

**REPORT OF PROCEEDINGS BEFORE**

**GENERAL PURPOSE STANDING COMMITTEE No. 5**

**INQUIRY INTO COAL SEAM GAS**

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**Monday 12 December 2011**

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**The Committee met at Sydney**

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**PRESENT**

The Hon. R. L. Brown (Chair)

The Hon. J. Buckingham  
The Hon. R. H. Colless  
The Hon. G. J. Donnelly  
The Hon. S. MacDonald  
The Hon. Dr P. R. Phelps

**ANDREW DAVID GREGSON**, Chief Executive Officer, New South Wales Irrigators Council, and

**MARK ANDREW MOORE**, Senior Policy Analyst, New South Wales Irrigators Council, affirmed and examined:

**CHAIR:** Thank you for attending our inquiry to give us the benefit of your knowledge. Would either or both of you like to make a brief opening statement?

**Mr GREGSON:** If we might, both of us will make a very brief statement on marginally different subjects. The document that we submitted to you as our primary submission had the word "draft" written across it. It had not at the time of closing of submissions gone to our full council. It now has and it has not changed. It is now the policy of the New South Wales Irrigators Council.

**CHAIR:** I can scrub out "draft"?

**Mr GREGSON:** Please. I trust you have read the submission in great detail. If you have not, can I suggest that you do because we are pretty pleased with it as a submission? We think that it adequately covers what is a fairly difficult outcome that I am sure you are seeking and I know that most players in this debate are seeking, that is, balance. We are not here to oppose mining or coal seam gas exploration. We are here to assist in finding a means in which agriculture, mining and coal seam gas communities and those who are involved in these regions can comfortably coexist. I think that our written submission provides suggestions on how that might occur.

Can I also say at the outset that as a council we have supported the process on which the New South Wales Government has embarked, that is, a process that takes a policy particularly in respect of water resources and makes it regulatory pursuant to the Water Management Act? Policy processes are all well and good but unless they receive the backing of the legislative process then they are not as useful, particularly in terms of long-term planning, as those that our constituents need. I note that the Commonwealth is increasingly taking an interest in this particular area. We have some significant concerns in that respect because our understanding is that this is quite clearly a State-based issue. Approvals will continue to be issued at a State level. As a result we need to see the regulatory framework in place at a State level.

Our submission in respect of the role of the Commonwealth is that moving down a pathway towards having State regimes that are similar in nature provides a definitive benefit to mining and coal seam gas operators in knowing that certainty can be achieved across State borders. It is not in our interests. It is not an issue of ours in any way, shape or form. We just want to see water resources in New South Wales protected and we believe that the regulatory regime proposed here is one that can and should work. With that, for specific comments on the process I will hand over to Mr Moore.

**Mr MOORE:** We are pleased to be a part of the Strategic Regional Land Use Policy Reference Group. I would make it into an acronym but then it sounds like I have been drinking. We requested to be involved because a balance between competing users ensures that the protection of water resources must be found. There really is no option. We do not believe there is an option for failure in this particular process. The process is still ongoing and one of the most critical pieces is still missing. We have yet to see the final draft of the aquifer interference policy. This piece is, from our perspective, the piece that underwrites the entire policy. Until we evaluate and understand that critical piece of policy the outcome cannot be known and until that outcome is known we feel that the further development of mining and coal seam gas resources should cease. We believe we need to wait until we have all the information and we need to wait until we get this right. We do not really understand why there is a rush to extract all these resources. They are not going anywhere. If people cannot wait for the Strategic Regional Land Use Policy process to be concluded, then we believe that their motivations need to be questioned.

**The Hon. JEREMY BUCKINGHAM:** Hear! Hear!

**The Hon. GREG DONNELLY:** Thank you, gentlemen, for coming today to give evidence. Would you elucidate on the comment you made, Mr Gregson, in your opening statement about the view that this is primarily a State matter? Reflecting on comments of the Commonwealth Government in recent times, we are yet to see further initiatives by the Commonwealth in this area. I am not an expert in this area but I presume that some of the large aquifers run underneath State boundary lines and there may be other reasons why the

Commonwealth Government sees that it should play an active role in this area. Do you believe that the Commonwealth should, to use the common phrase, butt out and leave it to the States individually to come up with frameworks and to have comity between those frameworks as closely as possible so that companies operating across borders are not dealing with multiple pieces of legislation and regulation? Is that your primary submission?

