or walks off the property at a certain point in time. A mine can close early, as a number of witnesses agreed, including Mr Cramer and others, a mine

can close early for lots of reasons, but nevertheless, in circumstances where the operator attends to all of its rehabilitation tasks. Equally, a mine can close at the end of its planned life in precisely the same manner, with the operator attending to each of its obligations in terms of rehabilitation.

So when one uses that terminology, it is necessary to be clear in each case whether one is talking about an early close of mine that is structured, planned and undertaken by the operator, or what is really the worst-case scenario, and that is a default walk-away outcome. It will become clear that GDF's submission and answers in relation to each of the next suite of questions I'm going to address is all premised on the foundation of its assessment and submission that there is a very low probability that the operators of these mines will effect a worst-case scenario or the walk away scenario. They don't just say that on their own account; they say it in light of the evidence, and the evidence on which they rely includes the following: the KPMG report of 2011, which has been referred to by a number of witnesses as encapsulating very well 10 guiding principles. The first and fifth of those principles are expressly that a 100 per cent failure rate in this area - namely, in the domain of these three coal mines - is unlikely, and the fifth principle is that any review of the bond system should be based on risk management principles.

Next, of course, the mines point to the expert opinion of Dr Gillespie and in addition point to the fact that the Accent environmental report, along with other witnesses, also suggested that the KPMG principles were instructive in this arena. So question 20 asks then what

amount is set for the Hazelwood Mine rehabilitation bond? The amount is well-known. It is 15 million. But what is interesting is the manner in which it was set. Mr Rozen identified this in some detail in his submissions, so I won't rehearse the same material, but GDF submits that in fact what appears to emerge from the documentation, when one looks back at the 1995 materials concerning the way in which the department set this bond, what appears to have occurred is that, without expressly saying so, the department appears to have adopted an early or rudimentary version of a discounted bond system, because the documentation indicates that it was assessed that there was a raw or undiscounted bond amount of 20 million, but that bearing in mind the operator's commitment to spend a certain amount on progressive rehabilitation in the following years, the bond level was reduced to 15 million. Now, that, we say, is an early version of what in these proceedings has been referred to as the bond discount model, in the sense that allowance was made and recognition was given for the fact that the mine had planned and budgeted to conduct progressive rehabilitation, which Dr Gillespie and Mr Cramer agreed with me in cross-examination is a matter which demonstrates, (a), a track record that you're likely to do it and, (b), that the operator is going to bring down its rehabilitation tasks and liability in years to come.

In question 21 we ask simply what are the estimated costs for end of mine rehabilitation and, in the context of the schedule 19, those costs, or their estimate, is well-known for the Hazelwood Mine; 73.4 million.

Question 22 asks, "Are there more reliable costings

available?" GDF submits there are not. We submit that the alternative costings proffered via Jacobs and AECOM are based on unsound assumptions and ultimately will not assist the Board. We pause here to note that, quite appropriately, counsel assisting has not sought to rely on the Jacobs costings in this arena, regarding them rather as indicative or prepared only for comparative purposes, and we agree. They're not in a form that they can assist this board. But some reliance is apparently sought to be placed on the AECOM costings. It is GDF's submission those costings are flawed and based on erroneous assumptions.

Can I mention first the use of the probabilistic model. I would challenge anyone in this room to summarise how it works in light of the evidence of Dr Bowden. It produces results which in many respects are perverse and I propose to test that by undertaking three simple reality checks in a moment against real-world matters as opposed to assumptions, but what we can say about use of the probabilistic method and the Monte Carlo simulation model is that the AECOM panel themselves agreed that it tends to deliver up ranges which are conservative and tends to skew towards high values.

In light of that, as I've suggested, we should test the results spat out by this model against three reality checks. The first is a simple one: the numbers that the model spat out in terms of - or the amounts it spat out in terms of management and procurement fees, which were set at 15 per cent of the total cost of the job. I pause to note that in its 2008 work, the GHD report, which is Annexure 30 to Mr Wilson's statement, back in 2008 GHD said, in a different context, that a 10 per cent mark-up or uplift for

management was inappropriate in a circumstance where it generated a $6 to $7 million fee. The AECOM report and model spits out a $41 million cost for management and procurement on the early-close model - pausing to note that is early close walk-away model - and 48 million for the end of life of mine model, again walk-away. In similar vein, the monitoring post execution cost, which includes a 3 per cent uplift for management in the AECOM report, comes to 38 million for early close and 60 million for end of mine. I call that the first of the reality checks. Those figures alone, 41 and 48 million, 38 million and 60 million, ought to have rung alarm bells, and I put that to the AECOM panel. They were not concerned by the size of those figures and apparently found them unsurprising. But GDF submits in this room that they are very surprising, that in circumstances where GDF estimates its current end of mine rehabilitation liability to be 73 million, that it could be suggested that there might also be a $48 million uplift on those costs should a third party have to come in and manage the process is extraordinary and is clearly erroneous.

The second reality check is the uplift for plus-risk costs. Mr Rozen has already accepted in his submissions that it is regrettable that the AECOM report does not disclose in any way the method by which these plus-risk costs were divined. Dr Bowden said it was an output from the model and then he gave a very long explanation, but it ultimately transpired that the expert analysis that had been applied to assessing risk was conducted by a group he first called an expert panel, but ultimately conceded was simply Mr Chadwick and Mr Byrne sitting in a room, applying

a percentage, they told us a number of times, could be provided but that they never did provide and certainly did not set out in their report. In those circumstances, it is odd indeed that the plus-risk cost element applied to the Hazelwood Mine on the early-close model came to 46 million at P50 level of confidence; 54 million at the P80 level and 63 million at the P95 level. Now, I put to Dr Bowden that any operator would look at this and quickly, or more slowly in my case, do the maths and realise that it represented exactly a 21 per cent uplift in each case. Dr Bowden told me the model doesn't work that way, you shouldn't reverse engineer it, but it is submitted by GDF that it is not unreasonable for anyone furnished with these costings to look at it and see that the suggestion that there is a 21 per cent loading placed on in the case of risk raises a number of questions, not the least of which the one the panel declined to answer, and that is, "How did you come up with those figures?"

In the end-of-mine scenario, the amounts added to the base cost said to be referable to risk were 67 million, 80 million and 91 million respectively, which ranges between 37 and 40 per cent of the base cost. Again, as a reality check, does this not expose that there is something wrong with the model? Again, if GDF Suez has calculated its end of life of mine rehabilitation liability at 73 million, how can the plus-risk costs be 91 million? How can they be more than 100 per cent of the base cost?

The third reality check is a number of the assumptions adopted by AECOM. I traversed each of these in evidence with Mr Faithful and with Mr Chadwick and others on the panel. Each of them is rehearsed in Exhibit 33 -

that is the correspondence chain in which GDF attempted, vainly, to bring to AECOM's attention, in the very short period of time afforded to it for any meaningful consultation, the difficulties with the assumptions they had adopted. Mr Chadwick conceded, frankly, that there had been a relatively short period for the mine to be involved, namely just between mid-October and mid-November, and that he had finished his report without taking them all into account and, quite frankly, he disagreed with some of them, but here is a shopping list of the assumptions that we submit have skewed the AECOM results: the end-of-mine life issue. AECOM was implacably opposed to adopting the planned end-of-mine life date, 2033, and stuck to the licence date, 2026, because they were instructed to do so. The time to fill the pit lake: AECOM assumed 21 to 28 years to the initial level and then 500 years thereafter. You will have heard by dint of my answer to earlier questions that that is not correct, based on the latest modelling, which is in the order of seven years and then in the later phases, 30 to 90 years. Management and procurement fees is a question over which we differ and I have already said something about that.

Monitoring. AECOM assume that there will be a need to monitor the mine post the execution of rehabilitation for 100 years. That has, of course, generated a huge cost, in the order of between 38 and 60 million. Water source and the need to purchase water - again, there is a difference between us. Mr Faithful based his costings on the reality that the mine uses half of what is allocated to it and pays only 20 to 30,000 a year. On a basis that wasn't fully explained, AECOM has asserted a cost of 6 to 8

million for the same entitlement.

Rip rap I won't dwell on, but it is a topic that generated a cost of $90 million on the early-close scenario and $107 million on the end-of-mine case. This was principally because AECOM assumed there was a need to replace this expensive rip rap, which I think is said to be installed at about $10 million a pop, many times over a 500-year period, leading to those outcomes of 90 to 107 million.

AECOM also assumed there would be a 15 per cent failure rate of rehabilitated slopes, something with respect to which we submit the science and the practice at the mine does not support them.

Can I conclude this analysis of the costings by undertaking this simple, and I'm sure Dr Bowden would say, simplistic analysis, but it is a fourth, if you like, reality check. The P95 confidence level costings issued by AECOM for the Hazelwood Mine were $241 million. If we just subtract from that two of the most contentious items in our submission, namely take out $107 million for rip rap and take out 60 million for monitoring this mine for 100 years, you'll never guess what we get: 74 million - very close to GDF's own estimated costs absent rip rap and absent monitoring the mine for 100 years. So it may be, after all, despite the fact that we say there's been an erroneous attempt to compare two things done for different purposes, that the GDF costings are not far from the truth at all.

Question 23 asks about the principles that do inform the current bond policy and we note in our answer that there does appear to be a tension between what is assumed to be the purpose of the current system and the current

arrangements in place.

Question 24 is easily answered: "What mechanism is presently used to provide financial surety?" The bank guarantee. The Board will recall the evidence given about the cost at which that comes, and I need only to refer to the evidence of Dr Gillespie in that regard.

Question 25 casts attention upon the question of the method used to provide financial surety. GDF submits there ought to be flexibility in this regard and that perhaps looking at, as an alternative to bank guarantees, a parent company guarantee might do. We suggest it is too early to fix upon any other alternative method because one first of all has to get the principles underpinning the model correct.