**Mr GREGSON:** Partly. If I might elucidate on that, we are not trying nor do we want to buy into the Commonwealth versus States argument because it is largely political. From a practical point of view, the framework that New South Wales has embarked on is one that appeals to us as something that can deliver a reasonable outcome for all parties, particularly the regulatory strength of the aquifer interference policy. We harbour some reservations about the constitutional capacity of the Commonwealth to be involved as an overarching body except by agreement, possibly through the Council of Australian Governments process.

The last thing we want to see is a policy framework as opposed to a regulatory framework that ends up in front of the High Court. What we need, and I daresay the resource extraction industry needs, is some sort of certainty to be able to invest and continue to operate. If we wind up in the Commonwealth sphere and the High Court debating what the Constitution does or does not mean, I do not think that provides a sensible outcome for anybody. From our perspective that regulatory framework in New South Wales is likely to be about the strongest and most sensible protection we can hope for.

**The Hon. GREG DONNELLY:** I take the point you have just made. Do you have any fear that you could end up with a potential scenario where States are competing against each other by creating less regulation, if I could use that phrase, to make it more attractive to draw an industry compared to a State that decided to be more rigorous in the way its legislation regulated the industry? Does that create an issue for you?

**Mr GREGSON:** I think as a policy and advocacy group engaged in the Basin plan that we probably have some expertise in State boundary matters and particularly the Commonwealth involvement in it. Could you potentially see States competing via a regulatory framework as to where mining and coal seam gas exploitation exists? Yes, you could. If States are prepared to do that then I think they are probably selling the long term in favour of the short term. Would we be better off with a similar if not identical protocol across all States? Yes, absolutely, in the same way that we would be better off with the same rail gauge across States. But is that the be all and end all? Our argument would be no. The be all and end all for our members is to have a strong process that applies to New South Wales. At the moment we think the best way for that to occur is via the New South Wales Parliament.

**The Hon. GREG DONNELLY:** I take you to page 6 of your submission about produced water. What you say there is self-explanatory. Would you like to make any further elucidation on that point? This issue has come up at a number of hearings that produced water is a feature of the industry, perhaps more so in areas where production may take place. There seemed to be quite a few management consequences associated with it. It is a feature of the industry and we have to deal with it. Do you have any further comments?

**Mr GREGSON:** There are a few and perhaps from a perspective that you would not first guess. Of course we are concerned about produced water but the same time we are not in the luxurious position of a long-term average of having too much. Across parts of the Basin right now we have far too much but that is temporary in nature. The addition of some of these water resources to agriculture is not necessarily a negative result. However, as to some of the contaminants within that produced water, very small volumes can have a massive negative implication, particularly salinity. Salt is a very difficult element to pick up and remove from the Murray-Darling Basin, particularly at lower reaches of the basin. It is one of the primary reasons why we are going through the Basin planning process at the moment.

To approach it from a different perspective, one of the things that we are concerned about, and you will notice in our submission we are saying, that any reintroduced water that has been treated must be to at least the same quality. We actually do not want reintroduced water to be far too pure because that in itself potentially creates environmental problems where water that has been introduced that is too pure can have negative implications for native flora and fauna. Not to put too fine a point on it, we do not want to get blamed for everything to do with the rivers.

**The Hon. GREG DONNELLY:** In the second last paragraph under the heading "Produced water" you say:

The treatment of contaminated water (be it saline, extracted water or removed water from operations that contain chemicals) must include filtrations to remove heavy metals.

Is it your understanding—and if you do not know the answer say so—that heavy metals or at least traces of heavy metals are a common feature of the produced water that comes out of aquifers?

**Mr GREGSON:** I am not a scientist. My understanding of heavy metals is based largely in the late 1980s. I cannot help you with that one, sorry.

**The Hon. JEREMY BUCKINGHAM:** Your submission states rightly that there are three separate phases in mining and coal seam gas activity: exploration, operation and post-operation. What is your view on the similarity between the exploration phase and the production phase? There is often an argument put that we must explore to find out what the impacts on the hydrology will be, the geology, the landscape, the community as well. Do you think that the exploration phase should be how we are assessing the potential impacts or would it be better handled by an independent body?

**Mr GREGSON:** We have made a number of comments. Right through the submission it says, "independent information is absolutely critical to understanding what is going on". Independent experts paid for by applicants for mining exploration licences—I do not want to cast any aspersions on them but, frankly, a consultant will say what they are paid to say. To add, if I may, a caveat to your question, "is there a great deal of difference between the two?", it needs to be overlaid with "given current technological constraints". At the moment in order to understand what is happening particularly in an aquifer or to understand the coal seam gas production site, you actually need to drill a hole into it. That is what current technology allows you to do and there is a risk associated with that.

Our argument in most circumstances would be that that risk is too great. As my colleague alluded to earlier, what is the rush? Coal seam gas or the coal seam itself or any other mineral deposit is not going anywhere. There is no rush to get in and exploit it now; let us wait until such time as the technological constraints are broken through and we can analyse what the impacts will be without having to risk those impacts in the first instance.

**The Hon. JEREMY BUCKINGHAM:** I agree. As irrigators or representatives of irrigators do you know of any instances where you have stacked aquifers, say, with quite some separation in the geology whereby there has been a significant draw down of a lower aquifer, or even a higher aquifer, for that matter, where you have seen a depressurisation, a de-watering, of one of those adjacent aquifers? Is that a process you are familiar with?

**Mr GREGSON:** I cannot say that I can point you to a direct example other than anecdotal evidence, which is not particularly useful to you. What I can say is that yes, we are aware that there are stacked aquifers statewide and their use is very much a part of the inquiry that you are conducting at the moment. We understand that there is to be a stacked aquifer policy that is to be published by the department. We have not seen it as yet but we are looking forward to it. We have heard from some participants in the coal seam gas and mining industries that we are only interested in those aquifers that are below that for use, therefore we are only drilling through it, therefore it is not a problem, to which our response would be, "That's what BP said in the gulf".

**The Hon. JEREMY BUCKINGHAM:** The issue around water quality is fundamental. Clean water with less salt is much better for irrigation and you will end up with less salt and other nutrients deposited in your soil and potentially in your rivers. I note that you have made the point a couple of times that after the water has been processed from coal seam gas and the produced water has to be at least the same or of a higher quality. What is your view on the residual? There has been a suggestion that a use will be found for this water and that may be the case. The 300 gegalitres of water that is new to the system and can be irrigated, as long as it does not have high salt there is no problem. What about that super saline brine? In the case of Queensland they are saying 30 to 40 million tonnes, tens of millions of tonnes of salt. What is your view on whether we should be creating that much salt in the system, whether we can manage that salt and how we should manage it?

**Mr GREGSON:** I think you have hit the nail on the head with the term "manage it". I would have thought that it was incumbent upon the proponent of a particular scheme to provide a management scheme which is satisfactory to regulatory authority approval. I think we have pointed that out in the produced water section of our submission where we are talking about a closed system. That closed system must not allow for escape. How the contaminants within that closed system are then treated, my suggestion would be that they need to be removed from the capacity to be released back into the environment, particularly when we are talking

about salt in the Murray-Darling Basin. You cannot leave salt there. The first thing that happens is that it rains and all of a sudden it is back in the system. So storage and treatment of those by-products is something that we think the proponents should be responsible for providing a management plan for.

**The Hon. JEREMY BUCKINGHAM:** Do you think that management plan should be in place, that technology should be developed before go is pressed on this industry? Do you think that technology must be proven before there are any major development approvals?

**Mr GREGSON:** What we advocated in the executive summary of the paper on page 1 probably covers that quite nicely. Our whole approach has been a no regrets policy. It says if you can prove beyond a reasonable doubt—you will notice that we have put in there a criminal legal burden of proof and we did that quite purposefully to raise the burden of proof as high as we possibly could, and I suggest that in terms of contaminants that is appropriate—that your management plan can deal with this, that it will be a closed system and that those contaminants will be removed. I suggest that that allows for the development of technology. Yes, it must be in place before approvals are given and production or exploration commences. If that technology does not exist at the moment, it comes back to what we said earlier: What is the rush?