So on that basis I turn to what is essentially our last substantive question, question 26: "Should the Board recommend a new model for rehabilitation bonds, and if so, what principles ought underpin it?" Our primary submission is that the current system is not broken and does not need fixing. Harking back to what I said at the outset, the current regulatory regime contains the answers. It is all there. The Act, supported by regulations and the Schedule 19 requirements and, of course, s.79A, to which counsel assisting have properly drawn attention, presently enable a bond to be set and to be reviewed and to be cross-checked by an independent party. There is simply no evidence which demonstrates that this process does not presently offer sufficient surety to the state or that it will not continue to do to. Why do we say that? Because we very firmly endorse the evidence given in these proceedings that the risk of default on the part of the operators of the large

coal mines in the Latrobe Valley is very low, or to quote Dr Gillespie, "very, very, very low". His doesn't say that in a vacuum; he says that in light of his consideration of the materials in front of him, including risk factors, to which I took he and Mr Cramer, and they both agreed that they were an appropriate suite of considerations in this arena. They agreed with me that the past conduct of the operator of the mine is relevant; the operator's track record in relation to progressive rehabilitation; the question of whether there is demand for the mines' product and service and the degree of financial stability of the operator, that those factors should throw up the answer to the risk question and I pause to note that, of course, the KPMG principles, as I've said, particularly principles 1 and 5, enshrine the same approach.

It is for that reason that our principal submission is there is no evidence before the Board sufficient to support a finding that the current bond system or level are inadequate.

In the event the Board does not accept that primary submission and if a new system is to be considered, then GDF submits that a robust risk assessment approach ought to be applied to setting and reviewing bonds and that such an assessment ought not be applied in a one-size-fits-all approach, but rather there will need to be site specific assessments.

It is said against us that there are burdensome transactional costs in that regard. We submit to the contrary, that while another simpler system might be appropriate for the many small mines or mines in relation to different resources across Victoria, in the case of the

three coal mines, there is no reason not to apply the appropriate time and resources to conducting a sophisticated risk assessment with respect to these three mines in light of the three criteria that we've set out in our answer there.

There's also been some consideration in the proceedings to the question of a discount bond system. I opened this part of our submission by referring to the quirk that it appears that back in 1995, without necessarily making express the fact that this is what it was doing, the department in fact adopted an early version of a discount bond system. Dr Gillespie proposed that a bond discount system should be based also on the outcome of a risk assessment approach, which would involve consideration of the sorts of factors I have already pointed to, and he also in that context saw no reason why there should be any ceiling on the amount of the discount allowed under that system. GDF agrees. It submits that there should be some mode of recognition, reward or encouragement for progressive rehabilitation, but that, most importantly, it fits within a risk assessment approach because it enables one to have regard to an operator's track record and the likelihood that it will continue to meet its obligations and its targets.

So it is submitted that a bond system which permits eligibility for a bond discount should also be considered and that, if adopted, it should be done so by reference to clear eligibility criteria.

Question 27 is a discrete topic that arose principally through the evidence of Mr Webb and it directs attention to whether the mine is required to provide a

financial assurance to the EPA in respect of landfill. We give a short and simple answer: yes, it is plain that a financial assurance is required, but the assurance level has never been set or implemented by the EPA.

The final question we pose relates to, again, a separate topic, the question of fire mitigation. The simple answer is, in terms of what steps have been undertaken, that it is set out in the implementation monitor's report, but, of course, this Board will recall that there have been a large number of recommendations pertaining to the system in terms of risk mitigation, but also the physical works on the ground in terms of fire preparedness, and you will also recall from my opening submissions that the effectiveness of Hazelwood's revised procedures was road tested on 6 October this year and it transpired and Commissioner Lapsley agrees, that the new systems were not found wanting in any respect.

If the Board pleases, those are our submissions.

CHAIRMAN: Yes, Ms Forsyth.

MS FORSYTH: If the Board pleases, the Australian Gaslight Company, AGL, was formed in 1837. AGL has been around in various forms for 178 years. AGL Energy Ltd is now the largest ASX-listed owner, operator and developer of renewable energy generation in Australia. It owns AGL Loy Yang.

As the Board has heard, through AGL Loy Yang, AGL also owns and operates the Loy Yang mine, which provides 50 per cent of the Victorian community's energy needs. It performs this role with certainty and reliability. There have not been, either in AGL's time or in previous times, any major batter stability issues, fires, pollution

incidents or any other major incidents of public concern at the mine. There are no allegations before the Board that AGL has acted outside the law. AGL prides itself on its relationship with the Latrobe Valley community. For example, it runs regular ERC meetings at which representatives of the community are regularly engaged on key issues relating to the mine. Mr Rieniets said, not surprisingly, that the focus this year has been on fire management.

AGL came to this Inquiry in good faith to address the Board on the issues raised by the term of reference. It called three witnesses. All three witnesses were honest, credible, knowledgeable and expert at what they do. Where is all of this recognised in counsel assisting's submissions? One, if not the only, reference to the character of any of those witnesses in counsel assisting's submission is a submission that the answer given by Mr Rieniets was glib in relation to a particular topic. The definition of "glib" is "insincere and shallow". Could this be any further from an accurate description of the evidence given by Mr Rieniets in relation to that question or any other? We encourage the Board to take a different view.

Counsel assisting said this morning that the TRB are the truth tellers in this whole sorry saga. The TRB no doubt expressed their honestly-held views. Mr Rieniets and Professor Sullivan and Dr Gillespie did likewise. How can it possibly be put, if it is sought to be put, that they are not also the truth tellers?

Moreover, counsel assisting has painted a picture of a sorry saga. The view promulgated by these submissions is

one of extreme negativity and pessimism. Counsel assisting has identified, both in opening and closing, a number of questions that have not yet been answered in relation to the AGL Loy Yang Mine. AGL Loy Yang, which I will now call AGL to shorten these submissions, quite openly accepts that there are issues that are not yet finally resolved. However, that is not at all surprising in the context of the long life of the mine and in the current stage of the mine's life. Uncertainty is not a new issue in the management of complex systems like large coal mines. Uncertainty is a feature of all large undertakings, especially when they relate to major items of infrastructure, public infrastructure that sit within complex environments. The key issue is not whether uncertainty exists but whether there are processes in place to address and resolve uncertainties. It is the avoidance of unacceptable outcomes, rather than the elimination of uncertainty, that is ultimately important.

Mine rehabilitation and risk management are two central features of mine planning. Satisfactory completion of mine rehabilitation and the implementation of an approved risk assessment and management plan are existing core statutory obligations arising under the Act and the mining licence. AGL also recognises that appropriate mine rehabilitation and risk management are more than simply a compliance issue. AGL accepts that the right to mine is a social licence which entails a moral commitment to undertake mine rehabilitation, risk management and to engage in meaningful dialogue with the local community. Sometimes meaningful dialogue will involve the provision of information. On other occasions it will involve a duty to

consult, in the sense of receive and take into account community feedback. It is proper that there is a regulatory framework that ensures that mine rehabilitation is planned for and implemented. The framework should ensure the technical and engineering rigour of the process, noting the complex issues involved in mine rehabilitation. It is also proper that the regulator is diligent in ensuring that mining licensees perform rehabilitation works in accordance with the commitments they have made.

There has been much discussion about AGL's work plan variation 2015 during the course of the hearing. The extent to which it fully resolves issues, such as the source and quality of the water that will fill the mine void, the shape and form of batters, treatment to be provided along the mine lake shore line and other matters, have each been subject to examination. AGL readily agrees that there are uncertainties which remain which require further work, but there is no evidence to suggest that these issues will not be addressed or that they are incapable of resolution. AGL has made significant commitments, both within the body of the work plan variation 2015 and in allocating substantial resources to address these issues. Moreover, AGL has demonstrated that it takes a beyond-compliance approach to resolving uncertainties. For example, the evidence of Professor Sullivan in his witness statement is that AGL has shown a strong corporate commitment to addressing these issues and challenges. Professor McKay acknowledges that AGL has a significant program going forward to look at the surface stability of the mine batters, including field work, so that they can deliver a safe and stable batter - transcript

431-432.

AGL notes that it now has quite onerous conditions on its work plan variation which set out timeframes for resolution of key issues based upon the stages of mine life. AGL Loy Yang's work plan variation 2015 did, of course, already contain commitments to undertaking a closure plan during Stage C, i.e. before approximately 2023, including detailed planning, providing milestones and completion criteria.

Of course, 2023 is also the date of the commencement of the Loy Yang complex agreement contributions and is still some 25 years away from the anticipated date of mine closure. The submissions so far seem to be saying that work should have been done now.

Further, it is simply not correct, as EV submits, that the work plan does not set out how the progressive rehabilitation is to be done. For example, see section 6.4.3 of the work plan variation. It is submitted that broad assertions about the work plan variation should not be uncritically accepted by the Board.

While not necessarily agreeing with the drafting of the conditions that have been provided, AGL does accept that the risk based and staged approach taken by the department to the conditions is generally an appropriate one. Mr Galvin indicated that the department could take a leaf out of the New South Wales book, which is always a contentious issue in Melbourne, in drafting approval conditions. AGL agrees that conditions of approval should be written in such a way as to be easy to understand. Perhaps this does not apply so well to the conditions of approval that AGL has received.

In relation to the issue of progressive rehabilitation, there is no evidence to support a conclusion that AGL has not undertaken appropriate progressive rehabilitation to date or that significant additional rehabilitation could have practicably been undertaken but has not been. Critically, there's no evidence before the Board that any unacceptable environmental or social outcomes are associated with the current state of rehabilitation at the AGL mine. Contrary to the tone of submissions by counsel assisting, there is no crisis of rehabilitation at the AGL Loy Yang Mine. There is no evidence before the Board, as said previously, of substantial major issues.