**The Hon. JEREMY BUCKINGHAM:** I am a bit worried; I am agreeing with you on a lot of things.

**Mr GREGSON:** I am sure we can fix that.

**The Hon. JEREMY BUCKINGHAM:** We will talk about the Murray-Darling Basin draft plan. The other technology that is often talked about is aquifer re-injection. We had a scientist, Stuart Khan, who was very sceptical of the management regimes that were being implemented in Queensland dealing with salt but also about aquifer re-injection, that there is a potential for even clean water to change between—

**The Hon. SCOT MacDONALD:** Point of order: I was pulled up for embellishing a witness' statement. I think the Hon. Jeremy Buckingham is treading perilously close to that.

**CHAIR:** I remind the Committee that if you are putting a question to the witness, by all means refer to statements that are made but get to the question, ask an opinion and we will leave it at that.

**The Hon. JEREMY BUCKINGHAM:** If you are injecting large volumes of even cleaner water into an aquifer, is that a risk in terms of changing the chemistry, mobilising compounds that may not have been mobile before?

**Mr MOORE:** I guess I go back to the point that Mr Gregson made: We are not scientists, but that is something that we have heard from our members and there are people who have concerns about how the water is being re-injected, what level of quality it has been changed to, the chemistry has changed. If you put that back into an aquifer where there is existing water there is potential that that could cause a problem.

**Mr GREGSON:** There are some wider ramifications than just water quality because remember there is a lot we do not know about an aquifer. You may be changing the pressure within that aquifer. You may be changing the level and that is part of the no regrets approach that we advocate. Let us wait until the technology is such. The changes from re-introducing water to that aquifer are limited but we do not deny that there are potentially benefits from re-injection.

**The Hon. JEREMY BUCKINGHAM:** Obviously irrigators are under a lot of pressure from the environment movement, a lot of city-based groups. Because they are paying for water now they have done a lot to cut water use throughout the Murray-Darling Basin especially. What is your view on the allocation under the draft Murray-Darling Basin plan for 300 ggalitres of water out of the Oxley-Gunnedah basin?

**Mr GREGSON:** I presume you are referring to the draft basin plan.

**The Hon. JEREMY BUCKINGHAM:** Yes.

**Mr GREGSON:** What is our view of that? My understanding is that the Murray-Darling Basin Authority was asked to assess a range of aquifers they did not during the course of the guide, and they have assessed what the sustainable diversion limit is from those aquifers. How or if or when that water gets used is obviously a State-based regulatory regime.

**The Hon. JEREMY BUCKINGHAM:** But the draft plan is suggesting 300 gigalitres of groundwater in that basin for mining. Is that something that you are aware of or concerned about?

**Mr GREGSON:** I am very aware of it and they certainly have not suggested that it is for mining. I think that is one of the most remarkable beat-ups that I have ever heard from the environment movement. What the MDBA was asked to do was assess what the sustainable diversion limit of that aquifer was and they did. What happens to that water, if anything, is a decision for a State Government.

**The Hon. JEREMY BUCKINGHAM:** You are suggesting that there was no suggestion that those 300 gigalitres were for mining.

**Mr GREGSON:** My understanding is that the letter—we have a copy of it, as I am sure you have from Friends of the Earth, which got it under a freedom of information request when they could have just asked for it in the first place—was that the New South Wales Commissioner was asked to assess what is the volume of water that is sustainable from this particular aquifer because it may be available for a range of industries, including mining. I just do not think there is a massive issue in this. The MDBA was asked to do what they do, assess the sustainable diversion of an aquifer.

**The Hon. JEREMY BUCKINGHAM:** So if there were 300 gigalitres of water coming out of that particular groundwater basin that is not a cause for concern?

**Mr GREGSON:** It depends on what you do with it.

**The Hon. Dr PETER PHELPS:** If it is the irrigators it is not a cause for concern at all.

**Mr GREGSON:** No, if it is sustainable, but it is not for irrigators. It is saline so our concern is in respect of what happens to the salt load contaminant that comes out of it and what it is used for and where that salt load ends up but the sustainable use of the resource is not something that we stand against.

**The Hon. JEREMY BUCKINGHAM:** Rabobank, which has made a submission, is obviously a major source of capital and a lender in the agricultural sector in Australia, and they are calling for a moratorium, like I think you are. One of Rabobank's concerns, and it has been put to us throughout our tours around the State, is the sterilisation of a percentage of property from coal seam gas. The coal seam gas industry says it is 2 per cent; farmers have said it is 20 per cent. What is your view of how well coal seam gas and its associated infrastructure and the maintenance and all the rest of it can integrate into a modern irrigation enterprise?

**Mr GREGSON:** Difficult. My basic knowledge—

**The Hon. JEREMY BUCKINGHAM:** When I say irrigation I mean broad acre.

**Mr GREGSON:** My basic understanding of coal seam gas is the development of a large array of both wells and pipelines. In some farming land—not all of it—you can put a pipeline into an area that will not cause a great deal of impact. In irrigation that land is regularly, particularly for broad acre irrigation laser level and land formed to the extent that water is used most efficiently. You will then see large amounts of infrastructure sometimes on top of that land—I am talking in terms of laterals or centre pivots. That sort of stuff cannot work if you have pipes running across the ground. You cannot run your lateral centre pivot irrigator over the top of coal seam gas pipelines unless they are buried, which has its own problems. One of the things we have advocated in the regional land use stakeholders group that Mr Moore has talked about is what strategic agricultural land is. I understand that that definition is still up for debate but we have submitted that land that has had significant expenditure poured into it to develop for infrastructure for irrigation should be considered strategic and as a result quarantined.

**The Hon. SCOT MacDONALD:** The main thrust of your submission is that the industry needs to have a water access licence and be part of the water sharing plan. Is that a fair assessment?

**Mr GREGSON:** Absolutely.

**The Hon. SCOT MacDONALD:** Can you give us any instances where people feel that is not the case? What I am trying to get to is that we are talking about something in the future. Have any of your members come

to you and said they are looking at their neighbours who are extracting water and are not subject to all that regulation at the moment?

**Mr GREGSON:** Again there is some anecdotal evidence of it but I cannot direct you to any particular instances. What we are looking at is the future regulatory framework. You will notice that we have said in here a couple of times that exemptions from holding water access licences should not be granted. This is a commercial activity. We are required to hold entitlements. I notice it was said earlier that farmers now pay for water. Irrigation farmers actually own water access licences. They are available in the market. If water is required for mining or coal seam gas operations then the market exists to purchase those entitlements.

**The Hon. SCOT MacDONALD:** Just getting back to this produced water, how would you see that working out in a water sharing plan where someone might actually be able to gain a credit, if you like? This is new water, it was not part of the original water sharing plan or part of the original groundwater figures. Have you put your mind to how someone might have some megalitres going back into the system and what the implication might be for the catchment or the total water sharing plan? This is fairly new stuff that we are all grappling with and I am interested in your thoughts.

**Mr GREGSON:** I think that the framework exists to do what you are talking about, a debit and credit system. If you are extracting it under an entitlement in the first instance and you are reinjecting it and the regulatory requirements for reinjection have been met then there is no reason that it should be metered twice. That is, if it is extracted on the first occasion and metered under an entitlement and then reinjected, next time you extract it it should not be metered again, you would have thought. So that debit and credit system might work, but it is going to obviously need to have the regulatory framework around quality of reinjection.

**The Hon. SCOT MacDONALD:** The New South Wales Irrigators' Council would be in a good position to contribute to that regulatory build up. In comparison to the Murray-Darling Basin Plan which Mr Buckingham spoke about, we are looking at 2,750 gigalitres potentially taken out of the basin. Do you see the coal seam gas issue as being anywhere near a greater risk to the basin than consumptive water, or even what some people are aiming for which I believe could be in the region of 4,000 gigalitres? How would you relate those two risks to the basin?

**Mr GREGSON:** We have stated consistently over the course of the last 12 months that mining and coal seam gas is the next basin plan. For us the issues will be at least as big as one another. One of the reasons that we say that is we recently provided a map to our membership particularly in southern New South Wales around the Murray and Murrumbidgee and Lachlan catchments who thought that this was primarily a northern issue. We pointed out that there are a whole series of exploration licences right across the State, including along the banks of the Murrumbidgee and Lachlan rivers. All of a sudden they sat up and took notice.

**The Hon. SCOT MacDONALD:** If the mining started to enter those markets, whether it be the Lachlan or the Murrumbidgee, and they had to buy that entitlement, is that necessarily a bad thing? At the moment the water price has dropped to next to nothing, so to speak, especially once the Commonwealth has exited the markets. Is it necessarily bad that someone can trade their water to someone who believes they can extract some value from it?