AGL manages its risks competently. There is no reason to consider it will not do so in relation to final rehabilitation.

I'd like to turn now to each of the specific terms of reference, and looking at term of reference 8, which required consideration of short, medium and long-term options for rehabilitation, Professor Sullivan's evidence is that there is only one land form option for AGL Loy Yang's mine, and that is the option described in the 2015 work plan. The expert panel on geotechnical issues also confirmed that there is only one land form option for the Loy Yang Mine, namely the partial backfill with the pit lake option. This is critically important in relation to term of reference 8. Importantly, there is a clear distinction to be drawn between the long-term land form, on the one hand, and the potential range of end uses of that land form on the other. It is the case, of course, that the land form will define the potential range of end uses

available, but where there is only one land form that is practicable, then the land form will determine those end uses rather than the other way around. AGL's approach to rehabilitation is to work towards a safe, stable and sustainable land form in the context of its setting. The consensus among those experts giving evidence appeared to be clearly that AGL Loy Yang is taking a reasonable and responsible approach to the short, medium and long-term rehabilitation of the mine.

Turning to term of reference 9(a), which relates to the extent to which the option would decrease the risk of fire, the evidence before the Board is that the constraints on progressive rehabilitation at the mine are operational and do not reflect any unwillingness or reluctance on the part of AGL to commit financial and other resources to the task. Mr Rieniets explained, by reference to the plans contained in the work plan, the milestones for progressive rehabilitation at each stage of the mine from now through to closure. He also explained AGL's commitment to rehabilitation trials, research and development - transcript 293-294 and 341-347. He took the Board through the operational constraints on achieving greater progressive rehabilitation by reference to the plans annexed to his witness statement - transcript 342 onwards. The Board also heard evidence from Professors McKay and Sullivan about the potential stability issues that could arise if progressive rehabilitation was mandated ahead of an orderly and structured process, especially if it was mandated ahead of the trials that are required to ensure long-term stability. The Board is referred in particular to the evidence of Professor McKay on this issue at

transcript 515-17. Mr Rieniets also gave evidence about AGL's extensive fire mitigation network and fire risk manage regime. Mr Rieniets's evidence is that the batters which are not covered have extensive fire protection, both in terms of fixed infrastructure and having regard to AGL's significant mobile equipment and trained personnel. There is no reasonable basis for the Board to conclude that more progressive rehabilitation should be undertaken in relation to fire risk at the AGL Loy Yang Mine.

AGL also adopts the submissions made by Ms Doyle earlier in relation to any suggestion that the risk assessment and management plan that was undertaken by AGL was somehow inward looking. The Board is referred to the report undertaken by R4 Risk Assessors, which sets out the extensive range of internal and external consultants who had input into that risk process.

Turning now to term of reference item (b) and (c), which both relate to stability, stable land forms and long-term environmental protection, there are a number of topics of relevance here. The first is the issue of the setting. Professor Sullivan's evidence emphasised AGL's Loy Yang setting, which is a largely rural setting with no significant proximate man-made infrastructure. The land form that is proposed is entirely compatible with this rural setting.

Secondly, in relation to water quantity and quality, the work plan variation contains information about the anticipated lake level in the short-term after closure, i.e. for stability purposes, and in the long-term. While questions were directed to how long it would take to fill the lake with water, no questions were raised about the

veracity of the short and long-term levels themselves. There is no evidence to suggest that the level of approximately RL negative 22 will not achieve hydrostatic balance. AGL Loy Yang accepts that there is more work to be done in relation to assessing options to provide improved water quality in the final pit lake and this work needs to be done before any final decisions can be made about the final beneficial uses supported by the pit lake, including public recreational use.

Counsel assisting's submissions intimate that a land form that is not fit for public use may not be a "rehabilitated land form". With respect, that submission perhaps slightly misses the point. It is one thing to provide, for example, water quality of a standard for human consumption and another to provide, for example, water quality that is suitable for cattle. One would not make the submission that the provision of water quality that is suitable for a whole range of beneficial uses is not a rehabilitated land form.

AGL accepts that the extent to which bulk entitlements may be made available for rehabilitation purposes should be addressed with the relevant authorities and accepts that it is now required in its work plan to do that by the end of stage C. However, at this stage AGL has not received any indication from the authorities that it will not be able to use at least some of the water currently available to the site by way of bulk entitlements or groundwater licence. While the 700 gigalitres required to fill the lake to negative 25 RL may seem like a lot of water, it needs to be viewed in the context of the 80 gigalitres per annum that is presently available to the AGL

Loy Yang site, including the power stations, through the bulk entitlement and groundwater licensing system. We note counsel assisting's closing submissions at paragraph 60 refer to 40 gigalitres, but that is contrary to the evidence that was led on this issue at transcript 212.

AGL submits that it is entirely appropriate for it to put forward its preferred scenario for lake filling in its work plan and to work with the authorities to aim to achieve that outcome. There is no evidence before the Board to suggest its preferred scenario is fundamentally flawed. Moreover, there is no rational reason why the authorities would refuse to provide AGL with a continuing entitlement to fill its mine if it was in the net interests of the community of Victoria to provide access to that water. The evidence to date demonstrates that there appears to be advantages to reaching the stable water level as soon as is reasonably practicable.

In this context, it is important to recall the role that these mines serve, will serve and have served for decades in providing Victoria with essential services. Yes, they need water allocated to them. Yes, that water has been allocated to them to date. Yes, it is fair and reasonable for the mines to expect that that water will continue to be allocated to them for rehabilitation purposes.

Turning to term of reference 9(d), this is the term of reference which requires consideration about the extent to which the option would ensure progressive rehabilitation is carried out as required under the Act. As previously said, Mr Rieniets's evidence demonstrates the measurable milestones contained within the work plan variation against

which AGL's progressive rehabilitation can be assessed. Counsel assisting has questioned whether the department's regulatory powers should be augmented with additional enforcement action options and penalties which could be utilised by the regulator if a mine operator fails to undertake sufficient progressive rehabilitation, but the Act already has a range of options available to the regulator should there be a need to step in. Importantly, there is no evidence before the Board that the regulator has needed to step in and lacked the necessary tools for doing so. To the contrary, the evidence before the Board is that the mines have been compliant with their obligations to undertake progressive rehabilitation as set out in their relevant licences.

Turning next to term of reference 9(e), the estimated timeframe for implementing the option. AGL accepts that there's some uncertainty in relation to the time it will take to fill the lake beyond the stable water level and this will depend upon water availability at the relevant time. This issue is recognised in its 2015 work plan variation. A time of 70 years is forecast based upon the highly conservative assumption of no reliance on artesian pumping, bulk entitlements or diversion of flood waters from nearby creeks. Of course, if this was considered to be too long at some future time, the government could make available, and should make available, water for a quicker fill of the lake.

Turning next to term of reference 9(f), the options viability, any associated limitations and its estimated costs. AGL has estimated the costs of rehabilitation over the remaining life of the mine based on the 2015 work plan

variation with assistance from GHD. This is contained in Mr Rieniets's first and third witness statements, among other things. The costings undertaken to date do not give rise to concerns by AGL about the viability of conducting remediation in relation to the proposed final land form. AGL's forward planning takes into account these costs, including costs of progressive rehabilitation. AGL Energy Ltd is not a two-bit operation. Dr Gillespie gave evidence that it has an operating earnings before interest and tax in 2015 of $1.1 billion.

Term of reference 9(g), the impact of the option on any current rehabilitation plans for each mine. The answer to this term of reference is short. The only option under consideration is entirely consistent with AGL's now currently approved work plan variation.

Term of reference 9(h), whether and to what extent the option would impact the future beneficial uses of the land areas impacted by the mines. Section 79 of the Act is important in understanding the minimum regulatory requirements of mining operators in terms of rehabilitation. Insofar as the rehabilitation plan should deal with end uses, the Act requires the plan to address the desirability or otherwise of returning agricultural land to a state that is as close as reasonably possible to its state before the mining licence was granted. One must remember, of course, that the AGL Loy Yang Mine sits within a rural setting. As Ms Unger put it, that is the default position in relation to agricultural land. As the owner of the freehold of the land, AGL has an interest in addition to that of a holder of a mining tenement, in ensuring that rehabilitation of the land maximises the beneficial end use

of that land.

AGL's rehabilitation plan addresses what is contemplated by the Act. It identifies that a return to agricultural land is desirable at this stage and the final land form concept works towards that end use. There is no reason to think that the land surrounding the mine pit will not be able to be used for agricultural purposes once rehabilitated. Agricultural use is a beneficial use of land. It should not be discounted because it is not a public use, such as a potential recreational use.

The Act does not require the rehabilitation plan to identify a particular end use. As already stated, there is a distinction between land form, on the one hand, and end uses on the other. The expectation in the Act is the final land form will be safe, stable and sustainable. Further, there is a distinction to be made between articulating the concepts for possible end uses and the delivery of a possible end-use outcome. For example, if AGL was to determine - this is a purely hypothetical example - that a possible end-use outcome was a wind farm, that would not then translate into an obligation to provide that end use. The obligation would be to produce a land form that was suitable for the range of end uses articulated in the rehabilitation plan. It may be, if one wanted to use the land for one of those end uses, further work would need to be undertaken to bring that end use to fruition. The obvious example with a wind farm is putting in place the relevant plates for the turbines to be placed upon. So one needs to bear in mind what needs to be delivered under the Act, as distinct from what may be the range of end uses that may be appropriate on that land form, which of course

may vary over time. As Mr McCollough and Ms Unger both recognised, mine closure planning is a process. It is not fixed in time, it is designed to be flexible and meet the needs of the environment, the operation and the social community as it develops.

On day two of the hearings, Professor Catford asked Mr Rieniets why AGL had changed the rehabilitation plan in terms of end use from public access to private access only. The fact is that AGL Loy Yang inherited the work plan 1997 when it purchased the site, in part in 2004 and in full in 2012. That was only three years ago, or 10 years ago if you take the part acquisition. The work plan 2015, which AGL has been working on almost since it took full ownership of the mine, is the first variation that has sought a change to the rehabilitation plan. On the basis of the work undertaken to inform that work plan, AGL has developed a plan which envisages this issue of private ownership for agricultural purposes and AGL is confident that the land will be able to be returned to that agricultural use. In fact, much of the land has already been returned to grazing. However, the land form that AGL is working towards is not inconsistent with some form of public access. Clearly, the partial backfill with pit lake option would permit in theory a range of community uses to be undertaken at the site if that was thought a desirable outcome at the relevant time.

Professor Sullivan said the way the work plan variation dealt with the issue of public access was "an example of good rehabilitation process". This evidence is also largely consistent with what Ms Unger said about the need to get the science right and engineering right before

the final end uses are determined.

AGL accepts it needs to engage with the community in this process and to explain why its work plan variation takes the conservative approach that it does in relation to public access. Mr Rieniets explained that the ERC has been involved in the development of the work plan variation. The ERC, which has a broad membership base, including from the community, council, DEDJTR, Southern Rural Water and the EPA. AGL takes serious issue with the statement made by counsel assisting this morning that it may be years before that information came to light publicly. AGL has not sought to hold back this issue of its change in the work plan, but the process of community engagement needs to occur now that the work plan variation has been approved, and Mr Rieniets has agreed that that is the case at T.309. However, AGL rejects any suggestion, if there is one, that it should have surveyed the local community about whether or not it should take a conservative approach to end-of-life mine planning in submitting its work plan variation for approval. That should be a given.

In relation to term of reference 9, it really invites submissions about any other matters of relevance and AGL has nothing further to add to that term of reference.

Perhaps going back one step top the previous discussion about approval of the work plan variation, obviously the timing of this Inquiry has had significant bearing on the approval of the work plan variation and also on the resources of AGL Loy Yang since its work plan was approved some two weeks ago. So steps that perhaps might have been taken will need to be taken once this Inquiry process is over and AGL can then divert its resources back

to its usual processes.

I now turn to term of reference 10. There's been considerable discussion about the adequacy of the rehabilitation bond for the AGL mine. While clearly the current bank guarantee does not match the current rehabilitation liability of the mine, it does not necessarily follow that the bank guarantee ought to be increased, either by a single or multi step. As set out in opening submissions on term of reference 10, AGL acknowledges that it will need to engage with the department over the coming months to determine whether or not a revised bond is required in light of the 2015 work plan variation and the bond review project. Dr Gillespie's evidence is that bonds are primarily aimed at addressing the risk of default in the event of insolvency or a firm refusing to undertake final rehabilitation. Mr Cramer's evidence is that in considering the options for financial mechanisms, the state has to assess the likelihood and consequences of rehabilitation default, its willingness to take on risk, and balance this against the commercial needs of the operators, EXP.0010.001.0006. Both experts on this issue before the Inquiry gave evidence that one should look at the risk of insolvency in understanding the issue of rehabilitation bonds.

Despite setting out this broad principle, however, Mr Cramer's report failed to carry it through in any meaningful way, as opposed to the report of Dr Gillespie.

The Act enables the Minister to exercise discretion in setting the bond. This discretionary approach is appropriate. While a set of guidelines may be useful in relation to setting bonds for smaller mines and quarries

for administrative efficiency, that is not the case for the Latrobe Valley mines. To be clear, AGL Loy Yang submits that it is neither necessary or desirable to set a prescriptive set of guidelines, a prescriptive model or a prescriptive mechanism for the bonds required under the Act. Rather, the Minister should take into account a range of relevant considerations, relevant depending on the circumstances, including, firstly - and some of these matters have been put by Ms Doyle, but I'll set them out for the sake of completeness - whether there are any documented cases in Victoria of an operator of a major coal mine failing or refusing to adhere to its rehabilitation options; past conduct in relation to rehabilitation; financial stability; assets held by the mine operator and their parent companies; indicators of good corporate governance; the fact that mine operators are engaged in conducting a business which involves the supply of a product used to supply an essential service in Victoria; the likelihood of continued demand for electricity in Victoria and the lead time required to establish alternative sources of supply; the advanced planning work done by major suppliers of electricity to plan for and transition to changing energy markets and regulatory environments; the politically stable environment that we have in Victoria in relation to energy policy; the fact that coal mine operators are required to undertake progressive rehabilitation; other financial assurance mechanisms already in place to address the statement rehabilitation risks, for example, in the case of AGL, Loy Yang, the LIDAR; importantly, the risks of unplanned closure, combined with the mine operator's financial

incapacity to fulfil financial rehabilitation obligations over the projected time of the mine and, finally, the quantum of the rehabilitation costs at any particular point in time as measured against the likelihood of closure at that point in time and the likelihood of default.

Ms Unger was asked by Ms Nichols whether she had a view about the major risks to the government in achieving 100 per cent financial assurance. Her evidence was that the risk of default with large corporations is less likely because there is a reputational issue, a body of oversight and other resources that can be drawn in - T.361.

Dr Bisnart's evidence set out some interesting landscape scale rehabilitation options in East Germany. However, AGL notes the political situation in Traralgon Victoria has no parallels to the situation prior to the reunification of Germany and its associated implications for risk of default.

The evidence before the Board generally points to the rehabilitation liability of the mine going down over time as a result of progressive rehabilitation programs. Given the purpose of the bond and the evidence before the Board about the risk of default, it would be manifestly unreasonable to set the bond based upon a close-now scenario for the AGL Loy Yang Mine when the chances of the mine closing tomorrow approach zero. As Dr Gillespie explained, as the chances of default approach zero, so too does the risk. When it comes to the issue of bonds, risk equals likelihood of default times consequence. It should not be conflated with likelihood of early planned closure or with rehabilitation liability of the mines at any particular point in time.

Dr Gillespie's evidence also noted that the cost to industry can result in a net loss to society and community where there is a very small probability of the government bearing that liability. Both counsel assisting and Ms Doyle this morning have referred to the briefing note back in 1995 that was produced in relation to the Hazelwood bond and the fact that it set out the circumstances in which the author of the briefing note considered that a full mine liability should not be required as the bond, due in part to the fact that the mine was supplying part of the state's power supply. That approach some 20 years later seems eminently sensible. In the case of AGL Loy Yang, of course, the risk at end-of-mine life is all but negligible given the existence of the Loy Yang complex agreement which Mr Cramer confirmed sits at the secure end of the spectrum. The mechanism for the start of contributions commence in 2023, which is eight years. On any assessment, the risk of default by AGL Loy Yang within the next eight years is extremely unlikely.

Mr Rieniets's evidence on this was hard to argue against. He gave evidence regarding the position of AGL in the electricity market, the size and diversity of the company and the low probability of unplanned closure. AGL meets all of the criteria which Dr Gillespie and Mr Cramer acknowledged as being relevant to an assessment of the likelihood of default.

In those circumstances, AGL maintains its position that the evidence before the Board does not lead to the conclusion that the existing security arrangements for AGL Loy Yang present an unreasonable risk to the state.

I just now have one final section to address you on,

which relates to the AECOM report. The question is whether it provides a proper basis to assess AGL Loy Yang's rehabilitation liability assessment. AGL submits that mine rehabilitation liability assessments should reflect individual mine situations, be determined by mine operators, with external audit if required, and address planned likely rehabilitation costs, as per Dr Gillespie's evidence. They should also, to the extent that they address risk, be undertaken in accordance with a formal risk assessment process, including mine personnel and appropriate experts. The AECOM report runs counter to those principles. AGL does not consider that it represents a fair, realistic or appropriate rehabilitation liability assessment. AGL proposes to engage with the department in relation to the methodology, rates and risk assessment component in that report. AGL absolutely agrees with the evidence that Mr Wilson gave, that a mine would be best placed to determine its own liability. AGL supports a model where the mine provide DEDJTR with its cost estimates and the estimates are reviewed by an independent consultant. AGL does not necessarily oppose a risk-based approach to undertaking the rehabilitation liability assessment, but it needs to be undertaken transparently, which was a feature lacking in the AECOM work.

Further, AGL rejects the notion that rehabilitation liability assessment should be based upon a P95 confidence level. That approach is economically inefficient and runs counter to Dr Gillespie's evidence that bonds are not designed to deal with extremely unlikely events, but rather designed to address planned closure costs. The use of an appropriate contingency is a more transparent and

appropriate alternative.

The evidence of Dr Bowden was that in the case of Loy Yang, the P95 represented a contingency in the order of 44 per cent for the early closure plus risk scenario. If the numbers are run on the end-of-mine scenario plus risk, the P95 would represent a contingency of some 70 per cent. AGL submits that approach is unwarranted.

As noted by Ms Doyle this morning, the AECOM report nominates two dates to base its analysis on: close tomorrow, and 2037 in the case of AGL Loy Yang, which is the end-of-mining licence scenario. While the 2015 date may be relevant to assess current liability, it is not an appropriate date upon which to fix for the purpose of setting the bond, for the reasons already articulated, namely, that closure of the mine tomorrow is an absurd proposition.

The selection of 2037 may coincide with the end of mining licence, but this is not a date of any significance in relation to the AGL Loy Yang Mine, it is purely a consequence of the 40-year limit in the Act from the date of the grant of the mining licence in 1997. It is not the planned closure of the AGL Loy Yang Mine.