**Mr GREGSON:** The Irrigators' Council was founded 27 years ago on the belief that water should be treated as a real property right. To a significant extent that has been achieved over that period of time. It would be at the very least churlish of us to say that other commercial operators should not be in the water market. But the water market exists and this is exactly what it is for. If people need to acquire water for commercial purposes, the market exists.

**The Hon. RICK COLLESS:** You talk in your submission about the aquifer interference policy and you have mentioned the strategic regional land use policy and so on. Can you give us some idea of what you consider to be the important components of both of those policies?

**Mr GREGSON:** For us the aquifer interference policy is the key to it. There were changes made at the end of last year to the Water Management Act to allow the aquifer interference policy to become a regulation. That is why we supported the New South Wales State process. It has a framework in place to work and to work well not only for us but for the coal seam gas and mining industries as well. As we said at the outset, we have got to find a way for everybody to coexist, so we are very much in favour of that regulatory framework.

The aquifer interference policy has only been published in first draft form. We had some significant issues with it. We have made our submission back to the department. We are now waiting for a second draft. We were told that it would be before Christmas but we foolishly did not ask which year. In terms of the land use task force, Mr Moore has been assisting in that process and might have some comments to make on that.

**Mr MOORE:** There are a couple of things that are making up that policy. Right now it is the development of a gateway process that they are going through, so they are talking about the mapping process.

**Mr GREGSON:** The gateway process is probably the key to it though. There are some natural tensions on that task force but I think those tensions have the capacity to squeeze a decent policy arrangement out at the end of the day. I understand that the time frame for completion of that has been extended, which is not necessarily a bad thing. If they need extra time to get it right they should take it. But in the meantime it is disconcerting to see the headlong rush by some mining and CSG exploitation companies trying to get into it.

**The Hon. RICK COLLESS:** Can you be more specific on what actual components you would like to see in each of those?

**Mr MOORE:** There is a cost-benefit analysis that we are coming up with as well but again, having been involved in the strategic land use policy reference group, we have not seen the detail around it. So there has been a lot of back and forth and a lot of information that has been provided and has potentially been explained, but about four hours worth of information has been crammed into two hours. So it has been very difficult to get a lot of detail on these things. Right now the biggest piece we are working on is the gateway process to determine the stop light, red light, orange light, green light process. That will be I think the going ahead point for that but there are still a lot of gaps in the whole process that are really coming to a head for us.

**Mr GREGSON:** There is one key component that must be in the aquifer interference policy. At the level this Committee is operating I think it should be of interest to you. There has been perhaps a focus on assessing individual operations or individual permits. There must be a consideration of cumulative impacts. With aquifers in particular, groundwater is like a pin cushion. The first couple of holes do not make any difference but if you put a couple of thousand holes in it—it is the marginal impact of what occurred. So that cumulative impact we suspect has not been given sufficient consideration to date because, as Mr Moore says, we are waiting on quite a few details.

**Mr MOORE:** The other part I would make a comment on is the time frame that we are looking at. Mining is a fairly short time frame to extract but not much can compare to the value it is going to produce. Whereas the people we represent in irrigation, it is a long-term activity so we need that time frame to be much greater. We are talking about 100 years as opposed to the 10 to 20 years that mining will out-compete anybody else really. So that is a pretty important part to go along with the cumulative impacts.

**The Hon. RICK COLLESS:** Your membership is comprised of irrigators of different ilk, such as flood, lateral move, centre pivot and spray?

**Mr GREGSON:** We represent water access licence holders. For whatever purpose they hold those water access licences, that is who we consider our constituents to be.

**The Hon. RICK COLLESS:** Going back to that issue of the 300 gigalitres of produced water that is potentially going to be available. If the companies put that through a reverse osmosis process and clean it up, surely the product of that process might be something like 250 gigalitres, for example. It is going to be highly valuable water in terms of the irrigation industry, is it not?

**Mr GREGSON:** It is certainly going to have a value. What that value is depends on the season and where it happens to be. For example, a megalitre of water in the southern basin three years ago traded about \$1,200 and now it is \$20. The value will be set by the market.