Moving to the specific, AGL takes exception to the 7 December report, for a number of reasons. Firstly, timing constraints under which the report was produced. It was produced between 1 and 7 December. It was not given to AGL until lunchtime on Friday, 11 December, despite the fact that it was dated 7 December. No explanation has been given for that. There was a lack of consultation with AGL about the inputs to the report and the model used. There was a lack of transparency in multiple aspects of the

report, including the failure to provide the risk register, even though AGL's solicitors had requested that information over the weekend. Basic errors in the report, some of which were picked up on AGL's cursory reading of the report over the weekend. Those errors would have had the effect of reducing cost estimates. Nor does it take account of the LIDAR in its end of mine licence scenario.

There was a lack of rigour in the rates that had been chosen by Dr Byrne and Mr Chadwick, based on their own judgments, and the fact that the risk events were based on a two-person panel, despite the fact that they dealt with complex issues, and that members of the panel had not even visited the mine or taken into account AGL's risk assessment and management plan, which one would think would be a primary document to inform such an exercise.

In the time available to review the report, AGL focused on one domain, the post execution monitoring and maintenance domain, with a raw cost of some 100 million. The report was internally inconsistent in this item. For example, the description it gave for the annual rate, first five years after execution phase, was inconsistent with the 70 years that was ascribed to that item. Evidence that was given in the box in relation to this issue was inconsistent. Under questioning from Mr Rozen, at T932 of transcript, Dr Byrne said that a 5 to 15 year intensive monitoring and maintenance program had been adopted for all three mines, but the subsequent evidence of Dr Byrne was that the numbers had been switched for AGL, with a higher cost adopted for the first 70 years at AGL Loy Yang and a lower cost for the subsequent five years. If the 70 years in the report was not simply an error, then it provides a

useful example to point to some of the major problems with the report. Firstly, the arbitrary nature of the rates that were adopted. Two different rates were selected for monitoring, 175,000 or 375,000 per year, depending on whether the rate was seen to be intensive or not. The way the rates were applied. The exact same rates were adopted for the first five years at Hazelwood and Yallourn as were adopted for 70 years at Loy Yang, despite the different monitoring and maintenance regime that would undoubtedly occur at those mines over different timeframes and, of course, the lack of transparency in the report. Why assume that rip rap will progressively be applied at one mine but assume instead very high monitoring costs and maintenance cost at the Loy Yang Mine instead of the application of rip rap? We say that this example of inconsistency between the report showed that there was an uncertainty on the part of the authors of those reports as to how to deal with this erosion issue. We say neither approach is warranted on the evidence. Ms Doyle made submissions about the need for rip rap, and in relation to the substantial ongoing monitoring and maintenance costs to deal with erosion, the answer is simple. If it was the case, because we have to assume that this is on a - the case that the state is taking over rehabilitation of these mines - if it was the case that there was substantial erosion likely over 70 years, the state would simply use some water to fill the mines more quickly.

There is another important point to make about this very high-level post-execution maintenance and monitoring figure. The AECOM report assumes that the land post rehabilitation will have no beneficial use, which is in

stark contrast to the beneficial use of rehabilitated areas for agricultural pursuits that already occurs at the Loy Yang site. The AECOM report does not take into account the extent to which any of the long-term costs of monitoring and maintenance will be offset by income generated from the land. On that basis, among others, including the difficulties with assuming end of mine life at 2037, so on that basis and others, AGL does not accept that the AECOM's estimates of costs are acceptable. It submits that the report is unreliable as an indicator of estimated rehabilitation liability.

In relation to the EPA financial assurance, AGL's submission is that financial assurances for the power stations are simply not within the term of reference for the Board of Inquiry. The Board should only consider the evidence about the EPA financial assurance insofar as it is relevant to its deliberations, about the appropriateness of the bond system and the bond model and that evidence, in AGL's submission, supports AGL's contention that a flexible approach should be taken in appropriate circumstances.

So in terms of recommendations for term of reference 10, what can the Board recommend? In relation to whether the rehabilitation liability assessment is adequate, the Board should find that AGL's reported rehabilitation liability assessment is all but irrelevant due to the new work plan variation now approved. In this regard, counsel assisting took issue with the fact that a draft report, dated 2011, was provided to the Inquiry as the basis for AGL's estimate of 53.7 million. Of course, AGL had been in the process of obtaining approval for its 2015 work plan variation for some years and that is why the mine also

offered up the updated GHD estimates of the 2015 work plan variation to the Board.

Secondly, the Board should find that the outcome of the bond review project is unknown. This issue is noncontentious. Thirdly, that the AECOM report is not a reliable indicator of rehabilitation liability. One cannot simply sweep aside the recognised flaws and limitations of the report as minor issues. They fundamentally affect the outputs. The Board is aware, of course, of AGL's own preliminary high-level internal costings, in the order of 120 million for a close-now scenario and, if one assumes that the rehabilitation liability assessment is based on a close-now scenario, then the Board could make some high-level findings that the current rehabilitation liability assessment is likely to be above its reported 2015 rehabilitation liability assessment, which, of course, was undertaken on the basis of the old work plan. That is not a contentious issue.

The second question under term of reference 8 is whether the current rehabilitation bond system is or is likely to be effective. For the reasons already given, AGL maintains its position that the evidence before the Board does not lead to the conclusion that the existing security arrangements present an unreasonable risk to the state.

Counsel assisting's submissions to the Board encourage it to reject the formalised risk assessment process for setting bonds. AGL understands the submission to be along the lines that a risk-based assessment of likelihood of default is too hard, but a risk-based assessment of the consequences of default is a good way to go. The Board is asked to reject that submission as being

internally inconsistent and to take into account Dr Gillespie's evidence about the principles of economic efficiency and equity being important in the setting of bonds.

In relation to the recommendation by counsel assisting that there could be a trust fund established for all three mines, AGL would ask the Board not to accept that proposition. It does not incentivise the mines to perform because underlying that method is an assumption that one mine may need to foot the bill of the defaulting mine - see the Accent report, p.11. This recommendation is somewhat surprising, given the way the evidence developed, and it is submitted that there is not an appropriate basis for the recommendation upon the limited evidence before the Board about such a mechanism. There was, however, discussion about a parent company guarantee and AGL submits it is appropriate to keep that option open.

In terms of any practical, sustainable and effective alternative mechanisms, AGL would not oppose a recommendation by the Board that there should be greater coordination of rehabilitation, potentially under the guidance of a locally-based coordinating body, such as Coal Resources Victoria.

AGL thanks the Board for the opportunity to participate and wishes it well for its deliberations.

CHAIRMAN: Thank you, Ms Forsyth. Yes, Dr Collins.

DR COLLINS: Chair, I note the time. Was it intended to take a short break?

CHAIRMAN: Sorry?

DR COLLINS: Were you intending to take a short break, Chair?

CHAIRMAN: I think we'll keep going.

DR COLLINS: Yes, certainly. We recognise the significant amount of work that clearly went into the written submissions that we received from counsel assisting late yesterday and we recognise that a gargantuan effort, really, has gone into marshalling an enormous volume of valuable and timely evidence in the past two weeks before the Board. In a number of respects, as we will explain, we agree with the submissions of Energy Australia. In other respects, however, the submissions have overlooked evidence adduced in the past two weeks. In respect of my client, in particular, the very substantial body of work done by and for Energy Australia in developing and executing its approved rehabilitation plan has been all but ignored. The submissions contain, for example, almost no reference to the conclusions of the suite of research, all of which was either independent or peer-reviewed, that was undertaken by or for Energy Australia in 2011 and 2012 as a result of condition 7 of the approval of its 2011 work plan variation. In counsel assisting's written submissions, that work merits a three and a half line's mention in paragraph 117.

The research addressed directly, and in considerable detail, many of the matters that counsel assisting now say have been ignored by the mines, including questions of batter stability and water quality and interconnection.

Counsel assisting said orally this morning that the reports from 2011 and 2012 "didn't answer anything". That statement is just wrong. We cannot fathom how it could have been made by someone who had read the material.

Counsel assisting's submissions also make no reference to the evidence that Energy Australia has

expended more than $9 million by way of direct costs, and considerably more in indirect costs, in progressive rehabilitation over the last nine years. Nor is there any reference in counsel assisting's submissions to the fact that the amount of net disturbed land at Yallourn has declined significantly since 2005 as a result of Energy Australia's progressive rehabilitation efforts.

As a result of these and other omissions to which I will come, which are glaring, in some respects startling and unexplained, and which cannot be allowed to pass without critical comment, we say that counsel assisting's submissions have, in important respects, fallen into the trap against which many of the witnesses warned the Board in the course of these hearings. They assume a one-size-fits-all approach can be applied to criticism of the mines and the regulator and to the viability of the various approved rehabilitation options and to the question of how best to ensure that the rehabilitation options of the operators are appropriately secured. We recognise that counsel assisting have produced their submissions in the face of significant time pressures. In their present form, however, particularly in relation to terms of reference 8 and 9, they are, with respect, not an accurate reflection of the evidence; they require substantial revision. They are not sufficiently rigorous. The community of the Latrobe Valley deserves better.

Terms of reference 8 and 9 ask about the short, medium and long-term rehabilitation options for each of the three Latrobe Valley mines. All of the evidence pointed to a pit lake at Yallourn being the only viable solution upon the cessation of mining. A fully-flooded lake was the

strategy developed by the SECV for Yallourn in 1994. A range of reports from independent experts were commissioned by the SECV in the 1990s, including a May 1993 report by GEO-Eng Pty Ltd into the flooding option; a June 1995 report by GEO-Eng assessing mine batter stability, and a 1997 report by HRL Technologies into the viability of the flooding strategy. We see no reference to any of that material in any of the submissions put to the Board today by counsel assisting.

A fully-flooded lake, consistent with the SECV's already well developed plan from the 1990s, was the solution embedded in the Yallourn Mine rehabilitation plan that was approved in January 2002. The viability of that plan was further confirmed by a concept review undertaken independently by GHD in 2005, which looked at, among other matters, lake depth, filling time and water quality issues, issues which, according to counsel assisting, the mines have simply ignored.

The approved plan was confirmed again by the suite of work done in 2011 and 2012 in response to condition 7 of the 2011 work plan variation. Apart from the one passing reference to the condition 7 materials, occupying three and a half lines at paragraph 117, there is otherwise no attention given at all to that vast body of independent and peer-reviewed work. This is a fundamental shortcoming in the submissions that have been put to the Board. It pervades them. It does a disservice to the evidence and it is apt to mislead and alarm the community.

Reliance was also placed by counsel assisting on the criticism of the mine operators made by the Technical Review Board in its 2011-2012 annual report. Counsel

assisting has, however, overlooked the frank concession made by Professor Sullivan - transcript 477, lines 8-11, that the TRB prepared that report in ignorance of all of the work that had been done by Energy Australia in 2011 and 2012, including the work in relation to lake filling, water quality, interconnection and batter stability. That concession from Professor Sullivan very significantly blunts those criticisms, at least in their application to Yallourn.

The Jacobs's report, prepared for the purposes of the work of the Board, further confirms the validity and desirability of a pit lake plan for Yallourn, noting that the plan sits somewhere between its full pit lake and partial backfill before the water table option. The Jacobs witnesses, in their oral evidence, said that their report should not be taken to be a criticism of the approved Yallourn plan - transcript 471, lines 4-7.

As Ms Doyle pointed out, Professor Sullivan, Dr McCollough, Dr Haberfield, Mr Hoxley and Professor McKay all said that they did not believe there was any other viable or better solution than a pit lake for any of the Latrobe mines.

The evidence showed that the pit lake option for Yallourn has major potential benefits for the community of the Latrobe Valley and the state. Mr Mether, at transcript 315-317, outlined an inspiring vision for the Yallourn Mine in his evidence. He pointed to the fact that he is a longstanding member of the Latrobe Valley community and he referred to the community's experience, traumatic at the time, of the benefits of the establishment of the Blue Rock Lake. Dr McCollough also pointed to the substantial

opportunities of rehabilitation and cautioned against focusing only on the risks - transcript 445, lines 11-22. Everyone was impressed with Dr von Bismarck's evidence, which was tangible proof that, properly implemented, pit lakes can become magnificent community resources. He spoke about the German experience with hydrological modelling and treatment at transcript 551, line 26, to 552, line 1. He said that if interconnection with the local river system can be achieved, there are large benefits.

It is true, as counsel assisting have stated, that a principal unknown for each of the mines is accessibility to water. As Mr Mether explained, however, in his statement, at paragraph 198, unchallenged, Energy Australia has undertaken a great deal of work in relation to lake filling. Modelling demonstrates that with natural inflows, the deployment of Energy Australia's current water entitlements and predicted overflows from the Latrobe and Morwell rivers, the likely filling time of the Yallourn void drops to as little as five to six years. Again, we see no reference to any of this work in the submissions of counsel assisting.

As Ms Doyle pointed out, and again contrary to what was submitted by counsel assisting, the Gippsland Sustainable Water strategy, Exhibit 11, is not evidence that pit lakes cannot be achieved in the Latrobe Valley. Neither Dr Davis nor Mr Rodda were able to identify what, if any, work had been done in respect of what Ms Doyle described, we think aptly, as a thought bubble. The water panel's evidence was that the Latrobe Valley water system is very reliable - at transcript 196, lines 29-31 and transcript 216, lines 1-8.

The evidence was clear that the quicker the void can be filled, the better the outcome in terms of stability and erosion and, of course, the sooner the voids can be transformed into lakes, the earlier the community will have access to what are potentially very exciting assets.

One of the outcomes of these hearings has been to highlight the need for water accessibility issues to be addressed and coordinated. Energy Australia sought to initiate a dialogue with the state on the question of water allocation in 2012. The achievement of certainty in respect of matters like water allocation would obviously assist in progressing final rehabilitation. Whilst certainty around water allocation is important, indeed vital, it is simply not correct to suggest, as counsel assisting have done, that the fact that water allocation is an unresolved issue today points to a failure on the part of either the mine operators or the regulator. We put it the other way around. It would be remarkable if that question had been finally resolved so far out from the cessation of mining. In Yallourn's case, the first of the mines are predicted to close some 17 years from now. It would also be remarkable if that question could be finally resolved this far out. It is obviously a matter that needs to be the subject of ongoing coordination, dialogue and refinement.

Counsel assisting are right to point to the fact that there is still a good deal of work to be done before mine closure but wrong, with respect, to convey to the Board or to the community that there is some kind of present or impending crisis. The work yet to be done includes further work on batter stability, but in Energy Australia's case, a

great deal has already been done, again all of it overlooked in the submissions we heard today. As Mr Mether explained, unchallenged, batter stability tests have been undertaken at different gradients and different levels of cover at Yallourn over more than 15 years. A lot has been learned as a result of the failures that occurred in 2007 and 2012. Mr Mether explained, transcript 357-358, that Energy Australia has developed detailed models all around the Yallourn Mine identifying different needs in different areas. Again, that evidence is unchallenged and we see no reference to it in the submissions put to the Board today.

There is also, of course, the question of the government-funded batter stability project, itself focused upon the Yallourn Mine.

We submit, contrary to the tenor of what was put this morning, the Board can be confident and should find that questions of stability are being addressed in a considered and competent manner at Yallourn, consistent with where one would expect to be at least 17 years out from the forecast cessation of mining.

Water quality is another ongoing issue. Again, as Mr Mether explained, unchallenged, a great deal of work has been done in that area. The Yallourn Mine, pursuant to the terms of its EPA discharge licence, returns about 15 gigalitres of water to the river system every year and has done so for many years without issue. As many of the witnesses affirmed, there are potentially huge advantages from being able to interconnect with existing watercourses and there is no reason to think that that will not be possible at Yallourn. As Professor McKay said, there's no reason why you cannot get an engineered form of

flow-through - transcript 451, line 26. Professor McKay also pointed to the natural advantages that Yallourn has over the other two mines - transcript 452, line 4.

Mr Hoxley also accepted that interconnection could lead to water quality improvements, both within the lake and without flows to existing watercourses - transcript 472, line 3.

The need for community engagement has been a recurrent theme of the present hearings, but the development of that theme has, at times, lacked focus. If, as all the evidence suggests, the only viable plan for the Yallourn Mine is the establishment of a pit lake, then community engagement needs to centre around the way in which that plan can benefit the community, not around the antecedent question of whether there should be a pit lake at all. That appears to be the way in which community engagement operated, with great success, in the German experience related by Dr Bismarck. Ms Unger also gave a credible and balanced perspective on this question - transcript 633, line 27.

It might perhaps be said that the community could have been consulted more closely in relation to the development of the SECV's pit lake plan in 1993. There was no evidence before the Board bearing one way or the other on that question, but the evidence was clear that Energy Australia has not ignored its local community. Its efforts at engagement are considerable. Again, we see little reference to this in counsel assisting's submissions.

Every year since 1996, Energy Australia has conducted quarterly meetings of its Environment Review Committee, at which questions of mine rehabilitation are routinely the

subject of discussion. The Latrobe council has at all times had representatives on the committee. Ms Rhodes-Ward's ignorance of that work in her oral evidence before the submission was surprising and somewhat disturbing. The last meeting of the committee was advertised in the Latrobe Express, although it appears no-one from the community attended the meeting in response to the advertisement.

Community engagement is an ongoing process. We're instructed that Energy Australia will hold a community open day, as it does periodically, in the new year, at which anyone with an interest in the subject will be able to gain a better understanding of the nature and extent of the rehabilitation activities that have been undertaken to date at Yallourn and the nature and benefits of the rehabilitation plan.

The rehabilitation plans for each of the mines are, in the language of some of the witnesses, matters of legacy. We do not start with a blank sheet of paper. We cannot look at the options for rehabilitation as if the past 20 years of assessment, refinement and progressive implementation of rehabilitation has not taken place. We are a very long way down the track. Fortunately, however, the evidence has not revealed any foundation for believing that there is a better option that has been overlooked. The evidence has shown that the vision for a lake at Yallourn is more likely developed and further down the track in terms of execution than the corresponding plans at the other two mines. There is every reason to be optimistic that the Yallourn pit lake will be a success story comparable to the best examples of which Dr von

Bismarck spoke in Germany. There is ovary reason to think that it will become a source of pride for the Latrobe Valley community.

Energy Australia therefore urges the Board, in relation to Yallourn, to adopt a positive and optimistic glass more than half full approach, consistent with the evidence. The community of this Valley deserves nothing less. There should be findings, in our submission, that the Yallourn rehabilitation strategy is well advanced and developed, on track, achievable, responsible and safe.