**The Hon. RICK COLLESS:** The good thing about it is when it is worth \$1,200 a megalitre it will still be there, whereas a lot of other water will not be there.

**Mr GREGSON:** Absolutely.

**The Hon. RICK COLLESS:** On the irrigation infrastructure you commented that you did not see that a coal seam gas system could be overlaid on that. If the irrigation infrastructure is there before the coal seam gas people come in, do you not think it would be feasible and possible to design a coal seam infrastructure around the irrigation infrastructure?

**Mr GREGSON:** I would certainly hope so, and a regulatory regime that required that may well get over that problem.

**The Hon. RICK COLLESS:** I cannot see how it could work otherwise, I have to say. That is not only for the irrigation industry but also for those farms that operate on sloping land where they have got soil conservation infrastructure and those sorts of things in place. Anything that is going to overlie the property infrastructure must work in conjunction with it, not against it.

**Mr GREGSON:** I would certainly hope so.

**The Hon. Dr PETER PHELPS:** I have quick dumb question. On centre pivot irrigation in a square paddock, what are those little bits in the corner used for?

**Mr GREGSON:** There is some technology now to enable those to be used, but centre pivots are still some of the most efficient infrastructure around. But of course a lateral move does allow you to use up all of that land as well.

**The Hon. Dr PETER PHELPS:** While driving to Deniliquin I saw a lot of these centre pivots but with essentially scrub or bush or trees just doing nothing. I thought it would be a good place to put a coal seam gas well.

**Mr GREGSON:** They are not necessarily doing nothing. They may well be there as a native vegetation barrier. At the same time I suppose from our perspective you have got to understand in the basin that land is not the constraining factor, water is.

**The Hon. JEREMY BUCKINGHAM:** You said something interesting which has not really been dealt with. That is, what happens after coal seam gas has gone? What is your view of make good? You would be experts in bores of all sizes. What is your view of the industry's assertion that it can drill a double steel cased borehole down 650 metres, extract gas for 15 years and then cap it, seal it off at the top and that it will be good forever? What is your view of the long-term liability of this industry in the context of what Mr Moore was saying about the long-term value of irrigation of agricultural versus the high return but ephemeral nature of mining?

**Mr GREGSON:** Can you cap it and it will be all right forever? If a proponent of a project can present independently verified evidence that shows on a burden of proof beyond reasonable doubt that that can occur then the regulatory regime should allow that through. But on the basis of our submission, we are looking at a risk management matrix. We are looking at the capacity for damage that can occur and seeking a bond process that recognises the potential implications that may occur and has those bonds set aside for remedial works if required.

Rather than us sit here and tell you that this industry should not be allowed to progress because there are potential problems—let us be honest, that is not going to happen. We need to find a way for these two industries to sit by side in and the short, medium and long term. Our suggestion of that risk management approach and the beyond reasonable doubt framework for the provision of independent proof I think is probably the best we can achieve to get that process happening.

**The Hon. JEREMY BUCKINGHAM:** I accept that. The whole idea of a bond or a security is good. Mr Gregson, you said we have to live together for a long time. A lot of this gas will be exploited in 10 to 30 years. What about the liability for hundreds if not thousands of bore holes across a basin that have to be managed? Firstly, do you think they will have to be managed and, if so, who should be responsible? Companies could come and go and the bonds could come and go. Who has the liability for managing 1,000 bore holes in the Namoi Basin in 50 years? There is the make-good issue that Senator Bill Heffernan raised. What is your view on that?

**Mr GREGSON:** We would really disagree with Senator Heffernan because it would take us hours to get over listening to it.

**The Hon. Dr PETER PHELPS:** I think Senator Heffernan's suggestion that most New South Wales irrigation transfer to the Northern Territory probably cruelled the pitch a little.

**CHAIR:** Order! We are running over time. The witnesses should be given the opportunity to answer.

**Mr GREGSON:** You are correct: we have a long-term problem and we need a long-term solution. We do not advocate that a bond should be given back two or three years after the conclusion. If the extent of the potential impacts is 20, 30 or 50 years away, that is where the bond risk matrix process has to continue to at the very least.

**CHAIR:** Thank you both. We appreciate your coming all this way to give your evidence. We would appreciate answers to any questions on notice by 30 January.

**(The witnesses withdrew)**