Can I address the question of governance. It cannot be doubted that greater coordination and prioritisation as between government and the three mine operators is required and that that will become increasingly important as the closure of the mines approaches. Ms Cameron's evidence was impressive. As counsel assisting have submitted, as we understand it, it seems clear that, in her terms, a lead agency model is the appropriate way forward for the Latrobe Valley mines. While of course legislation and regulations need to be regularly reviewed to ensure that they reflect best practice, we agree with what we take to be the broad consensus, perhaps with the exception of environment Victoria, that a case has not been made for throwing out the current regulatory model and starting again. We positively caution against such an approach. New levels of red tape are not desirable, nor is it desirable to superimpose upon a long-established industry wholly new rules or structures in the absence of evidence of demonstrable failure of the existing rules and structures. New rules and structures can introduce new problems, new uncertainties and new inefficiencies. There are serious

sanctions available under the existing regime for operators who fail in their obligations of rehabilitation, including progressive rehabilitation. Conditions can be imposed on licences; s.34. In extreme cases, the state can take over an operator's rehabilitation obligations and recover the costs of doing so as a debt in a court of competent jurisdiction; s.83. Contrary to counsel assisting's submissions this morning, we submit there can be no real doubt about the ability of the state to enter upon the land of a mining operator in order to give effect to its rights under s.83. The rights would be of no value were it otherwise. The Minister is empowered, under s.83, to take "any necessary action" to rehabilitate land.

There was evidence that the current principal regulator, DEDJTR, has not been as active as it should have been in some areas and has failed to coordinate effectively between different stakeholders. The lack of a formal response to the Energy Australia condition 7 materials is a glaring example. That evidence must, however, be kept in its proper context. As Mr Mether explained, there are monthly on-site meetings between Energy Australia and representatives of DEDJTR at the Yallourn site, at which monitoring and stability results are discussed, as well as progress in drainage and broader geotechnical issues - transcript 323, line 7. There are also quarterly meetings with DEDJTR on site, at which compliance activities are discussed and monitored. The regional manager of DEDJTR attends and discusses, in Mr Mether's language, "the whole range of issues from the progression of mining and rehabilitation to geotechnical, water and stability issues" - transcript 323, line 23. And Energy Australia

provides six-monthly rehabilitation reports to DEDJTR, setting out, again in Mr Mether's words, "every bit of monthly geotechnical information we have on site, our rehabilitation progress, all our bore monitoring, our water monitoring, they are very extensive" - transcript 324, line 11.

Mr Mether characterised the nature and extent of the communications as between Energy Australia and the regulator as "regular and often" - transcript 324, line 20. He said he did not consider there to be anything fundamentally broken in relation to Energy Australia's journey towards rehabilitation or its relationship with the regulator and the state more broadly - transcript 324, line 28. None of the evidence I've just recounted was challenged and none of it is acknowledged in counsel assisting's written submissions. Only the briefest reference was made to the monthly meetings in oral submissions this morning.

The evidence points, in our submission, to the desirability of, in Ms Cameron's terms, the lead agency model, led by DEDJTR, engaging in better and more coordination as between the department, the mine operators, other government agencies, the community and other stakeholders.

Could I turn to term of reference 10. In relation to term of reference 10(a), Energy Australia accepts that a case has been made for reviewing and updating the predicted costs of rehabilitation at each of the three mines. We agree with the submissions put by our learned friends for the other mine operators that the work done by AECOM is unfinished, unreliable and has significant limitations.

The AECOM assessment, as others have pointed out, was a desk-top study. It involved no site visits; it involved next to no consultation with the mine operators. The evidence was that there's been no substantive consultation between AECOM and Energy Australia since delivery of the report.

Mr Chadwick, in his oral evidence, acknowledged that further engagement with the mines would help and would inevitably affect the estimation of costs - transcript 1003, line 27. Everybody agreed that the mine operators are the best repositories of information concerning the likely cost of rehabilitation of the mines. There were errors in the assumptions made by AECOM, critical errors, in relation to all three of the mines. One obvious error that others have pointed to concerned the expected end of mining. In the case of Yallourn, AECOM was instructed to assume that mining would end in 2026, when all of the evidence is the likely cessation date is 2032. Mr Byrne conceded that an assessment of costs, calculated by reference to an end date of 2032, would yield a lower result than an assessment based on a 2026 date - transcript 1004, line 29. There were other errors or debatable propositions in the AECOM analysis. Most fundamentally, as I think everyone recognises, the analysis assumed the likelihood of occurrence of a large range of risk events calculated entirely as a matter of the subjective judgment of a panel of two, Messrs Byrne and Chadwick. Those subjective judgments were not set out in the report and are not available for scrutiny, nor were they the subject of any input from the operators - transcript 1007, line 1.

In relation to Yallourn, the assessment included an

allowance for topping up the filled lake in perpetuity at a raw or undiscounted cost of some $67 million. In the first place, there was real confusion in the AECOM report about whether topping up would be required at all - transcript 1005, line 17 to 1007, line 12. More fundamentally, however, it is difficult to see why, once a filled lake has passed to other owners and is being exploited for community or private benefits, the cost of maintaining the new owner's property should be treated as a cost of rehabilitation. At the very least, it is a debatable proposition that's not been the subject of any consideration in the AECOM report or elsewhere and it has a dramatic impact upon the estimate of costs, and we identified other apparent errors in the AECOM report in an exchange with Mr Mether at transcript 779, line 20 to 782, line 17.

Energy Australia presently estimates its rehabilitation costs at between $46 and $91 million. Those costs were not the subject of any critical attention in the evidence. Mr Mether was not challenged in relation to them at all, other than being asked by counsel assisting whether the costs included the estimated costs of research. Mr Mether responded that research is funded as an operational cost at Yallourn and Mr Mether was asked whether it included a contingency in its estimated costs. Mr Mether's response was that Energy Australia did, in the sense that it adopted conservative rates, and those exchanges were at transcript 740, lines 11-31.

When the AECOM estimated costs for Yallourn are adjusted for the errors and incorrect assumptions to which we've pointed, Energy Australia believes the corrected

estimate will come down so that it is in or close to the ballpark of that in the Schedule 19 return filed by Energy Australia.

Given the limitations to the work undertaken by AECOM, the errors in it, the absence of any critical analysis at these hearings of Energy Australia's own estimated costings, apart from those matters to which I have referred, we say there is no proper foundation. We go further; we say there is no foundation at all for the submission that the AECOM costings ought to be treated as more reliable than those of Energy Australia.

Like everyone, we agree with counsel assisting that there is merit in the s.79A model towards the calculation and verification of rehabilitation costs. The mine operators have the intimate and superior knowledge of their operations. They should be the first port of call for conducting estimates of rehabilitation costs. They should, however, we agree, be done according to a consistent set of guidelines and be the subject of independent verification. We think Ms Unger agreed with that approach - transcript 623, lines 13 and following.

I turn briefly to term of reference 10(b). The members of the DEDJTR panel agreed with counsel assisting - this was at transcript 814, line 5 - that the current premise of the bond requirement in Part 7 of the Act is "to provide the state with sufficient money to rehabilitate a mine if the mine owner walked away". If that is the proper premise of the bond requirement, then, plainly enough, the current bonds are inadequate and a case has been made for their upwards revision. There is, however, as Professor Catford in particular observed in the course of questioning

at the hearings, there is an antecedent question which is at the heart of term of reference 10(c), and that question is what is the purpose of a rehabilitation bond? In relation to that question of public policy, it seems to us that much more work needs to be done and that the present board can contribute to that work by providing a focus for the further work by identifying some of the matters that need to be addressed. To that end, we finish our oral submissions with a few brief observations.

First, it is a matter of regret that the NERA Economics report was not available to the Board in time for the present hearings. It is likely to make a substantial contribution to the debate because NERA has, it seems, been expressly asked to consider what policy ought to underpin a rehabilitation bond mechanism. Mr Wilson said that at transcript 829, line 11.

It is also a matter of regret that the Rehabilitation Bond Review Project has not yet completed its work, not the least because the completion of that work is assumed in term of reference 10. Again, the outcome of that project would inevitably have informed the Board in answering term of reference 10(c).

The Accent report is a valuable report. It canvasses a range of alternatives to the current bond system, all of which, in our submission, merit further consideration. Flexibility has been shown to be a key consideration. In this area, again, a one-size-fits-all approach is unlikely to be the optimal solution for protection of the state's legitimate interest in not being left bearing rehabilitation costs.

At the end of the day, however, the Accent report is

an options paper. The merits of the different options were not the subject of detailed scrutiny in the present hearings.

The 10 principles identified in the KPMG report commanded general acceptance by those who gave evidence before the Board. Those principles favour the development of a rehabilitation assurance mechanism that provides incentives to mine operators to comply with their rehabilitation obligations and that sanctions operators when they don't. Regrettably, the Board has not been given the ammunition that would be necessary to make recommendations about how that laudable public policy outcome might be achieved, whether through reform of the existing Board mechanism or otherwise.

Dr Gillespie's report, like the Accent report, was also valuable and, in our submission, merits further consideration. He made a point which is both obvious and correct, namely, that the present system assumes, in effect, that the risk of the mine operators walking away from their rehabilitation obligations or becoming insolvent is so great that they should be compelled to provide security for 100 per cent of the estimated rehabilitation costs up-front. That assumption is plainly wrong. It has deleterious economic impacts upon the mining operators. It may serve as a disincentive to progressive rehabilitation. It ties up very significant amounts of capital in protection of a low-level risk. Whatever the merits of the current system in its application to small and speculative mining operations, it is a blunt and economically inefficient mechanism when applied to the Latrobe Valley coal mine operators, which, it must be recalled, supply an

essential service and are part of large diversified corporations.

We agree with counsel assisting's conclusion that it is premature to consider alternative mechanisms for securing rehabilitation options. We also agree with counsel assisting that there should not be change for change's sake. Against those recommendations, we disagree with counsel assisting's recommendation that a trust fund be established from 2018. In the first place, it is inconsistent with those conclusions of prematurity and change for change's sake. While we can see potential merit in a trust fund as a mechanism for ensuring that ongoing maintenance obligations are secured after ownership of the filled pit lakes has past from the mine operators, that is not what was recommended by counsel assisting and that will not happen in any event until, at the earliest on present estimations, about 25 years from now.

Counsel assisting have not explained how the proposed trust fund would sit with the existing rehabilitation bond mechanism. If, as Dr Gillespie said, the mine operators already effectively pay twice, counsel assisting's recommendation would see them pay thrice. No case has been made, in our submission, for establishing a trust fund from 2018; no analysis has been attempted as to the structure of such a fund, or the contributions that ought to be made to it. The Accent report, as my learned friends at the Bar table for the mine operators have pointed out, suggests both advantages and disadvantages to the establishment of a trust fund. The desirability or otherwise of a trust fund one might expect to be the subject of analysis in the forthcoming NERA Economics report.

In short therefore, in my submission, there is an inconsistency, a fatal inconsistency, in the way in which this is being put by counsel assisting and, in addition, there is insufficient analysis of the issue such that it is simply premature for such a significant and sweeping recommendation to be made.

In our submission, in relation to term of reference 10, the Board should recommend that the state undertake further work in developing a fit for purpose model for securing the mine operator's obligations to rehabilitate the Latrobe Valley mines, in consultation with the mine operators. That work should have regard to, in the first place, consistently assessed evaluations of the likely costs of rehabilitation, following the s.79A model, conducted in the first instance by the mines and then independently verified. Secondly, a proper assessment of the true risk of the operators not complying with their legal obligations to rehabilitate the mines, either because they walk away or become insolvent. Thirdly, the desirability of providing incentives for progressive rehabilitation and sanctions for operators who don't comply with their obligations. And finally, the desirability of flexibility in the provision of security to reflect the fact that a one-size-fits-all approach is inappropriate in the context of the Latrobe Valley mines. May it please the Board.

CHAIRMAN: Thank you, Mr Collins.

MS DOYLE: Mr Chairman, may I correct an error? When I was speaking in the context of the topic of community engagement, I referred to the doorknock question that I had put to Ms Rhodes-Ward in evidence. During my oral

submissions, I, in error, referred to that doorknock as having occurred in 2014. Transcript page 50 confirms that when I was discussing that with Ms Rhodes-Ward, we were both talking about a doorknock that occurred in 2015, so it was this year and not last year, if the Board pleases.

CHAIRMAN: I think that is all that we will be hearing in terms of submissions. I would call upon Mr Rozen to perhaps, although his mind may have been on other things in the last few minutes, refer to some of the matters which we are grateful for. I will add a little more, but mine will tend to be a formal list of matters. I am conscious of the fact that people will want to get away, but I will also call upon Dr Catford, who may make a more personal approach to these sorts of things. Mr Rozen.

MR ROZEN: Thank you very much, Mr Chairman. Today marks the final day of public hearings for the Hazelwood Mine Fire Inquiry, Part 2. The terms of reference were provided to the Board in May of this year and the first public hearings were held in July, concerning term of reference 11, which focused on the closure of the Anglesea mine. In a very short period of time, this board, and its quite small group of employees and assistants, has carried out, in effect, four inquiries, the first being the Anglesea Inquiry in July and August, which has reported to the government, the second being an Inquiry conducted in the Latrobe Valley under term of reference 6, which examined the question of whether there is any relationship between the Hazelwood fire of 2014 and the death rates in the Latrobe Valley in the subsequent period. That's also reported to the government. The third Inquiry conducted looked forward to future developments that might be available in relation to

the health of residents of the Latrobe Valley, and that is a work in progress and, of course, this is the fourth of the Inquiries that the Board has engaged upon.

In the process of those four Inquiries, an enormous amount of work has been done and it is work which has addressed disparate topics, all of which are of great importance to the Victorian community generally but particularly the community of the Latrobe Valley. The impact of the work of this Inquiry will endure for many years. All of that work has been done, as I say, by a very small team. With apologies to Winston Churchill, a lot has been done by few for many Victorians. It has been a privilege to be part of this passionate and hard-working team. It is my very pleasant duty to thank a number of members of the team. It is always difficult, in these circumstances, to single out individuals, but there are some that need particular mention. In no particular order but like any good member of counsel, I'll start with my instructing solicitor, and that is the indefatigable Justine Stansen, who has been incredibly hardworking, resourceful, nothing has ever been too much trouble and it's certainly not too much trouble for her to be engaged in 10 different tasks at once and to happily accept a request to perform an 11th one. We have all seen that on numerous occasions. She's pulled together a 12-volume court book, largely on the run, with very little in the way of back-up and has overseen the incredibly smooth running of six days of evidence and now a seventh day with submissions.

Second, it would be remiss of me indeed not to mention the indomitable Ruth Shann, who has been my junior

throughout this Inquiry, one of the hardest working and, I must say, smartest barristers that I have ever had the pleasure to work with in my time at the Bar. Ruth, of course, will shortly be producing a junior of her own and I'm sure that the Board joins me in wishing her the very best. She will have different challenges to deal with, as all of the parents in the room know.

Thirdly, I'd like to mention the Secretariat. I can't mention them by name, but they've been headed up by Genelle Ryan, who took on the responsibility without any real background in running inquiries, she learnt on the run, and she's the person who makes it all happen behind the scenes and makes the rest of us look halfway competent and with a small team of secondees from the public service and others, Genelle has done an extraordinary job in keeping the show on the road, as they say.

Fourthly, I need to mention briefly the local communities of both Anglesea but particularly here in the Latrobe Valley who have followed the progress of all of the Inquiries in surprising number and kept turning up to consultation sessions, providing the Board with submissions and making us all feel welcome and as if what we were doing had a degree of relevance to their lives.

Finally, lastly, but certainly not least, I'd like to mention Anita Roper, who is, of course, the Board member who was primarily responsible for this aspect of the Board's work. She's been an inspiration to us all, full of energy and ideas, and she's been sorely missed during the two weeks of the hearings, but her recent improvements in health would indicate that she may yet be able to come off the interchange bench and provide us with some assistance

in completing the report. If the Board pleases.

CHAIRMAN: Thank you, Mr Rozen. I would add my thanks, without going into detail, to the various people that Mr Rozen has thanked and I'd also thank other people like those at the extended Bar table, with a very favourable gender mix that has obviously been noted, but I also thank but understand that you would want me to thank on your behalf those people at the back, who have, throughout the last few months, since May, when the second Inquiry was announced, have taken an interest for a variety of different reasons and will be so much better informed to pass on to so many other members of the community what has come through this Inquiry that you couldn't have possibly obtained in any other way, so I add my thanks to those people.

Can I just briefly add to what Peter has said that I particularly have found the loss of Anita Roper troubling, but I did go to hospital and saw her yesterday and it appears that she is recovering quickly.

The final thing I would add is really just of a formal note. We will be reporting on the health improvement in the Valley to the Governor on - our times are 29 January for that report and for the report on mine rehabilitation bond, on 15 March. So while you may be able to relax over the next few weeks, you can assume that a lot of us will not be able to do so. But apart from repeating my thanks in a more formal way, what I have asked John to do is to do it in a more personal way. John.

PROFESSOR CATFORD: Thank you very much, Chair. I would like to conclude with some general comments, and perhaps we might start by just recognising that this Valley, the Latrobe Valley, has been the lion of Victoria over all our

lifetime. Through power generation, the Latrobe Valley has helped create the wealth that we all enjoy today, but before wealth there is health and we found last year and through this Inquiry that, unfortunately, health has been damaged in the Valley as a consequence of that wealth creation and the mine fire itself has exacerbated the poor health in the Valley. So we do welcome and commend the government in re-opening this Inquiry to consider the health impacts from the fire, the ways that we could together improve the health of the population in an urgent, comprehensive and substantial way and also that we can look optimistically to the future of the Valley, one in which rehabilitated mines are not just safe but also are a community asset, and we very much hope that our reports, and there are still two to come, will help us on that journey to improve health and rehabilitate the mines and it is in that perspective we look to a positive, prosperous and healthy future for the Valley.

We've benefited from a very large number of participants, individuals, organisations, government representatives and the various councils, and they've had a direct interest and commitment to the health and wealth of the Valley and we thank you for that, and I think it would be true to say that in terms of our term of reference, no stone has been left unturned. This sometimes has been challenging, unpalatable, occasionally harsh, but at the least what we've done, I think, is to flush out the key issues that hopefully we can learn from and work together to build that better future and, as the saying goes, the best learning is painful learning. So we thank all of those involved for your goodwill and constructive response

to our inquiries and like counsel assisting, I'd like to also thank my colleagues on the Board, particularly the Chair, who gets up at 6 o'clock to start work on this Inquiry every day, my colleague Anita Roper, who is, I'm very pleased to say, making a good recovery after an illness, the Inquiry team, counsel assisting, not the least Peter Rozen, our senior counsel.

This Inquiry, and the one before, would not have happened, frankly, if there had not been a mine fire that had burned for 45 days in 2014 but, crucially, it would not have happened without a concerned community that took to heart the impact and demanded action not just to bounce back but to bounce up. In some ways this black cloud that enveloped the Valley will have a silver lining. So we look optimistically towards the future and we very much hope the Latrobe Valley can continue to be the lion of Victoria and we certainly believe that there is the capacity, will and ingenuity for this to happen. Our role, by definition, is limited. It will be for others now to carry on the work and it has been a great privilege to serve you.

We've had mention of Winston Churchill on a few occasions, not the least when I commented that Ms Unger had done a Churchill fellowship and that both the Chair and I have had that privilege, and I was reflecting that in fact 70 years ago a fire was burning in the Yallourn Mine which stimulated the Stretton Royal Commission and at that time Winston Churchill also made a remark, which I think is relevant to the story here, and I will paraphrase it very slightly and it would go as follows: it was the Latrobe Valley community that had the lion's heart. We had the privilege to give the roar. Thank you very much.

CHAIRMAN: Thank you.
